

### Prejudice against Muslims: anxiety as a mediator between intergroup contact and attitudes, perceived group variability and behavioural intentions

Hutchison, Paul; Rosenthal, Harriet E. S.

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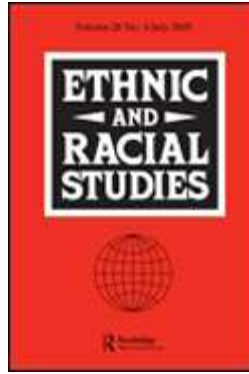
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**Prejudice against Muslims: Anxiety as a mediator between intergroup contact and attitudes, perceived group variability and behavioural intentions**

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Prejudice against Muslims:

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and behavioural intentions

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### Abstract

Numerous studies have reported an increase in prejudice against Muslims in recent years. Less research has investigated how this increase might be stemmed and relations between non-Muslims and Muslims improved. In this article, we address prejudice against Muslims from the perspective of intergroup contact theory. We conducted two cross-sectional studies to examine the relationship between non-Muslims' experiences of contact with Muslims and their intergroup anxiety, outgroup attitudes, perceptions of outgroup variability and intergroup behavioural intentions. Study 1 ( $N = 58$ ) showed that frequent high-quality contact with Muslims predicted more positive outgroup attitudes, more perceived outgroup variability and more positive behavioural intentions. These associations were mediated by intergroup anxiety. Study 2 ( $N = 60$ ) replicated these effects and additionally showed that anxiety mediates the influence of extended contact on the same outcome measures. Discussion focuses on the implications of the results for strategies aimed at improving relations between non-Muslims and Muslims.

**Keywords:** Prejudice; Islam; Contact; Anxiety; Discrimination; Muslim

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*“The prosecution case is that both these defendants...were terrorists motivated by their belief in a fundamental form of Islam. It is essential that the jury that is to try them makes its decisions based solely on the evidence it hears and it is given in this court and not based on any prejudices, beliefs or personal opinions the members of the jury may have.”*

Mr Justice Mackay –

Addressing potential jurors at the trial of Bilal Abdulla and Mohammed Asha

8<sup>th</sup> October, 2008

On the 29<sup>th</sup> June 2007, two car bombs were discovered in London’s west end. Fortunately, attempts to detonate the bombs were unsuccessful. The following day, there was a related unsuccessful suicide bomb attack on Glasgow Airport. While one of the attempted suicide bombers, Kafeel Ahmed, died from injuries sustained during the attack, Bilal Abdulla and Mohammed Asha were charged with conspiracy to murder and to cause explosions with the intent of endangering life. Asha was later found not guilty and acquitted, whereas Abdulla was jailed for a minimum of 32 years for his part in the attempted terrorist attacks. All men were Muslim, and as such, the attacks have been linked to Al Qaeda influenced terrorism (BBC Online 2008).

With the attempted London and Glasgow bombings just two of a number of planned terrorist acts to be linked to violent extremist interpretations of Islam, Muslims worldwide face prejudice in the current climate (as stressed by Mr Justice Mackay).<sup>1</sup> In the USA, following the events of September 11<sup>th</sup>, 2001, hate crimes against Arabs<sup>2</sup> and Muslims increased by 1700% (Federal Bureau of Investigation crime statistics, cited in Sheridan and Gillett 2005). In Europe, significant increases

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2  
3 in anti-Islamic prejudice were reported in all member states (Allen and Nielsen 2002).  
4  
5 Similarly, a study of British Muslims revealed that post-2001, levels of implicit and  
6  
7 indirect discrimination increased by 83 per cent and experiences of overt  
8  
9 discrimination by 7 per cent (Sheridan 2006).  
10  
11

12 Similar trends have been reported in research within social psychology.  
13  
14 Echebarria-Echabe and Fernández-Guede (2006) measured attitudes towards Arabs  
15  
16 before and after the Madrid train bombings of 2004, finding that anti-Arab attitudes  
17  
18 increased following the attack. Nosek et al. (2007) found stronger positive implicit  
19  
20 and explicit preference for 'other' names (deemed unfamiliar for US participants)  
21  
22 compared to Arab-Muslim names. Park, Felix, and Lee (2007) found an implicit  
23  
24 preference for white and black names compared to Arab-Muslim names and this  
25  
26 preference was unaffected by the participants' ethnicity (black; white; Hispanic;  
27  
28 Asian-American). Park et al. (2007) suggested that the negative view of Muslims  
29  
30 stems from exposure to information linking Muslims to terrorism, finding the effect  
31  
32 abated when participants read a positive article about Muslim culture compared to  
33  
34 those reading a neutral or negative article. Thus, research appears to support the view  
35  
36 of Mr Justice Mackay: Muslims are currently perceived in a negative light.  
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43 In this article, we address prejudice against Muslims from the perspective of  
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45 one of social psychology's most enduring strategies for improving intergroup  
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47 relations: the intergroup contact hypothesis (Allport 1954). We conducted two  
48  
49 studies to examine the relationship between non-Muslim respondents' experiences of  
50  
51 contact with Muslims and their intergroup anxiety, outgroup attitudes, perceptions of  
52  
53 outgroup variability and intergroup behavioural intentions. Study 1 investigated the  
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55 combined effect on these variables of contact quantity and contact quality. In Study 2,  
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3 we broadened our investigation to additionally examine extended contact (Wright et  
4  
5 al. 1997).

