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Out-group trust, intergroup anxiety, and out-group attitude as mediators of the effect of imagined intergroup contact on intergroup behavioral tendencies

Rhiannon N. Turner[1], Keon West[2], Zara Christie[3]

[1]School of Psychology, Queen's University Belfast, Belfast, UK
[2]University of Roehampton, London, UK
[3]Institute of Psychological Sciences, University of Leeds, Leeds, UK

Correspondence concerning this article should be addressed to Rhiannon Turner, School of Psychology, Queen's University Belfast, Belfast, UK BT7 1NN. E-mail: r.turner@qub.ac.uk

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Abstract

We investigated whether imagining contact with an out-group member would change behavioral tendencies toward the out-group. In Experiment 1, British high school students who imagined talking to an asylum seeker reported a stronger tendency to approach asylum seekers than did participants in a control condition. Path analysis revealed this relationship was mediated by out-group trust and, marginally, by out-group attitude. In Experiment 2, straight undergraduates who imagined an interaction with a gay individual reported a stronger tendency to approach, and a weaker tendency to avoid, gay people. Path analyses showed that these relationships were mediated by out-group trust, out-group attitude, and less intergroup anxiety. These findings highlight the potential practical importance of imagined contact and important mediators of its effects.

Research over the past half century shows that contact between members of opposing groups is associated with more positive out-group attitudes (Allport, 1954; Pettigrew & Tropp, 2006). However, one limitation of intergroup contact as a prejudice-reducing intervention is that it may be difficult to implement in segregated settings. Recently, however, it has been shown that simply imagining contact with an out-group member can have beneficial consequences for intergroup relations, generating more positive attitudes toward out-groups (Crisp, Stathi, Turner, & Husnu, 2008; Crisp & Turner, 2009; Husnu & Crisp, 2010; Stathi & Crisp, 2008; Turner, Crisp, & Lambert, 2007; Turner & West, 2012; West, Holmes, & Hewstone, 2011). In two studies, we consider the impact of imagined contact on behavioral tendencies toward the out-group; and we investigate out-group attitude, out-group trust, and intergroup anxiety as mechanisms that may underlie this relationship.

Intergroup contact

The contact hypothesis proposed that contact between groups would improve intergroup relations, provided that certain prerequisite conditions are in place: contact should be of equal status, should involve cooperation to achieve common goals, and should be supported by important societal institutions (Allport, 1954). Despite debate over the years regarding the true benefits of contact, a recent meta-analysis of over 500 studies on intergroup contact conducted by Pettigrew and Tropp (2006) found a robust highly significant effect of contact in reducing prejudice. It is therefore unsurprising that contact is currently one of the most widely used psychological interventions for the reduction of prejudice (Oskamp & Jones, 2000). Nonetheless, intergroup contact has an inevitable limitation: it can only be used when group members have the *opportunity* for contact (Phinney, Ferguson, & Tate, 1997; Turner, Hewstone, & Voci, 2007).

Unfortunately, however, there are many examples of opposing groups that have few such opportunities such as Catholics and Protestants in Northern Ireland, and Israelis and Palestinians in the Middle East (Tam, Hewstone, Kenworthy, & Cairns, 2009). One potential solution to this problem is *indirect contact*, interventions derived from the contact hypothesis but which do not involve face-to-face contact. With indirect contact, people need not have actually experienced contact with the out-group themselves to develop more positive out-group attitudes. Research to date has identified two indirect forms of contact: extended contact and imagined contact.

Extended contact

Wright, Aron, McLaughlin-Volpe, and Ropp (1997) argued that *extended contact*—the mere knowledge that in-group members have friends in the out-group—can reduce prejudice. When an out-group member is observed being friendly and positive to in-group members, expectations about the out-group's behavior toward the in-group may be more positive. Similarly, seeing an in-group member showing tolerance toward the out-group may have a positive influence on the attitudes of other in-group members. The positive relationship between extended contact and out-group attitude has been shown in a number of studies, using cross-sectional (Paolini, Hewstone, Cairns, & Voci, 2004; Turner, Hewstone, et al., 2007; Turner, Hewstone, Voci, & Vonofakou, 2008; Wright et al., 1997, Experiments 1 and 2) and experimental methodologies (Cameron, Rutland, Brown, & Douch, 2006).

Imagined contact

Extended contact requires that at least one in-group member interacts with out-group members. However, Crisp and colleagues (Crisp & Turner, 2009; Turner, Crisp et al., 2007) considered whether any direct intergroup contact is necessary in order for contact to exert a positive effect. Specifically, they argued that imagining an intergroup interaction may have similar benefits to direct intergroup contact.

