

**“Nudging” intergroup contact: Normative social influences on  
intergroup contact engagement**

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### Abstract

Much research has shown that intergroup contact is associated with a reduction in prejudice. Far less attention has been paid to the conditions that promote intergroup contact. This research explored the role of normative social influence in predicting contact engagement (total N = 1538). Cross-sectional Study 1 found that individual's perception of descriptive levels of intergroup contact amongst the ingroup predicted their own contact engagement whilst controlling for outgroup attitudes. Study 2 and Study 3 demonstrated that an experimental manipulation of descriptive norms promoted outgroup approach intentions, and actual approach behaviour. Participants were more open to future intergroup contact when they learnt of the high prevalence of this behaviour amongst the ingroup. Study 4 then considered how *normative* techniques could be used when intergroup contact is not commonplace. Together, the findings provide a new understanding of the antecedents of intergroup contact and new techniques for encouraging greater inclusion and integration.

Keywords: INTERGROUP CONTACT, SOCIAL NORMS, SOCIAL INFLUENCE, PREJUDICE

**“Nudging” intergroup contact: Normative social influences on  
intergroup contact engagement**

Intergroup Contact Theory states that bringing groups together under favourable conditions can reduce prejudice and improve intergroup relations (Allport, 1954; Brown & Hewstone, 2005; Pettigrew & Tropp, 2011). More than 60 years of supportive research has led to the widely shared recognition that contact “works” in reducing prejudice (Pettigrew & Tropp, 2006). An important question that remains is how to encourage greater interest in, and positive inclination towards intergroup contact. Previous research has focused on the consequences of intergroup contact at the individual level. Far less attention has been paid to understanding how intergroup contact comes about in the first place, and the group processes that are involved (Paolini et al., 2018). This present research adopts a normative approach to intergroup contact by exploring how individuals’ willingness to engage in intergroup contact is impacted by the contact they perceive is occurring around them, and how normative manipulations can be used to promote contact-seeking behaviour.

There is a rich tradition in psychology that suggests that social norms powerfully influence behaviour (Asch, 1951; Sherif, 1936). Norms that characterise the perception of what most people do are known as *descriptive norms*. Individuals generally prefer to behave in a certain way when they know that other people behave similarly. The hallmark of a social norms intervention is the dissemination of a message documenting the high incidence of the desirable behaviour (Miller & Prentice, 2016). A classic example is provided by Goldstein et al., (2008) who sought to encourage hotel guests to reuse their towels during their stay. A standard informational request was placed in half of the rooms in the hotel stating, “*Help save the environment by reusing towels during your stay*”. The other half received an alternative message that additionally evoked a social norm, stating “*Join your fellow guests in helping to save the environment. Almost 75% of guests reuse their towels during their stay*”.

Communicating that the majority of fellow guests had reused their towels in this way successfully reduced the number of towels washed by 26%. Such norms-based interventions have become a prominent part of behavioural change toolkits, or “nudges”, which aim to provide subtle, simple, low-cost and effective ways to alter behaviour in a predictable fashion. Social norms interventions have been successfully applied to promote a wide array of desirable behaviours including healthy eating (e.g. Robinson et al., 2014), tax compliance (e.g. Hallsworth et al., 2014), charitable giving (e.g. Agerström et al., 2016), voter turnout (e.g. Gerber & Rogers, 2007), savings behaviour (e.g. Yoon et al., 2016) and pro-environmental behaviours including energy conservation (e.g. Schultz et al., 2007), water conservation (e.g. Lede et al., 2019) and pro-environmental driver behaviour (e.g. Player et al., 2018).

Social norms interventions are embedded in processes related to social identification and social influence. Social identity theory seeks to explain how individuals' attitudes, emotions, and behaviours are shaped by the groups to which we belong. According to the social identity approach, social influence operates on the basis of salient group identities (Abrams & Hogg, 1990; Turner et al., 1987; 1989). When we self-categorize as members of a particular group, we answer the question, ‘Who am I?’ in terms of the characteristics that we share with other group members. We also answer the question, ‘What should I do?’ with reference to the ingroup stereotype. The process of depersonalization assimilates the self to the group prototype and thus, an individual's behaviour becomes group-based and guided by the norms of the social category or group. Moreover, because the norms are internalized as part of the individual's self-concept and are linked to his or her membership to that group, the norm may exert influence over behaviour even in the absence of other group members (Abrams & Hogg, 1990).