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7  
8 *Intergroup contact hypothesis*

9  
10 The intergroup contact hypothesis (Allport 1954) proposes that contact with  
11  
12 individual members of an outgroup can improve intergroup attitudes and reduce  
13  
14 prejudice. Allport (1954) argued that for contact to be effective in reducing prejudice  
15  
16 at least four situational conditions must be met. First, the contact must occur in a  
17  
18 situation of equal status. Second, the groups must have shared goals. Third,  
19  
20 attainment of such goals must involve intergroup cooperation. Finally, the initiative  
21  
22 must have the support of relevant institutions and authorities. Pettigrew (1998) later  
23  
24 proposed an additional key condition, arguing that the contact situation must allow  
25  
26 the opportunity for friendships to develop.  
27  
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29

30  
31 Since its original formulation, a considerable amount of research has  
32  
33 investigated whether the proposed prerequisite conditions are sufficient, or indeed  
34  
35 necessary, for contact to reduce prejudice. In a meta-analysis of 515 laboratory and  
36  
37 field studies, Pettigrew and Tropp (2006) demonstrated that even when the proposed  
38  
39 prerequisite conditions are not in place, contact reduces prejudice. However, in those  
40  
41 studies with optimal contact conditions, even lower levels of prejudice were reported.  
42  
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45  
46 The majority of studies in the intergroup contact framework have investigated  
47  
48 the effects of contact on attitudes or other affective/evaluative outcome measures.  
49  
50 This has been extended in recent years to additionally examine perceived group  
51  
52 variability, which refers to the extent to which individual group members are seen as  
53  
54 similar or distinct from one another (Park and Judd 1990). Research suggests that  
55  
56 people often perceive outgroups as more homogenous and undifferentiated than their  
57  
58 ingroup (e.g., Quattrone and Jones 1980; Ostrom and Sedikides 1992). Although  
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1  
2  
3 there is evidence to suggest that perceived homogeneity may, in certain situations, be  
4  
5 valued (Hutchison et al. 2006), perceiving the outgroup as homogeneous is more  
6  
7 often associated with negative stereotypes and unfavourable attitudes (Allport 1954).  
8  
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10  
11 Several studies have demonstrated that frequent high-quality contact with  
12  
13 outgroup members can increase the perception of outgroup variability. Islam and  
14  
15 Hewstone (1993) investigated contact between Muslims and Hindus in Bangladesh  
16  
17 and found that the more positive contact with outgroup members that respondents  
18  
19 experienced, the more favourable their attitudes and the greater their perceptions of  
20  
21 outgroup variability. Paolini et al. (2004) investigated contact between Catholics and  
22  
23 Protestants in Northern Ireland and found that contact was negatively associated with  
24  
25 prejudice and positively associated with perceived outgroup variability. Along  
26  
27 similar lines, Voci and Hewstone (2003) investigated contact between Italian  
28  
29 students and African immigrants and found that contact was positively associated  
30  
31 with more positive outgroup attitudes and more perceived outgroup variability. As  
32  
33 Voci and Hewstone argued, while an increase in perceived outgroup variability does  
34  
35 not represent a decrease in actual prejudice, it may act as a step towards reducing  
36  
37 negative outgroup stereotypes and improving intergroup relations.  
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43  
44 As well as outgroup attitudes and perceived outgroup variability, in the present  
45  
46 studies we also investigated the relationship between contact and intergroup  
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48 behavioural intentions. Research has consistently demonstrated that behavioural  
49  
50 intentions are a stronger predictor of a range of behaviours than are general attitudes  
51  
52 (e.g., Albarracin et al. 2001). A meta-analysis conducted by Sutton (1998) confirmed  
53  
54 that behavioural intentions generally predict between 19 and 38 per cent of the  
55  
56 variance in actual behaviour, leading the author to conclude that intentions to engage  
57  
58 in a particular behaviour are both the immediate antecedent and single best predictor  
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1  
2  
3 of actual behaviour. Despite this long-established link between behavioural  
4  
5 intentions and actual behaviour, only a few studies have examined the link between  
6  
7 intergroup contact and intergroup behavioural intentions.  
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10 In one study, Viki et al. (2006) investigated contact with the police among a  
11  
12 sample of students in the UK and found that the better the quality of contact that  
13  
14 Black respondents experienced with the police, the more positive their attitudes  
15  
16 towards assisting the police and the greater their intentions to cooperate with police  
17  
18 investigations. Along similar lines, Tam et al. (2009) investigated contact between  
19  
20 Catholics and Protestants in Northern Ireland and found that frequent high-quality  
21  
22 contact predicted greater intergroup trust, more favourable outgroup attitudes and  
23  
24 more positive intergroup behavioural “tendencies” (e.g., the intention to find out  
25  
26 more about the outgroup). The present research extends this previous work by  
27  
28 investigating the role of intergroup anxiety as a mediator between non-Muslim  
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30 respondents’ experiences of contact with Muslims and their behavioural intentions  
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32 towards Muslims.  
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### 38 *Intergroup anxiety as a mediator of contact effects*