There are several reasons to expect this to be the case. Mental imagery elicits emotional and motivational responses similar to real experiences (Dadds, Bovbjerg, Redd, & Cutmore, 1997), and neuropsychological studies have shown that mental imagery shares the same neurological basis as perception and employs similar neurological mechanisms as memory, emotion, and motor control (Kosslyn, Ganis, & Thompson, 2001). More specifically, within social psychology, research has investigated the role of imagining a social context on the *bystander apathy effect*, which is the idea that we are less likely to help others if there are other people present. Garcia, Weaver, Moskowitz, and Darley (2002) found that simply imagining being in a large group led to significantly less helping behavior on a subsequent task because it activated feelings of being "lost in a crowd" and "unaccountable," feelings that are associated with less helping behavior in real situations.

Similar to the effect observed by Garcia et al. (2002), mentally simulating a positive intergroup contact experience activates concepts normally associated with successful interactions with members of other groups (Crisp & Turner, 2009). These can include feeling more comfortable and less apprehensive about the prospect of future contact with the group. In addition, when people imagine intergroup contact, they should engage in conscious processes that parallel those involved in direct intergroup contact. They may, for example, actively think about what they would learn about the out-group member, how they would feel during the interaction, and how this would influence their perceptions of that out-group member and the out-group more generally. In turn, this should result in more positive out-group attitudes, similar to the effects of direct contact.

Providing evidence for imagined contact, Turner, Crisp et al. (2007) found that young participants who imagined talking to an elderly person subsequently reported less intergroup bias than did participants who imagined an outdoor scene. Moreover, straight male participants who imagined talking to gay man subsequently evaluated gay men more positively and were less anxious about interacting with gay men in the future. Subsequent research found similar effects of imagined contact on attitudes toward people of different ethnicities and nationalities (Husnu & Crisp, 2010; Stathi & Crisp, 2008), people of different religions (Turner & Crisp, 2010), and even persons with certain mental disorders (West et al., 2011).

There are two elements that have been identified as necessary for successful imagined contact. First, participants must imagine an intergroup interaction: Just thinking about an out-group member without any simulated interaction does not have the same positive effects on attitudes (Crisp et al., 2008; Turner, Crisp et al., 2007). Second, the imagined scenario must have a positive tone: The increased effectiveness of positive imagined contact, relative to neutral imagined contact, has been demonstrated experimentally (Stathi & Crisp, 2008, Experiment 1; West et al., 2011, Experiments 3 and 4). A number of alternative explanations for the effects of imagined contact have been ruled out, including cognitive load, stereotype priming (Turner, Crisp et al., 2007), demand characteristics (Turner & Crisp, 2010), and generalized positive affect (Stathi & Crisp, 2008).

Imagined contact and behavioral tendencies

Previous research has demonstrated the effect of imagined contact on attitudes (e.g., Stathi & Crisp, 2008; Turner & Crisp, 2010; Turner, Crisp et al., 2007; West et al., 2011). However, the final goal of imagined contact (and, indeed, direct contact as well) is not a change in attitudes, but an improvement in intergroup relations. It is important, therefore, to investigate the effects of imagined contact on indicators of behavior, as well as attitudes. One important benefit that imagined contact might have for intergroup relations is that it might prepare people for direct intergroup contact, or make them more likely to approach the out-group in the future. This can be explained in terms of its effect on *intergroup anxiety*, which is the negative arousal that can arise as a consequence of expectations of rejection, discrimination, or awkwardness during cross-group interactions (Stephan & Stephan, 1985).

Intergroup anxiety has been shown to result in avoidance of intergroup contact. Moreover, even if contact does occur, feelings of intergroup anxiety can poison the interaction, resulting in awkwardness or even mutual hostility (Plant & Devine, 2003). A series of studies, however, has shown that both direct intergroup contact (Islam & Hewstone, 1993; Paolini et al., 2004; Voci & Hewstone, 2003) and imagined intergroup contact (Turner, Crisp et al., 2007; West et al., 2011) can reduce intergroup anxiety. These findings suggest that if participants imagine a successful intergroup encounter, they will have feel less anxiety about intergroup interaction and will be more likely to approach the out-group in the future.

Out-group trust: another potential mediator?