### **Social Norms, Intergroup Relations, and Intergroup Contact**

Research has previously recognised the importance of social norms in the context of intergroup relations, particularly norms surrounding the expression of prejudice. Studies have shown that the amount of prejudice that people express towards different groups is highly correlated with the social approval of that expression (Crandall et al., 2001; Wittenbrink & Henly, 1996) and affected by manipulations of social approval (Blanchard et al., 1991; 1994; Monteith et al., 1996). Crandall and colleagues (2002) for instance, indexed the acceptability (normality) of negative feelings towards over 100 outgroups and found that normative disapproval of outgroups predicted the perceived acceptability of discrimination against them. Blanchard et al. (1994) similarly found that participants expressed significantly stronger anti-racist attitudes after being exposed to a confederate posing as a fellow student who condemned racism compared to participants exposed to a confederate who condoned racism. Theories such as that of aversive racism also recognise that the steady decline of overt expressions of racial prejudice over recent decades is likely due to adherence to social norms proscribing open expressions of prejudice and discrimination (Dovidio & Gaertner, 2004; Gaertner & Dovidio, 1986).

However, despite calls for intergroup contact to be considered from a normative perspective (Pettigrew, 1991; 1998; 2008) research on the contact hypothesis and research on social norms have usually remained disconnected. In the *extended contact hypothesis*, Wright and colleagues (1997) introduced for the first time the influence that the contact of other ingroup members has on one's own outgroup attitudes. It is argued that knowing that other ingroup members have outgroup members as friends can reduce prejudice, even in the absence of direct intergroup contact. This hypothesis has now received considerable support in a variety of different intergroup settings and methodologies (for recent meta-analysis see Zhou et al., 2018). When Wright and colleagues (1997) first introduced the extended contact

hypothesis it was argued that this type of indirect contact could generate changes in perceived norms about the acceptability of positive intergroup relationships and that these changes in norms would be a key mechanism by which extended contact has its impact in reducing prejudice. Evidence supports this idea demonstrating that perceived ingroup norms serve a significant mediator of extended contact effects (for review see Vezzali et al, 2014; White et al., 2020).

Whereas research on extended contact has typically focused on individuals who personally know other ingroup members who have outgroup friends, a recent extension of this approach suggests learning that ingroup members *in general* have outgroup friends can encourage more positive intergroup attitudes (Gómez, et al., 2018). Gomez and colleagues operationalise depersonalized extended contact as information about the number of outgroup friends that most ingroup members have. Five studies showed that learning about high levels of depersonalized extended contact amongst unknown ingroup members (i.e., more than two immigrant friends vs. one or two immigrant friends vs. no immigrant friends) promoted more positive intergroup orientations. In contrast, outgroup norms surrounding cross-group friendships did not influence intergroup attitudes, with findings suggesting that participants attribute outgroup members' interest in contact to utilitarian motives (e.g., to access resources and jobs) rather than genuine desire for integration.

### **Social Norms as an Antecedent of Intergroup Contact**

Research surrounding the extended contact hypothesis paves the way for a normative perspective on the study of intergroup contact. It is our contention that the perception of favourable norms surrounding intergroup interactions is not just a potential mechanism underlying extended contact effects, but is suggestive of the wider importance of normative social influence in relation to contact. In the extended contact approach, individual infer

ingroup and outgroup norms about intergroup contact on the basis of exemplars who maintain outgroup friendships. In other words, extended contact promotes positive outgroup attitudes *because* it changes perceptions of what is normative among the ingroup (and outgroup) in general. Clearly, extended contact is just one of many factors that can lead to the development of social norms which represent a much broader construct of central importance in social psychology. The importance the normative social influence in its own right is currently underappreciated in the context of intergroup contact. The current research sought to *directly* manipulate ingroup norms surrounding intergroup contact by providing feedback on the number of other ingroup members who engage in this behaviour (i.e., a descriptive norm), and to explore how such techniques could be used to promote intergroup contact engagement.

Widespread evidence demonstrates that despite ever-growing levels of social diversity, opportunities for intergroup contact are not always taken up, and micro-level segregation persists even in mixed social environments (Dixon & Durrheim, 2003; Durrheim & Dixon, 2013; McKeown & Dixon, 2017). It is therefore imperative to understand the factors that motivate contact engagement, and to design interventions strategies to ensure opportunities for, and benefits of, intergroup contact are fully enjoyed. Initial empirical explorations of the antecedents of intergroup contact have identified several factors that may promote greater contact engagement. Longitudinal studies have shown a bidirectional association between intergroup contact and outgroup attitudes in which intergroup contact predicts reduced prejudice over time, and more positive outgroup attitudes predict greater intergroup contact (e.g., Binder et al., 2009), although evidence of the latter path is mixed (Brown et al., 2007). Paolini and colleagues (2016) found that higher self-expansion motivation predicted more, and higher quality interactions across group boundaries. Meanwhile, Meleady and colleagues (2020) recently demonstrated that intercultural

competence was dynamically associated with intergroup contact quality with positive contact predicting improvements in intercultural competence over time, and higher intercultural competence predicting a reduction in future negative contact.