39  
40 Having confirmed that intergroup contact can reduce prejudice, recent research has  
41  
42 attempted to establish mediators of the contact effect. One mediator receiving  
43  
44 considerable attention is intergroup anxiety, which refers to the negative affective  
45  
46 feeling often experienced during actual or anticipated intergroup contact (Stephan  
47  
48 and Stephan 1985). According to Stephan and Stephan (1985), intergroup anxiety  
49  
50 can result from negative outcome expectancies – e.g., expectations that intergroup  
51  
52 interactions will lead to embarrassment or rejection or that one’s behaviour will  
53  
54 come across as prejudiced (Plant and Devine 2003). Situations especially likely to  
55  
56 generate intergroup anxiety include those where there has been little or no previous  
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3 contact, where negative stereotypes are prevalent, or where there is a sense of threat  
4 or danger from the outgroup (Stephan and Stephan 1985; Stephan and Renfro 2002).  
5  
6 Research suggests that anxiety of this type can suppress the potential beneficial  
7  
8 effect of contact in reducing prejudice. It can also lead to hostility and avoidance of  
9  
10 contact situations (Plant and Devine 2003; Hutchison et al. in press) and an increased  
11  
12 reliance on stereotypes (Stephan and Stephan 1985; Wilder and Shapiro 1989).  
13  
14 Following positive contact, however, anxiety about future intergroup interactions is  
15  
16 often reduced (e.g., Islam & Hewstone, 1993; Bousfield and Hutchison, 2010).  
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22 Although we are aware of no research that has investigated whether intergroup  
23  
24 anxiety mediates between contact and behavioural intentions, anxiety has previously  
25  
26 been established as a mediator of the effect of contact on outgroup attitudes and  
27  
28 perceived outgroup variability. Voci and Hewstone (2003) found that anxiety  
29  
30 mediated the positive effect of contact on Italians' attitudes towards African  
31  
32 immigrants. In their study of contact between Muslims and Hindus, Islam and  
33  
34 Hewstone (1993) found that anxiety mediated the positive effect of contact on  
35  
36 outgroup attitudes and perceived outgroup variability. Similarly, in their study of  
37  
38 contact between White schoolchildren and South Asians in the UK, Turner,  
39  
40 Hewstone and Voci (2007) showed that anxiety, along with self-disclosure, mediated  
41  
42 the positive association between contact and outgroup attitudes.  
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48 The present research extends this previous work by investigating whether  
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50 variations in intergroup anxiety mediate not only the influence of intergroup contact  
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52 on outgroup attitudes and perceived outgroup variability, but also the proposed  
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54 positive effect of contact on behavioural intentions. Examining the role of intergroup  
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56 anxiety in the context of relations between non-Muslims and Muslims is especially  
57  
58 important in light of numerous reports suggesting that prejudice against Muslims has  
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3 gathered momentum in recent years, especially since the events of September 11<sup>th</sup>  
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5 2001 and claims that it is sustained by (often media-generated) anxieties about issues  
6  
7 related to national security, asylum seekers, and the potential for further 'home-  
8  
9 grown' terrorist attacks (Phillips 2006; Sheridan 2006).  
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12  
13 In the present research, we investigate whether different types of contact with  
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15 Muslims are associated with non-Muslim respondents' anxiety about interacting with  
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17 Muslims and whether this anxiety in turn influences their outgroup attitudes,  
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19 perceptions of outgroup variability and intergroup behavioural intentions.  
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### 22 *The current research*

23  
24 We conducted two studies with samples of non-Muslims in London to investigate the  
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26 relationship between their experiences of contact with Muslims and their intergroup  
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28 anxiety, outgroup attitudes, perceptions of outgroup variability and intergroup  
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30 behavioural intentions. Study 1 investigated the effects on these variables of contact  
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32 quantity and contact quality. In Study 2, we broadened our investigation to  
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34 additionally examine extended contact. The extended contact hypothesis (Wright et  
35  
36 al. 1997) proposes that knowing an ingroup member has an outgroup friend can lead  
37  
38 to more favourable outgroup attitudes, and several studies have illustrated the  
39  
40 effectiveness of extended contact in improving intergroup attitudes and increasing  
41  
42 perceptions of variability among outgroup members (Wright et al. 1997; Liebkind  
43  
44 and McAlister 1999; Paolini et al. 2004; Turner et al. 2007; Turner et al. 2008). In  
45  
46 Study 2, as well as outgroup attitudes and perceived outgroup variability, we also  
47  
48 investigated the relationship between extended contact and non-Muslims'  
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50 behavioural intentions towards Muslims.  
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### 58 **Study 1**

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3 Study 1 examined the relationship between non-Muslim respondents' experiences of  
4 contact with Muslims and their perceptions of and attitudes and behavioural  
5 intentions towards Muslims. We examined the effects on these variables of contact  
6 quantity and contact quality. Drawing on the lines of research described above, it was  
7 predicted that more frequent high-quality contact with Muslims would be associated  
8 with more positive outgroup attitudes, more perceived outgroup variability and more  
9 positive behavioural intentions towards Muslims. Additionally, it was predicted that  
10 the positive effect of contact on each of these outcome variables would be mediated  
11 by variations in intergroup anxiety.  
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### 24 Method

#### 25 *Participants*

26  
27 Fifty-eight students at a London university participated on a voluntary basis. None of  
28 the participants were Muslim. Twenty-seven were male and thirty-one were female.  
29  
30 Ages ranged from 19 to 62 with a mean age of 28.35 years ( $SD = 9.88$ ). As neither  
31 gender nor age had an effect in the analyses reported below, these variables are not  
32 considered further.<sup>3</sup>  
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#### 41 *Materials and procedure*

42  
43 Participants were approached on a university campus and asked to participate  
44 in a study investigating how people form impressions of others.<sup>4</sup> Those who agreed  
45 were handed a questionnaire containing all instructions and measures, which were  
46 presented in the same order as described below. Unless stated otherwise, responses to  
47 all items were recorded on a scale ranging from 1 (strongly disagree) to 5 (strongly  
48 agree). After they had completed the questionnaire, participants were thanked and  
49 debriefed.  
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*Intergroup contact measures.* A single item was used to measure *contact quantity*. Participants were asked to write a number in the space provided to indicate, on average, how many Muslims they come into contact with in a typical week.

*Contact quality* was assessed by asking participants to rate the quality of contact they have with Muslims on a scale ranging from 1 (very bad) to 5 (very good). Following the procedure adopted in previous contact studies (e.g., Voci and Hewstone 2003), we calculated a multiplicative index of contact quantity and contact quality to obtain a single *intergroup contact* score. A higher score on this index indicates a higher frequency of high-quality intergroup contact.