While research on direct contact has identified an array of mediating mechanisms, including intergroup anxiety, self-disclosure, empathy, and trust (Islam & Hewstone, 1993; Paolini et al., 2004; Tam et al., 2009; Turner, Hewstone et al., 2007; Voci & Hewstone, 2003), research on imagined contact has so far identified just one underlying mechanism: intergroup anxiety (Turner, Crisp et al., 2007). To better understand why imagined contact has positive consequences for intergroup relations, it is important to identify other potential mediators. One mediator that might be important is out-group trust.

Out-group trust can be broadly defined as a positive expectation about the intentions and behavior of an out-group toward the in-group (Lewicki, McAllister, & Bies, 1998). Consequences of trust include enhanced cooperation, information sharing, and improved communication and problem solving, all of which are likely to contribute toward successful relations between members of different groups (Hayashi, Ostrom, Walker, & Yamagishi, 1999). Out-group trust is also a necessary part of reconciliation strategies that aim to improve community relations in the aftermath of intergroup conflicts. This is because it allows individuals to accept the risk of being vulnerable and to make conciliatory initiatives to the other party with some degree of assurance that they will not be exploited (Blackstock, 2001; Dovidio, Gaertner, Kawakami, & Hodson, 2002).

Despite its apparent benefits, out-group trust is difficult to engender. Rothbart and Park (1986) found that many trustworthy behaviors must be demonstrated before a person is considered "trustworthy," while just one untrustworthy act can deem a person "untrustworthy." Research in the interpersonal relations literature indicates that trust develops over time as a result of experiences that show that a person's behavior is predictable and dependable (e.g., Kerr, Stattin, & Trost, 1999).

There is, however, evidence that positive intergroup contact can help generate out-group trust. Tam et al. (2009) found that higher levels of positive contact between Catholic and Protestant university students in Northern Ireland predicted stronger tendencies to approach the other group and weaker tendencies to avoid or aggress against the other group. Furthermore, these relationships were mediated by higher levels of out-group trust and were marginally mediated by more positive out-group attitudes. Imagined contact is thought to have benefits similar to those of direct contact because it activates concepts associated with positive interactions with others (Crisp & Turner, 2009). Thus, we argue that positive exposure to out-group members, even imaginary, should result in more out-group trust.

The present research

Across two studies, one looking at British attitudes toward asylum seekers and the other looking at straight people's attitudes toward gay people, we investigated whether imagined contact would result in a greater tendency to approach, rather than avoid, the out-group. If imagined contact increases the tendency to approach the out-group, it will highlight the potential of imagined contact as an intervention to prepare people for direct contact. We also investigated the processes that might mediate such a relationship.

To date, the effect of imagined contact has largely paralleled that of direct contact, influencing similar outcomes (e.g., explicit attitudes, implicit attitudes, perceived out-group variability; Turner & Crisp, 2010; Turner, Crisp et al., 2007) and working via similar mechanisms (e.g., intergroup anxiety; Turner, Crisp et al., 2007). Previous research has shown that out-group trust and out-group attitude mediate the relationship between direct contact and behavioral tendencies (Tam et al., 2009). Therefore, we considered whether the same is true of imagined contact.

We also seek to expand the potential practical usefulness of imagined contact by demonstrating that it would work on a new participant group (high school students) and on prejudice toward a new target group (asylum seekers). Using asylum seekers as a target group is of particular importance because imagined contact is supposed to be a useful intervention when direct contact is rare or difficult. However, most imagined-contact research to date has used target groups with whom real contact is fairly common (e.g., the elderly, gay men; Turner, Crisp et al., 2007).

Experiment 1

In Experiment 1, we tested the hypothesis that imagining intergroup contact would increase people's tendency to approach the out-group. British high school students were either instructed to imagine interacting with an asylum

seeker or, in a control condition, to imagine interacting with an unspecified stranger. If imagining contact has similar effects to direct intergroup contact, imagining contact with an asylum seeker should result in a greater desire to approach asylum seekers, compared to the control condition, a relationship that will be mediated by out-group trust and out-group attitude.

Method

Participants

The participants in Experiment 1 were 36 British high school students (19 male, 17 female) who were aged 16 and 17. They were randomly allocated to either the imagined-contact condition or a control condition.

Procedure

We created two sets of instructions, which were designed to either evoke participants' imagination of a detailed interaction with an out-group member, or their imagination of an encounter with an unspecified individual. Participants who were assigned to the imagined-contact condition were shown a picture of an asylum seeker. Male participants were shown a picture of a young man ("Tarafa"), while female participants were shown a picture of a young woman ("Sandra"). The participants were then instructed as follows:

> I would like you to spend the next 2 minutes imagining yourself meeting and interacting with Tarafa [Sandra] for the first time. Tarafa [Sandra] is an asylum seeker from Zimbabwe who has recently come to the UK. Imagine that the interaction with Tarafa [Sandra] is positive, relaxed, and comfortable.