It seems likely that willingness to engage in intergroup contact is also influenced by normative factors. Several recent theoretical explorations of the antecedents of intergroup contact suggest that if individuals observe other ingroup members engaging in positive and frequent interactions with outgroup members, they will seek to behave in a way consistent with these observations (see Kauff et al., 2020; Paolini et al. 2018; Ron et al., 2017; Turner & Cameron, 2016). Ron and colleagues (2017), for instance, suggest that in conflict settings separation norms may hinder individual's willingness and opportunities to engage in encounters with the outgroup, while more tolerant norms may predict increased intergroup contact when conflict is less violent. Meanwhile Turner and Cameron (2016) conceptualise social norms as a key predictor of "confidence in contact" which describes a state of readiness for contact whereby individuals have the necessary confidence, skills and abilities they need to successfully navigate intergroup encounters.

Empirical evidence of the association between norms and actual contact engagement is still relatively limited, especially with adult samples. In one supportive study Tropp et al., (2014) found that perceptions of inclusive peer norms predicted childrens' (aged 9-13) interest in cross-group friendship (see also Tropp et al., 2016). McKeown and Taylor (2018) also found that positive perceived peer norms towards intergroup contact predicted more frequent and better quality outgroup contact amongst youths (aged 14-16) in Northern Ireland. Most recently, Murrar and colleagues (2020) tested an intervention targeting perceptions of social norms by communicating that their peers engage in inclusive behaviours in six, randomised controlled trials at a university in the United States. Results showed non-marginalised students exposed to the interventions reported more positive attitudes towards



outgroup and greater appreciation of diversity, while marginalised students reported an increased sense of belonging and reported being treated by inclusively by their peers.

Importantly, the literature on social norms also provides insights into how normative techniques can be used even when the desired behaviour is not commonplace. Whilst descriptive norms have traditionally been conceptualised as the current prevalence of a behaviour, recent research suggests that this is not the only form of descriptive normative information that may be valuable. The environments in which we are embedded are changing and dynamic and communicating information about behavioural trends may alert us to new strategies that could prove beneficial. Instead of highlighting the current state of a behaviour (i.e.  $X\%$  of a reference group show the ‘static norm’), dynamic norms interventions communicate information about how a social norm is changing over time in the desired direction (Sparkman & Walton, 2017; 2019, also referred to trending norms, Mortensen et al., 2018). A series of experiments and field studies have shown that communicating that the number of people engaging in a behaviour is increasing – even if it is only among a minority of people – successfully increased participants’ interest in reducing their meat consumption, made participants more likely to order a meatless lunch, and more likely to conserve water while doing laundry (Sparkman & Walton, 2017). The current research sought to extend the evidence base surrounding the impact of social norms on contact engagement, and to explore how normative manipulations can also be used when intergroup contact is not (yet) normative.

### **The Present Research**

Normative messages conveying information about the behaviour of relevant others have been shown to provide subtle, simple, low-cost and effective ways to encourage behaviour change across a range of sectors including health, finance and environmental

decision-making. This research represents the application of this approach to the domain of intergroup relations. The main argument developed in this project is that individuals' interest and engagement in intergroup contact is influenced by the contact they perceive to be occurring around them. Four studies tested this hypothesis. Study 1 was a cross-sectional investigation of the association between perceived norms and British adults' contact with immigrants. Study 2 and Study 3 explored the impact of an experimental manipulation communicating the high proportion of British people who regularly interact with immigrants on contact approach tendencies (Study 2) and actual approach behaviour (Study 3). Study 4 then went on to consider how normative manipulations could be used when existing intergroup contact levels are low by using a 'dynamic' norms manipulation to communicate information about how a social norm is changing in the desired direction.

### **Study 1**

Study 1 aimed to provide initial cross-sectional evidence of the association between perceived norms and contact engagement. Participants were White British adults, and the target outgroup was immigrants to Britain. Individuals' perceptions of descriptive levels of positive cross-group contact amongst other British people were measured. It was expected that individuals would be more likely to engage in contact with immigrants when they perceive more others to be doing the same. Importantly, demographic factors (i.e. age and gender) and geographic factors (i.e. perceived levels of neighbourhood diversity) that may predict contact engagement were also measured and controlled for, as well as outgroup attitudes. It was expected that normative levels of contact would predict contact engagement over and above individuals' personal attitude towards the outgroup.