*Outgroup attitudes.* Participants indicated their attitudes towards Muslims using two items: “I like Muslims” and “I prefer to spend time with non-Muslims than Muslims”. They were informed that responses should reflect their feelings about Muslims in general, not necessarily those with whom they have contact with. The second item was reverse-scored and combined (averaged) with the first item to form a single *outgroup attitude* score ( $r = .49$ ). A higher score indicates a more positive attitude.

*Perceived outgroup variability.* Two items measured the perception of variability among Muslims: “I feel that all Muslims are similar,” and “I feel that there are different kinds of people among Muslims”. The first item was reverse-scored and combined with the second item to form a single *perceived outgroup variability* score ( $r = .79$ ). A higher score indicates more perceived outgroup variability.

*Intergroup behavioural intentions.* Two items measured the extent to which participants would intentionally engage in positive behaviour towards Muslims: “I would help a Muslim if he or she was being discriminated against,” and “I would

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2  
3 donate money to organizations whose aim is to reduce prejudice against Muslims.”

4  
5 These items were combined to form a single *intergroup behavioural intentions* score  
6  
7  
8 ( $r = .78$ ). A higher score indicates more positive intergroup behaviour intentions.  
9

10  
11 *Intergroup anxiety*. Two items measured the extent to which participants felt  
12  
13 anxious about coming into contact with Muslims: “I feel anxious when I come into  
14  
15 contact with Muslims,” and “I feel nervous when I come into contact with Muslims.”  
16  
17 These items were combined to form a single *intergroup anxiety* score ( $r = .83$ ). A  
18  
19 higher score indicates more intergroup anxiety.  
20  
21

## 22 Results and Discussion

### 23 *Correlation analyses*

24  
25 Table 1 depicts the means, standard deviations and correlations among the measures.  
26  
27  
28 As indicated in this table, contact quantity, contact quality and the multiplicative  
29  
30 intergroup contact index (referred to from this point on as *intergroup contact*) were  
31  
32 all related to the outcome measures in ways predicted by contact theory (Allport  
33  
34 1954). All three contact measures were positively associated with outgroup attitudes,  
35  
36 perceived outgroup variability and intergroup behavioural intentions, and were  
37  
38 negatively associated with intergroup anxiety. Additionally, intergroup anxiety was  
39  
40 negatively associated with intergroup anxiety. Additionally, intergroup anxiety was  
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42 negatively related to outgroup attitudes, perceived outgroup variability and  
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44 intergroup behavioural intentions.  
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50 -----  
51 Table 1 about here  
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### 54 *Mediation analyses*

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56 We conducted mediation analyses to assess whether the associations between  
57  
58 intergroup contact and the outcome measures were mediated by variations in  
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1  
2  
3 intergroup anxiety.<sup>5</sup> Following procedures outlined by Baron and Kenny (1986), this  
4  
5 involved (1) regressing each of the outcome measures on the predictor variable  
6  
7 (intergroup contact), (2) regressing the mediator (intergroup anxiety) on the predictor  
8  
9 variable, and (3) regressing each of the outcome measures in turn on the predictor  
10  
11 variable and the mediator. For mediation to be present there must be a significant  
12  
13 relationship between the mediator and the predictor variable, and when the outcome  
14  
15 measure is regressed on both the mediator and the predictor variable, a previously  
16  
17 significant relationship between the predictor and outcome measure should be  
18  
19 significantly reduced (partial mediation) or rendered non-significant (full mediation).  
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27 Table 2 about here  
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32 The regression analyses confirmed the direct associations between the variables  
33  
34 reported in Table 1. Indirect associations between the predictor and outcome  
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36 measures (entered with the mediator) and between the mediator and the outcome  
37  
38 measures (entered with the predictor) are presented in Table 2. As this table indicates,  
39  
40 previously significant relationships between intergroup contact and each of the  
41  
42 outcome measures were reduced to a non-significant level (perceived outgroup  
43  
44 variability, intergroup behavioural intentions) or significantly reduced (outgroup  
45  
46 attitudes) when intergroup anxiety was also included as a predictor in the analysis.  
47  
48 Sobel tests (Preacher and Leonardelli 2001) confirmed that these reductions were  
49  
50 significant (outgroup attitudes:  $z = 2.54$ ,  $p = .011$ ; perceived outgroup variability:  $z =$   
51  
52  $2.69$ ,  $p = .007$ ; intergroup behavioural intentions:  $z = 3.53$ ,  $p < .001$ ). In all cases,  
53  
54 intergroup anxiety remained a significant predictor when intergroup contact was also  
55  
56 included as a predictor in the analysis.  
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3 In sum, the results confirm that the association between non-Muslim  
4  
5 respondents' experiences of contact with Muslims and their perceptions of and  
6  
7 attitudes and behavioural intentions towards Muslims was mediated by their anxiety  
8  
9 about interacting with Muslims. The results are consistent with previous research  
10  
11 which has shown that intergroup anxiety mediates the positive association between  
12  
13 contact and outgroup attitudes and between contact and perceived outgroup  
14  
15 variability (see Pettigrew and Tropp 2008). In addition, the findings extend the role  
16  
17 of anxiety as a mediator of contact effects on outgroup attitudes and perceived  
18  
19 outgroup variability, to also include intergroup behavioural intentions. We conducted  
20  
21 a second study to test the robustness of these effects and also to investigate whether  
22  
23 extended contact (Wright et al. 1997) with Muslims might have similar positive  
24  
25 effects on non-Muslim respondents' perceptions of and attitudes and behavioural  
26  
27 intentions towards Muslims.  
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### 33 34 **Study 2**