In the control condition, male participants were shown a picture of "Tom," while female participants were shown a picture of "Sarah." Participants were then instructed as follows:

> We would like you to spend the next 2 minutes imagining yourself meeting and interacting with Tom [Sarah] for the first time. Tom [Sarah] is a British student. Imagine that the interaction with Tom [Sarah] is positive, relaxed, and comfortable.

Participants in both conditions were given 2 min to imagine the scenario before being asked to "Write down as many things as you can about the interaction you just imagined." This was designed to reinforce the effect of the imagery task.

Measures

Following this manipulation, participants completed a short social attitudes questionnaire. Items on the scale were rated on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much*). To assess *out-group attitude*, participants completed a feeling thermometer measure, in which they were asked to indicate on a scale of 0 to 100 how positive they felt toward asylum seekers in general (Haddock, Zanna, & Esses, 1993). To measure *out-group trust*, participants were asked, "I would be able to trust an asylum seeker stranger as much as any other stranger," and "I would be able to trust an asylum seeker with personal information about myself" ($r = .29$, $p = .09$). The items used to measure *approach behavioral tendencies* were adapted from Mackie, Devos, and Smith (2000). Participants were asked to indicate agreement with the following statements: "In general, when thinking of asylum seekers, I want to . . ." which was followed with (a) talk to them; (b) find out more about them; and (c) spend time with them ($\alpha = .85$).

After completing the dependent measures, participants were asked what they thought the aim of the study was, and whether they were at all suspicious about the purposes of the study. After providing demographic information, participants were then thanked and debriefed. No participant indicated any suspicion of the hypotheses of the study.

Results

To determine whether imagining intergroup contact with an asylum seeker resulted in more trust, more positive out-group attitudes, and stronger approaching behavioral tendencies, compared to the control condition, we computed planned *t* tests. This analysis reveals more trust following the imagined intergroup contact task ($M = 5.08$), compared to the control condition ($M = 4.18$), $t(34) = -2.92$, $p = .006$; more positive out-group attitude following the imagined contact task ($M = 73.70$), compared to the control condition ($M = 56.00$), ($t\,34) = -3.61$, $p = .001$; and a stronger tendency to approach the out-group following the imagined contact task ($M = 6.38$), compared to the control condition ($M = 5.08$), $t(34) = -2.91$, $p = .006$.

We next conducted path analysis to assess whether the effect of imagined contact on approach behavioral tendency was mediated by variation in out-group trust and out-group attitude (the independent variable was contrast coded as −1 for control task and +1 for imagination task). We first considered the correlations between these variables. Imagined contact was significantly correlated with trust ($r = .45$, $p = .006$), out-group attitude ($r = .53$, $p = .033$), and approach behavioral tendency ($r = .45$, $p = .006$). Moreover, trust ($r = .56$, $p < .0005$) and out-group attitude ($r = .53$, $p = .006$) were significantly correlated with approach behavioral tendency, consistent with their putative role as mediators.

Using AMOS 7.0 (Arbuckle, 2006), we conducted path analysis with observed variables (rather than latent variables) because of the small sample size (MacCallum & Austin,

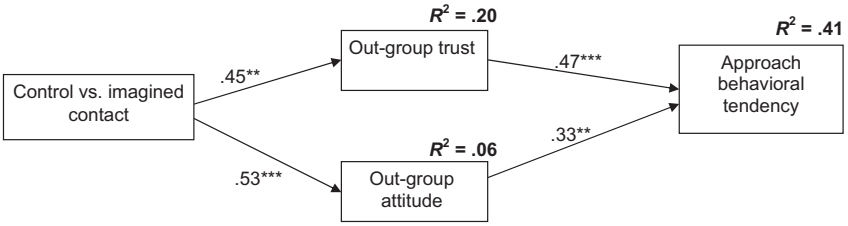

Figure 1 Path model testing out-group trust and out-group attitude as mediators of the relationship between imagined contact and approach behavioral tendency. *Note*. $N = 36$. Standardized coefficients, only significant paths are reported. Correlation between out-group attitude and out-group trust, $r = .05$. $*p < .05$. $**p < .01$. $***p < .001$.