35  
36 Despite the obvious benefits of contact in reducing prejudice, a limitation with the  
37  
38 contact hypothesis in its original formation (Allport 1954) is the requirement that  
39  
40 members of opposing groups must have the opportunity for positive contact in the  
41  
42 first place. In some situations, this may be impractical or even impossible. There are  
43  
44 numerous examples of groups with little or no opportunities to engage in meaningful  
45  
46 high-quality contact: for example, Israelis and Palestinians in the Middle East and  
47  
48 Catholics and Protestants in parts of Northern Ireland. Likewise, despite being one of  
49  
50 the most multicultural cities worldwide, some reports suggest that parts of London  
51  
52 (especially East London where the research was conducted) are becoming  
53  
54 increasingly segregated along religious and ethnic lines (Community Cohesion  
55  
56 Review Team 2001; BBC Online 2006; Phillips 2006). Although this assumption has  
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1  
2  
3 been strongly contested (e.g., Finney and Simpson 2009), it is nonetheless  
4  
5 worthwhile exploring whether direct contact is actually necessary to reduce prejudice,  
6  
7 or whether more vicarious forms of intergroup relationships might have a similar  
8  
9 positive effect on relations between non-Muslims and Muslims. Therefore, in Study  
10  
11 2, along contact quantity and contact quality, we additionally included a measure of  
12  
13 extended contact (Wright et al. 1997).  
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16  
17 The extended contact hypothesis (Wright et al. 1997) proposes that knowing  
18  
19 that an ingroup member has a positive relationship with an outgroup member can  
20  
21 improve attitudes towards the outgroup as a whole and set the grounds for more  
22  
23 positive intergroup relations. The benefits of extended contact in improving  
24  
25 intergroup attitudes and increasing the perception of outgroup variability are now  
26  
27 well established (Wright et al. 1997; Liebkind and McAlister 1999; Paolini et al.  
28  
29 2004; Turner et al. 2007; Turner et al. 2008). As well as attitudes towards Muslims  
30  
31 and perceived outgroup variability, in Study 2 we also examined the effects of  
32  
33 extended contact on non-Muslims' behavioural intentions towards Muslims. Few  
34  
35 studies have investigated the link between intergroup contact (direct or extended) and  
36  
37 intergroup behavioural intentions, and to our knowledge, none have examined  
38  
39 whether intergroup anxiety mediates the extended contact-behavioural intention  
40  
41 relationship. We tested this prediction in Study 2 along with seeking to replicate the  
42  
43 effects obtained in Study 1.  
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#### 50 Method

##### 51 *Participants*

52  
53 Sixty non-Muslim students at a London university participated on a voluntary basis.  
54  
55 None had participated in Study 1. Twenty-seven were male and thirty-three were  
56  
57 female. The age range was from 18 to 65, with a mean of 25.5 years ( $SD = 8.44$ ). As  
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3 neither gender nor age had an effect in the analyses, we do not discuss these  
4  
5 variables further.  
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7  
8 *Materials and procedure*  
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10 Participants were recruited on a university campus.<sup>6</sup> All participants were handed a  
11  
12 questionnaire containing the instructions and measures, which were presented in the  
13  
14 same order as described below. Unless stated otherwise, responses to all items were  
15  
16 recorded on 5-point Likert-type scales. A debriefing information sheet was handed to  
17  
18 each participant at the end of the study.  
19  
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21  
22 *Intergroup contact measures.* Participants completed the same measures of  
23  
24 *contact quantity* and *contact quality* from Study 1. As in Study 1, we computed a  
25  
26 multiplicative index of contact quantity and contact quality to provide a single  
27  
28 *intergroup contact* score. *Extended contact* was measured by asking participants to  
29  
30 write a number in the space provided to indicate how many of their close friends or  
31  
32 relatives have Muslim friends, with a higher number indicating more extended  
33  
34 contact.  
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38 *Outgroup attitudes.* Participants rated Muslims using six pairs of bipolar  
39  
40 adjectives, which were separated by a 5-point scale. The adjective pairs were the  
41  
42 same as those used by Wright et al. (1997) in their research on extended contact:  
43  
44 warm-cold, negative-positive, friendly-hostile, respect-contempt, suspicious-trusting  
45  
46 and admiration-disgust. Responses were scored such that a higher score indicates a  
47  
48 more positive outgroup attitude. The items were then combined to form a single  
49  
50 *outgroup attitude* score ( $\alpha = .90$ ). We used this measure rather than the one in Study  
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52 1 because the items in the previous measure may be more susceptible to socially  
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54 desirable responding.  
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*Perceived outgroup variability.* The same two items from Study 1 were used to measure the perception of variability among Muslims ( $\alpha = .71$ ). A higher score indicates more *perceived outgroup variability*.

*Intergroup behavioural intentions.* Four items measured participants' behavioural intentions towards Muslims. The first two items were the same as in Study 1. The other two items were: "I want to learn more about Muslim culture," and "I would like to visit a Muslim country." We included these additional items to reflect the different ways that pro-social attitudes towards Muslims might be expressed. These four items were combined to form a single *intergroup behavioural intentions* score ( $\alpha = .66$ ). A higher score indicates more positive intergroup behaviour intentions.

*Intergroup anxiety.* Four items measured the extent to which participants felt anxious about coming into contact with Muslims. Two items were the same as those used in Study 1. The two additional items were: "I feel relaxed when I come into contact with Muslims," (reversed) and "I feel threatened when I come into contact with Muslims". All four items were combined to form a single *intergroup anxiety* score ( $\alpha = .95$ ). A higher score indicates more intergroup anxiety.

## Results and Discussion

### *Correlation analyses*

Table 3 depicts the means, standard deviations and correlations among the measures. As shown in this table, the contact measures were all associated with the outcome measures in expected directions. Contact quantity, contact quality, the intergroup contact index and extended contact were all positively associated with outgroup attitudes, perceived outgroup variability and intergroup behavioural intentions, and were all negatively associated with intergroup anxiety. Additionally, intergroup

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3 anxiety was negatively associated with outgroup attitudes, perceived outgroup  
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6 variability and intergroup behavioural intentions.  
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10 Table 3 about here  
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### 14 15 *Mediation analyses*

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17 As in Study 1, a series of regression analyses were computed to examine the role that  
18  
19 intergroup anxiety played in mediating between different types of intergroup contact  
20  
21 and the various outcome measures (Baron and Kenny 1986).<sup>5</sup> The regression  
22  
23 analyses confirmed the direct associations between the variables reported in Table 1.  
24  
25 Indirect associations between the predictor and outcome measures (entered with the  
26  
27 mediator) and between the mediator and the outcome measures (entered with the  
28  
29 predictor) are presented in Table 4. As this table indicates, previously significant  
30  
31 relationships between intergroup contact and the outcome measures were reduced to  
32  
33 a non-significant level (perceived outgroup variability, intergroup behavioural  
34  
35 intention) or significantly reduced (outgroup attitudes) when intergroup anxiety was  
36  
37 included as a predictor in the analyses. Sobel tests (Preacher and Leonardelli 2001)  
38  
39 confirmed that these reductions were significant (outgroup attitudes:  $z = 2.46, p = .02$ ;  
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41 perceived outgroup variability:  $z = 2.15, p = .03$ ; intergroup behavioural intentions:  $z$   
42  
43 = 2.17,  $p = .03$ ). In all cases, intergroup anxiety remained a significant predictor  
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45 when intergroup contact was also included in the analysis.  
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53 A similar pattern emerged for the extended contact measure. The previously  
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55 significant associations between extended contact and the outcome measures were  
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57 reduced to a non-significant level when intergroup anxiety was also included as a  
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59 predictor (outgroup attitudes:  $z = 2.70, p = .007$ ; perceived outgroup variability:  $z =$   
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3 2.52,  $p = .01$ ; intergroup behavioural intentions:  $z = 2.54$ ,  $p = .01$ ). In all cases, the  
4  
5 association between intergroup anxiety and the outcome measure in question  
6  
7 remained significant when extended contact was also included as a predictor.  
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12 Table 4 about here  
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17 In sum, the results from Study 2 replicated the findings of Study 1, showing  
18 that anxiety about interacting with Muslims mediates the positive relationship  
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20 between non-Muslim respondents' previous experiences of contact with Muslims and  
21  
22 their perceptions of and attitudes and behavioural intentions towards Muslims.  
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24 Moreover, replicating the direct contact effects obtained in both studies, the results  
25  
26 confirm that intergroup anxiety also mediates the effect of non-Muslim respondents'  
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28 experiences of extended contact with Muslims on the various outcome measures. To  
29  
30 our knowledge, this is the first study to demonstrate that variations in intergroup  
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32 anxiety mediate the association between extended contact and intergroup behavioural  
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34 intentions.  
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#### 40 41 **General Discussion** 42