2000). All paths were estimated; therefore, this was a *saturated model*, meaning that the fit of the model was perfect. Figure 1 shows only the significant paths in the model. As expected, imagined contact predicted desire to approach the out-group, but this relationship was indirect: imagined contact predicted more trust ($\beta = .45$, $p = .003$), and more positive out-group attitudes ($\beta = .53$, $p < .0005$). In turn, out-group trust ($\beta = .47$, $p < .0005$), and out-group attitude ($\beta = .33$, $p = .016$) were associated with a greater tendency to approach the out-group. A Sobel test confirms that out-group trust mediated the relationship between imagined contact and approach behavioral tendency ($Z = 2.06$, $p = .039$), but that out-group attitude only marginally mediated this relationship ($Z = 1.56$, $p = .12$). Together, imagined contact, out-group trust, and out-group attitude explained .41 of the variance in approach behavioral tendencies.

In summary, in Experiment 1, we found that, compared to participants in a control condition, participants who imagined contact with an asylum seeker reported stronger tendencies to approach asylum seekers. This relationship was mediated by more out-group trust and, marginally, by more positive out-group attitude.

Experiment 2

In Experiment 1, we found that, similar to direct contact (Tam et al., 2009), imagined contact results in more out-group trust and more positive out-group attitude, which, in turn, are associated with a greater tendency to approach the out-group. For several reasons, we conducted a second experiment.

First, we wanted to investigate the strength of out-group trust and attitude as mediators while including intergroup anxiety—an established mediator of the effect of direct, extended, and imagined contact (Paolini et al., 2004; Turner, Crisp et al., 2007; Turner, Hewstone et al., 2007; Turner et al., 2008)—in the model. Second, Mackie et al. (2000) proposed three possible behavioral outcomes in intergroup contexts: approaching the out-group, avoiding the out-group, and aggression against the out-group. In order to understand the impact of imagined contact on behavioral tendencies in more depth and, given that we believe that imagined contact should help to prepare people for direct contact by eliminating negative expectations, as well as generating positive expectations (Crisp & Turner, 2009), we also measured tendencies to avoid the out-group. However, we did not include a measure of aggressive behavioral tendencies, as our focus in the current research was whether or not participants are willing to engage in interaction with the out-group. Third, to investigate whether our findings would generalize to different intergroup contexts, we used a different participant group (i.e., university students) and a different target out-group (i.e., gay people). Finally, we adapted the imagined contact task slightly: we asked participants to imagine contact that involved a common interest.

Method

Participants

Study participants were 41 undergraduate students (14 male, 27 female) who identified themselves as straight. The participants ranged in age from 18 to 21 years, and they were randomly assigned to the imagined contact condition or the control condition.

Procedure

We created two sets of instructions, designed to either invoke participants' imagination of a detailed interaction with an out-group member, or their imagination of an encounter with an unspecified individual. Participants who were assigned to the *imagined contact condition* were first asked, "We would like to find out about your interests. Below, please list three things that you like to do in your leisure time." After listing three interests, the participants were then asked to put a star beside their favorite of these three activities. Participants were then instructed, "I would like you to imagine yourself meeting a gay person and completing your preferred activity with them. Imagine that the interaction is positive,

relaxed, and comfortable." In the *control condition*, participants were asked, "I would like you to imagine yourself interacting with a stranger. Imagine that the interaction is positive, relaxed, and comfortable." Participants in each condition were given 2 min to imagine the scenario before being asked to "Write down as many things as you can about the interaction you just imagined." This was designed to reinforce the effect of the imagery task.

Measures

Following this manipulation, participants completed a short questionnaire on social attitudes. *Out-group attitude* and *out-group trust* ($r = .71$, $p < .0005$) were measured as in Experiment 1, but with gay people as the target out-group. The *intergroup anxiety* measure was adapted from Stephan and Stephan (1985). Participants were asked, "If you were to meet a gay individual, to what extent would you feel *awkward*, *happy*, *confident*, and *relaxed*?" (the last three items were reverse-coded; $\alpha = .70$).

Approach behavioral tendencies were measured as in Experiment 1, but with gay people as the target group ($\alpha = .92$). *Avoid behavioral tendencies* was adapted from Mackie et al. (2000). Participants were asked to indicate agreement with the following statements: "In general, when thinking of gay people, I want to . . . ," which was followed by the items "avoid them," "keep them at a distance," and "have nothing to do with them." These items were rated on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much*; $\alpha = .91$).

To confirm that approach and avoid items were distinct from one another, we conducted an exploratory factor analysis (principal axis with oblimin rotation), retaining eigenvalues greater than 1. The analysis reveals two distinct factors, with approach items loading strongly onto one factor (>.83), and the attitude items loading strongly onto another factor (>.93). After completing the dependent measure, the participants were asked what they thought the aim of the study was, and whether they were at all suspicious about the purposes of the study. No participant reported any suspicion of the hypotheses. After providing demographic information, the participants were then thanked and debriefed.