43 Numerous studies point to a widespread increase in prejudice against Muslims in  
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45 recent years. Relatively less empirical research has considered how this apparent  
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47 increase may be stemmed and relations between non-Muslims and Muslims  
48  
49 improved. The present research addressed prejudice against Muslims from the  
50  
51 perspective of intergroup contact theory (Allport 1954). We conducted two studies  
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53 with non-Muslim respondents to examine the relationship between their previous  
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55 experiences of contact with Muslims and their perceptions of and attitudes and  
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57 behavioural intentions towards Muslims. Results supported our predictions. In both  
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3 studies, a greater amount of high-quality contact with Muslims was associated with  
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5 more positive attitudes towards Muslims, the perception of Muslims as distinct  
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7 individuals rather than a homogeneous entity, greater intentions to behave positively  
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9 towards Muslims, and less anxiety about coming into contact with Muslims. In Study  
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11 2, these findings were additionally replicated for non-Muslims' extended contact  
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13 with Muslims.  
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16  
17 Intergroup anxiety, in turn, was examined as a mediator between contact (both  
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19 direct and extended) and outgroup attitudes, perceived outgroup variability and  
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21 intergroup behavioural intentions. Greater anxiety about coming into contact with  
22  
23 Muslims was associated with a lower amount of quality contact with Muslims and a  
24  
25 lower amount of extended contact with Muslims. Greater intergroup anxiety was also  
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27 associated with more negative attitudes toward Muslims, lower perceived variability  
28  
29 among Muslims, and less positive behavioural intentions toward Muslims. Further  
30  
31 analysis revealed that variations in intergroup anxiety mediated the relationship  
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33 between contact (direct and extended) and outgroup attitudes, perceived outgroup  
34  
35 variability and intergroup behavioural intentions.  
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41 Our results are consistent with previous studies that have demonstrated that  
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43 anxiety mediates the positive effect of contact (quantity and quality) on outgroup  
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45 attitudes (for a review, see Pettigrew and Tropp 2008). In addition, Study 2 adds  
46  
47 further support to the recent extension of this finding in terms of extended contact  
48  
49 (Turner et al. 2008), by establishing that non-Muslims respondents' anxiety about  
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51 interacting with Muslims mediates between their experiences of extended contact  
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53 with Muslims and their attitudes towards Muslims generally.  
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57 The studies have also confirmed that the level of anxiety experienced by non-  
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59 Muslim respondents about interacting with Muslims mediates the link between their  
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3 previous experiences of contact with Muslims (direct and extended) and their  
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5 perceptions of variability among Muslims. The finding that extended contact resulted  
6  
7 in the perception of Muslims as more variable, and that anxiety mediated this effect,  
8  
9 is in line with Paolini et al. (2004), who examined direct and indirect cross-group  
10  
11 friendships between different religious groups in Northern Ireland, finding that  
12  
13 intergroup anxiety mediated the relationship between direct and indirect friendship  
14  
15 and perceived group variability. Finding that contact with Muslims is associated with  
16  
17 more perceived variability among Muslims is especially important in the current  
18  
19 climate, given that the image of Muslims generated and sustained in the media and  
20  
21 much political discourse (Merskin 2004) is of a homogenous community aspiring  
22  
23 towards a single political aim (Afshar, Aitken and Franks 2005). The results from the  
24  
25 present studies suggest that frequent positive contact and extended contact with  
26  
27 Muslims may go some way towards changing this perception of homogeneity held  
28  
29 by many non-Muslims, which in turn may pave the way for more positive and  
30  
31 constructive relations between non-Muslims and Muslims generally.  
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39 Perhaps the most important finding of the studies reported here is the link  
40  
41 between contact and intergroup behavioural intentions. A behavioural intention can  
42  
43 be defined as the motivational factor behind a particular behaviour, which dictates  
44  
45 whether the behaviour will be performed or not (Ajzen 1991). As such, linking  
46  
47 contact to behavioural intentions can be seen as a step closer towards linking contact  
48  
49 to actual behaviour. Recent research has begun to examine this link (Viki et al. 2006;  
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51 Tam et al. 2009; Bousfield and Hutchison 2010; Hutchison et al., in press), and the  
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53 studies reported here add further support to the claim that increased contact with  
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55 outgroup members is associated with an intention to behave positively towards that  
56  
57 outgroup. Finding that intergroup anxiety mediated this relationship offers further  
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3 support for the role of intergroup anxiety as a mediator in the contact literature,  
4  
5 extending this to include intergroup behavioural intentions. Given the established  
6  
7 link between behavioural intentions and actual behaviour, this finding has real  
8  
9 implications for predicting actual behaviour towards Muslims. Future research is  
10  
11 needed to address this point further, examining whether strategies aimed at  
12  
13 promoting different types of contact between non-Muslims and Muslims can affect  
14  
15 actual pro-social behaviour towards Muslims, for instance, helping Muslims  
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17 experiencing discrimination or pledging support for concrete policies or interventions  
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19 designed to accomplish racial, ethnic and religious integration (see also Dixon,  
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21 Durrheim and Tredoux 2005).  
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27         Although our research provides consistent support for our hypotheses, there are  
28  
29 limitations with the current studies that future research should seek to address. Both  
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31 studies were conducted with students from the same university campus in East  
32  
33 London. The university has one of the lowest ratios of non-Muslim to Muslim  
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35 students in the UK and is located in the borough of Tower Hamlets, which has the  
36  
37 highest proportion of Muslims of all local authority districts in the UK at 36 per cent  
38  
39 (2001 Census statistics, cited in Greater London Authority 2006, p. 11). It is likely  
40  
41 that non-Muslim students at this university have more contact with Muslims than  
42  
43 non-Muslims at other UK universities and these different experiences may result in  
44  
45 different attitudes, perceptions, and behavioural intentions than for non-Muslim  
46  
47 students at other universities. The current research should therefore be extended to  
48  
49 include non-Muslim students at more 'typical' UK universities and in addition  
50  
51 further research using non-student samples would be desirable. It is possible that  
52  
53 non-Muslim students in general have different experiences with Muslims than non-  
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55 students and, therefore, different expectations and attitudes. Indeed, the variability of  
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3 the quantity, quality and extended contact of students is likely to be lower for  
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5 students than for non-students, especially considering the students at the current  
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7 university are likely to have a high level of contact with Muslims. Therefore the  
8  
9 external validity of our findings may be limited.  
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12 Another limitation of the current research is that both studies used a cross-  
13  
14 sectional design, making it difficult to infer causality. It is theoretically possible that  
15  
16 those respondents in our research with more favourable attitudes and intentions  
17  
18 towards Muslims were more likely to seek out and engage in positive contact with  
19  
20 Muslims. Indeed, previous research has demonstrated that negative outgroup  
21  
22 attitudes restrict intergroup contact at the same time contact improves attitudes (e.g.,  
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24 Binder et al. 2009). It is important, therefore, for future research to use longitudinal  
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26 and experimental designs in order that more conclusive inferences about causality  
27  
28 may be established.  
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34 Future research should also investigate whether other variables mediate the  
35  
36 relationship between contact and intergroup behavioural intentions. Our research  
37  
38 focused on the mediational role of intergroup anxiety, whereas previous research has  
39  
40 shown that there are many additional mediators of the relationship between contact  
41  
42 and prejudice, such as self-disclosure (Turner et al., 2007), empathy and perspective  
43  
44 taking (Tam et al. 2006), trust (Tam et al. 2009), and knowledge of the outgroup  
45  
46 (Stephan and Renfro 2002). In their meta-analysis of mediators of the contact effect,  
47  
48 Pettigrew and Tropp (2008) suggested a causal sequence whereby initial intergroup  
49  
50 anxiety must first be reduced via intergroup contact before other such additional  
51  
52 variables can effectively contribute to prejudice reduction. Future research should  
53  
54 examine whether this proposed causal sequence exists in the context of relations  
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56 between non-Muslims and Muslims.  
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Despite these limitations, our study is important for establishing that although prejudice against Muslims (or Islamophobia) is often perceived as different from other types of prejudice (e.g., Cole, 2009), it can be reduced in the same ways that other types of prejudice can. Finding that extended contact is associated with the same positive outcomes as direct contact suggests that actual contact between non-Muslims and Muslims may not be necessary to reduce prejudice. Instead, our results suggest that anti-Muslim prejudice could be reduced by emphasising Muslim friendships held by other non-Muslims. Along these lines, Cameron and colleagues (Cameron, Rutland and Brown, 2007) found that schoolchildren's attitudes towards refugees in the UK improved following an intervention which involved reading stories about cross-group friendships. Likewise, Turner and colleagues (Turner, Crisp, and Lambert, 2007) demonstrated that simply imagining contact with members of an outgroup can improve intergroup attitudes and reduce prejudice. Together, these findings should be of interest to those involved in the design of strategies and interventions aimed at improving relations between non-Muslims and Muslims.