Results

To determine whether participants who imagined interacting with a gay person reported more out-group trust, more positive out-group attitudes, less intergroup anxiety, a stronger tendency to approach the out-group, and a weaker tendency to avoid the out-group, we computed a series of planned *t* tests. Imagined contact condition (imagined contact vs. control) was the independent variable.

Participants in the imagined contact condition reported trusting gay people more ($M = 5.58$) than those in the control condition ($M = 4.79$), $t(63) = -2.23$, $p = .029$. They also reported more positive attitudes toward gay people ($M = 5.47$) than did those in the control condition ($M = 4.43$), $t(62) = 2.86$, $p = .006$. Participants in the imagined contact condition also reported less intergroup anxiety ($M = 2.16$) than did participants in the control condition ($M = 3.38$), $t(62) = 4.63$, $p = .005$. Finally, participants in the imagined contact condition reported a stronger tendency to approach gay people ($M = 6.16$) than did participants in the control condition ($M = 5.17$), $t(62) = -3.43$, $p = .001$; and a weaker tendency to avoid gay people ($M = 1.47$) than did participants in the control condition ($M = 2.62$), $t(62) = 2.47$, $p = .016$.

Next, we conducted path analysis to assess whether the effect of imagined contact on behavioral tendencies to approach and avoid the out-group was mediated by variation in out-group trust, intergroup anxiety, and out-group attitude (the independent variable was contrast coded as −1 for control task and +1 for imagination task). We first considered the correlations between these variables. Imagined contact was significantly correlated with trust ($r = .32$, $p = .041$), intergroup anxiety ($r = -.63$, $p < .0005$), out-group attitude ($r = .33$, $p = .033$), and approach ($r = .50$, $p = .001$) and avoid behavioral tendencies ($r = -.35$, $p = .027$). Moreover, trust ($r = .67$, $p < .0005$), intergroup anxiety ($r = -.67$, $p < .0005$), and out-group attitude ($r = .70$, $p < .0005$) were significantly correlated with approach behavioral tendencies. They were also each correlated with avoid behavioral tendencies (trust, $r = -.52$, $p < .0005$; intergroup anxiety, $r = .48$, $p = .002$; and out-group attitude, $r = -.63$, $p < .0005$), consistent with their putative role as mediators.

Using AMOS 7.0 (Arbuckle, 2006), we again conducted path analysis with observed variables. All paths were estimated; therefore, this was a saturated model. Figure 2 shows only the significant paths in the model. As predicted, imagined contact predicted desire to approach the out-group, but this relationship was indirect: Imagined contact predicted less intergroup anxiety ($\beta = -.63$, $p = .0005$) and more positive out-group attitudes ($\beta = .33$, $p < .025$). In turn, less intergroup anxiety ($\beta = -.31$, $p = .006$) and more positive attitude ($\beta = .38$, $p < .001$) predicted a stronger tendency to approach the out-group. Sobel tests confirm that intergroup anxiety ($Z = 3.04$, $p = .002$) and attitude ($Z = 2.03$, $p = .04$) fully mediated the relationship between imagined contact and approach behavioral tendencies.

Imagined contact also indirectly predicted tendency to avoid the out-group. Imagined contact predicted more positive out-group attitude ($\beta = .33$, $p < .025$) and more out-group trust ($\beta = .32$, $p < .032$). In turn, out-group attitude ($\beta = -.63$, $p < .0005$) and out-group trust ($\beta = .26$, $p < .05$) predicted a lower tendency to avoid the out-group. Sobel tests confirm that out-group attitude ($Z = -2.61$, $p = .009$) and, marginally, out-group trust ($Z = -1.77$, $p = .08$) mediated the

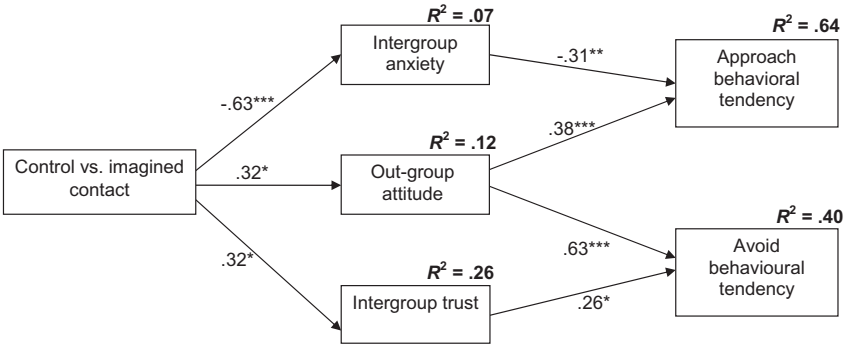

Figure 2 Path model showing intergroup anxiety, out-group trust, and out-group attitude as mediators of the relationship between imagined contact and approach and avoid behavioral tendencies. *Note*. $N = 41$. Standardized coefficients, only significant paths are reported. Correlations: intergroup anxiety/out-group trust, $r = -.46$, $p = .008$; intergroup anxiety/out-group attitude, $r = -.41$, $p = .016$; out-group trust/out-group attitude, $r = .54$, $p = .003$; approach behavioral tendencies/avoid behavioral tendencies, $r = -.21$, $p = .20$. $^*p < .05$. $^{**}p < .01$. $^{***}p < .001$.

effect of imagined contact on avoidance behavioral tendencies. Together, imagined contact and its mediators explained 64% of the variance in approach behavioral tendencies and 40% of the variance in avoid behavioral tendencies.

To summarize, compared to participants in the control condition, participants who imagined contact with a gay person reported a stronger tendency to approach gay people, and this relationship was mediated by less intergroup anxiety and more positive out-group attitudes. Participants who imagined contact with a gay person also reported a weaker tendency to avoid gay people, and this relationship was mediated by more positive out-group attitudes and more out-group trust.

General discussion

Across two experiments, we found that participants who imagined intergroup contact subsequently reported stronger tendencies to approach, and weaker tendencies to avoid, the out-groups in question and that these relationships were mediated by more out-group trust, more positive out-group attitudes, and less intergroup anxiety. In Experiment 1, British high school students who were asked to imagine contact with an asylum seeker subsequently showed a greater tendency to approach asylum seekers, compared to participants in a control condition. This relationship was mediated by out-group trust and, marginally, by out-group attitude. In Experiment 2, straight university students who were asked to imagine contact with a gay individual subsequently showed a stronger tendency to approach, and a lower tendency to avoid, gay people in general. The effect of imagined contact on (stronger) tendencies to approach gay people was mediated by more positive out-group attitude and less intergroup anxiety, whereas the effect on (lower) tendencies to avoid gay people was mediated by more positive out-group attitude and, marginally, intergroup trust.

Implications

The current findings have a number of important theoretical and practical implications. We demonstrated for the first time that imagined contact not only leads to more positive out-group attitudes (Turner, Crisp et al., 2007), but also behavioral tendencies (Mackie et al., 2000). Specifically, people who have imagined contact with an out-group member are more likely to approach out-group members and are less likely to avoid them.

We have also identified three mediators of the effect of imagined contact on behavioral tendencies: intergroup anxiety, out-group trust, and out-group attitude. Previously, only one mediator of the effects of imagined contact had been identified: intergroup anxiety (Turner, Crisp et al., 2007). The current findings, therefore, represent a considerable extension of our understanding of how imagined contact exerts a positive influence on intergroup relations. If intergroup anxiety at the prospect of contact is lessened and the out-group is considered to be trustworthy, it follows that participants would be more willing to approach—and less likely to avoid—the out-group.

The finding that imagined contact increases trust is especially important, as trust is considered to be a more demanding gauge of intergroup relations than is positive evaluation. This is because it represents a potential risk to the in-group in a way that holding positive out-group attitudes does not (Tam et al., 2009). Specifically, to trust someone, an individual must accept the risk of being vulnerable and attain some degree of assurance that he or she will not be exploited (Blackstock, 2001; Dovidio et al., 2002). The fact that imag-

ined contact results in more out-group trust suggests that it may form an important component of effective prejudice-reduction interventions.

We also considered the effects of imagined contact on prejudice against a new target group: asylum seekers. While a number of previous studies have used groups in which there is relatively little overt conflict (e.g., the elderly; Turner & Crisp, 2010; Turner, Crisp et al., 2007), negative attitudes toward asylum seekers tend to be rather more openly expressed. This is particularly the case in the current economic downturn, in which there is often the perception that asylum seekers and immigrants are taking up valuable resources (e.g., jobs, houses, financial benefits) that some believe should be reserved for British citizens (BBC News, 2009). That imagined contact can reduce prejudice toward even this stigmatized group leaves us optimistic about it as a practical means of generating harmonious intergroup relations.