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## Footnotes

<sup>1</sup> Although the present research is framed in terms of prejudice against Muslims, individuals and groups who are not Muslim but who are wrongly identified as such (e.g., through perceptions of ethnicity, national heritage or language) are also increasingly becoming the recipients of prejudiced attitudes and behaviour.

<sup>2</sup> The term 'Arab' is distinct from the religious identity of 'Muslim'. However, attacks on Arabs often reflect the assumption that they are Muslim (see Footnote 1). This is despite considerable religious diversity in many Arabic countries, and the far greater numbers of Muslims from non-Arabic ethnic and geographical areas.

<sup>3</sup> We did not collect data on the participants' race, ethnicity or nationality in either study because previous research suggests that these variables have no influence on attitudes towards Muslims (e.g., Park et al. 2007).

<sup>4</sup> Two of the data collectors were Black and two of the data collectors were White. Race of data collectors had no impact on any of the analyses.

<sup>5</sup> We report results of mediation analysis for the multiplicative index of intergroup contact, although intergroup anxiety also mediated the associations between contact quantity and quality and the various outcome measures.

<sup>6</sup> Two of the data collectors were White and one of the data collectors was Black. As in Study 1, race of data collectors had no impact on any of the analyses.

<sup>7</sup> As in Study 1, intergroup anxiety also mediated the associations between contact quantity and quality on the various outcome measures.

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Table 1

Means, standard deviations, and correlations among the variables (Study 1)

Variable	Variable								
	M	SD	1	2	3	4	5	6	7
1. Contact quantity	3.36	4.55	—	.13	.97***	.36**	.28*	.33**	-.31*
2. Contact quality	3.76	0.99		—	.27*	.33**	.40**	.49***	-.56***
3. Intergroup contact	13.19	17.43			—	.42***	.32**	.40**	-.36**
4. Outgroup attitudes	3.33	0.79				—	.39**	.57***	-.49***
5. Perceived outgroup variability	2.87	0.84					—	.55***	-.49***
6. Intergroup behavioural intentions	3.09	0.87						—	-.71***
7. Intergroup anxiety	2.28	1.02							—

\* p < .05, \*\* p < .01, \*\*\* p < .001

Note. All measures used 5-point scales except contact quantity, which required respondents to write a number to indicate how much contact and extended contact they had with Muslims.

Table 2*Results of mediation analyses (Study 1)*

<i>Dependent variable</i>	Intergroup contact (entered with intergroup anxiety)	Intergroup anxiety (entered with intergroup contact)
Outgroup attitudes	.28*	-.39**
Perceived outgroup variability	.16	-.43**
Intergroup behavioural intentions	.17	-.65***

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

*Note.* Figures are standardized beta coefficients.

Table 3

Means, standard deviations, and correlations among the variables (Study 3)

Variable	Variable									
	M	SD	1	2	3	4	5	6	7	8
1. Contact quantity	4.67	6.47	—	.34**	.97***	.54***	.37**	.20†	.30**	-.31**
2. Contact quality	3.65	0.99		—	.43***	.44***	.59***	.54***	.53***	-.53***
3. Intergroup contact	19.20	28.54			—	.55***	.42***	.25*	.35**	-.31**
4. Extended contact	3.48	4.24				—	.37**	.30**	.41**	-.38**
5. Outgroup attitudes	3.46	0.83					—	.43***	.71***	-.63***
6. Perceived outgroup variability	4.01	0.85						—	.51***	-.54***
7. Intergroup behavioural intentions	3.26	0.77							—	.57***
8. Intergroup anxiety	3.94	0.91								—

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , †  $p = .06$

Note. All measures used 5-point scales except contact quantity and extended contact, which required respondents to write a number to indicate how much contact and extended contact they had with Muslims.

Table 4

*Results of mediation analyses (Study 2)*

	Intergroup contact		Extended contact	
	Intergroup contact (entered with intergroup anxiety)	Intergroup anxiety (entered with intergroup contact)	Extended contact (entered with intergroup anxiety)	Intergroup anxiety (entered with extended contact)
<i>Dependent variable</i>				
Outgroup attitudes	.25*	-.56**	.15	-.57**
Perceived outgroup variability	.10	-.51**	.10	-.50**
Intergroup behavioural intentions	.19	-.52**	.22 <sup>†</sup>	-.49**

\*  $p < .05$ , \*\*  $p < .001$ , <sup>†</sup>  $p = .054$ .*Note.* Figures are standardized beta coefficients.

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2  
3 PAUL HUTCHISON is a Senior Lecturer in the School of Psychology at London  
4  
5 Metropolitan University.

6  
7  
8 ADDRESS: School of Psychology, London Metropolitan University, Calcutta House, Old  
9  
10 Castle Street, London, E1 7NY, UK.

11  
12 Email: p.hutchison@londonmet.ac.uk  
13  
14

15  
16  
17 HARRIET ROSENTHAL is a Lecturer in the Psychology Department at the University of  
18  
19 Durham.

20  
21  
22 ADDRESS: Department of Psychology, Durham University, Science Site, South Road,  
23  
24 Durham, DH1 3LE, UK.

25  
26 Email: h.e.s.rosenthal@durham.ac.uk  
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