Lastly, our findings also confirm that imagined contact can effectively change attitudes, behavioral tendencies, and negative emotions of younger participants (i.e., high school students) toward a stigmatized out-group. Future investigations should continue to use imagined contact with younger age groups in order to identify the scope and potential practical usability of the intervention in educational settings.

Limitations and future research

We recognize the limits of experiments with relatively small sample sizes (*N*s = 36 and 41 in Experiments 1 and 2, respectively). However, it is worth noting that our results are repeated across two experiments, and that previous research on imagined contact has used samples of similar sizes (e.g., Turner, Crisp et al., 2007). Previous research has also involved path analysis using similarly small sample sizes (Tam et al., 2009) and despite small sample sizes, studies have consistently shown that imagined contact predicts more positive intergroup attitudes (Crisp et al., 2008; Crisp & Turner, 2009; Stathi & Crisp, 2008; Turner & Crisp, 2010; Turner, Crisp et al., 2007; West et al., 2011). Responses on the key variables were also normally distributed across both studies, despite the small sample. Nonetheless, future research with larger sample sizes would allow us to compare the strength of the different mediating processes, and may permit more advanced statistical techniques, such as structural equation modeling.

We also acknowledge the shortfalls of using questionnaire-based written responses. For example, we used a self-reported measure of behavioral tendencies, rather than observing the behavior itself. This is, however, an important first step in establishing the impact of imagined contact on behavior. Furthermore, it should be noted that social psychological research relies largely on similar measures (e.g., Harwood, Hewstone, Paolini, & Voci, 2005; Hewstone, Cairns, Voci, Hamberger, & Niens, 2006; Islam & Hewstone, 1993; Paolini et al., 2004; Turner, Hewstone et al., 2007; Turner et al., 2008).

While we believe that investigating the effects of imagined contact on actual behavior would be interesting, it is beyond the scope of the current research. Our aim here was to investigate the impact of imagined contact on participants' self-reported behavioral tendencies. It seems perfectly reasonable to hypothesize that self-reported behavioral tendencies would predict actual behavior. However, we concede that imagined contact's effect on actual behavior is yet to be tested, and we recommend that future studies investigate these effects.

We also note that our findings were not fully consistent across the two experiments. While out-group trust predicted approach behavioral tendency in Experiment 1, this relationship did not arise in Experiment 2. There was a significant correlation between out-group trust and approach behavioral tendency, but when intergroup anxiety and avoid behavioral tendency were included in the model, the effect disappeared. Future research is necessary to clarify the relative strength of different mediators of the imagined contact effect, and their impact on approach and avoid behavioral tendencies. In the current research, we used only a brief measure of intergroup trust. Perhaps future research using a more comprehensive measure will be able to better clarify this relationship.

The current research indicates that imagined contact works in a rather similar way to direct contact: Intergroup anxiety is an established mediator of intergroup contact (e.g., Paolini et al., 2004), and intergroup trust and out-group attitude have been shown to mediate the positive relationship between cross-group friendship and behavioral tendencies (Tam et al., 2009). It is, however, important to acknowledge that while imagined contact may have similar consequences and work via similar processes, we do not expect its effects to be as strong or as enduring. This is because direct experiences are thought to produce stronger attitudes on an issue than indirect experiences (Fazio, Powell, & Herr, 1983; Stangor, Sullivan, & Ford, 1991). Supporting this premise, research comparing actual and extended contact typically shows actual contact to have the stronger impact on prejudice (Paolini et al., 2004; Turner, Hewstone et al., 2007). Moreover, the magnitude of the effects in the current study is rather small. Given that imagined contact is less direct than actual contact, we might expect it to also have a weaker or more temporary effect on out-group attitudes.

Despite this, imagined contact does have an important advantage over other forms of contact. While direct contact can only yield benefits when there is opportunity for contact, this is not the case for imagined contact. Accordingly, it can be used in segregated settings to generate more

positive perceptions of out-groups. In addition, it has been previously argued that a strength of imagined contact as an intervention to improve intergroup relations is its capacity to encourage people to seek out contact, remove inhibitions associated with existing prejudices, and prepare people to engage with out-groups with an open mind (Crisp & Turner, 2009). Indeed, there is evidence that imagining an event reliably increases the likelihood that the event will occur and that individuals will be more likely to carry out the target behavior (Carroll, 1978). The current findings support this premise. Thus, imagined contact might be useful in segregated settings. Moreover, when the opportunities for contact do arise, those who have imagined intergroup contact may be more likely to engage in face-to-face contact, and such interactions are more likely to be successful.

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