A second aim of Study 1 was to explore the comparative influence of outgroup norms. It was expected that the perceived behaviour of other ingroup members would shape

individuals' own contact engagement as we often look to fellow ingroup members as guides for our intergroup attitudes and behaviour (Abrams & Hogg, 1990; Jetten et al., 1997). Perceived outgroup norms may further contribute to contact engagement, with some research suggesting our own interest in intergroup contact is predicted by the extent to which we believe outgroup members are willing to engage with members of our group (Shelton & Richeson, 2005; Stathi et al., 2020; Tropp & Bianchi, 2006). Other findings suggest, however, that outgroup norms are most likely to influence decision-making and behaviour when the outgroup has coercive power over the ingroup (Louis et al., 2005) and that outgroup norms do not modify ingroup member's attitudes when compliance is not associated with punishments or rewards (Mackie et al., 1992; Terry & Hogg, 1996). Accordingly, in this context where the aim is to predict advantaged majority group members' contact with disadvantaged minority group members, ingroup norms were expected to be more important in predicting contact engagement than outgroup norms.

### **Participants**

A power analysis was conducted G\*Power 3.1 (Faul et al., 2007) using the linear multiple regression  $R^2$  increase option to specify a model with three control variables and two predictor variables. We wished to have .90 power for obtaining statistical significance with alpha = .05 if the  $R^2$  change is large enough to add .03 beyond an anticipated  $R^2$  of .30 produced by the first four control variables. The minimum recommended sample size was 299. The sample size obtained exceeded the estimated required N to allow for unusable data. Data was collected from a total of 400 participants from an online participant panel, Prolific. Only White British participants were eligible to participate. Five participants indicated they did not want their data to be used. No further exclusions were made. The final sample included 151 males and 244 females aged between 18 and 75 ( $M = 40.07$ ,  $SD = 12.31$ ).

## Procedure

Collection of all responses were obtained via online survey software. All items were measured on appropriately anchored 7-point scales. Perceived ingroup norms were measured with three items designed to assess perceptions of descriptive levels of intergroup contact amongst other British people: “In general, I think British people like to spend time with immigrants”, “In general, I think British people maintain close social relations with immigrants”, and “In general, I think British people do not like to have much contact with immigrants”<sup>\*1</sup>,  $\alpha = .88$ . Perceived outgroup norms were measured with the same three items this time assessing immigrants’ contact with British people ( $\alpha = .84$ ).<sup>2</sup>

Contact engagement was measured with two items adapted from Voci and Hewstone (2003). Participants were asked, “How many immigrants do you know” and “How frequently do you have contact with immigrants” (Spearman-Brown coefficient = .85). Outgroup attitudes were measured with the General Evaluation Scale (Wright et al., 1997). Participants indicated their feelings towards immigrants, in general, on six bipolar scales (1-7; *warm-cold*, *negative-positive*, *friendly-hostile*, *suspicious-trusting*, *respect-contempt*, *admiration-disgust*). Items were coded so that higher scores corresponded to more positive outgroup attitudes ( $\alpha = .96$ ). Perceived levels of neighbourhood diversity were measured with a single self-report item, “How many immigrants are living in your neighbourhood” (1 = *none*, 7 = *many*).

## Results and Discussion

Two outliers more than 3 standard deviations from the mean were observed on outgroup attitudes. These scores were winsorized to the next acceptable value<sup>3</sup>. The correlations amongst all variables are presented in Table 1 along with means and standard deviations. Contact engagement was positively associated with levels of perceived neighbourhood diversity, outgroup attitudes, ingroup norms and outgroup norms. There was no significant association between age and gender and contact engagement.

[insert Table 1 here]

A hierarchical regression was then conducted to examine the extent to which perceived ingroup norms and outgroup norms predicted contact engagement after controlling for levels of perceived neighbourhood diversity and outgroup attitudes. As age and gender did not show a significant bivariate correlation with intergroup contact engagement, they were not included in the regression analysis. Perceived neighbourhood diversity and outgroup attitudes were included as control variables in Step 1, and perceptions of ingroup and outgroup norms surrounding contact were entered in Step 2. The final regression equation was statistically significant,  $F(4, 390) = 55.00, p < .001$ . The control variables explained a significant amount of variance in contact engagement in Step 1 (see Table 2). Both outgroup attitudes ( $\beta = .27, p = <.001$ ) and perceived levels of neighborhood diversity ( $\beta = .49, p = <.001$ ) were associated with greater contact engagement. Importantly, the inclusion of the normative variables in Step 2 provided a significant amount of additional explained variance. As expected, perceptions of positive ingroup norms surrounding intergroup contact were positively associated with contact engagement ( $\beta = .11, p = 0.19$ ). There was no significant independent association between outgroup norms and contact engagement ( $\beta = .003, p = .948$ ).

[insert Table 2]

The results of Study 1 provide initial evidence of the association between social norms and intergroup contact engagement. Individuals are more likely to personally engage in intergroup contact when they perceive high levels of intergroup contact engagement amongst fellow ingroup members. Both perceived neighborhood diversity and outgroup

attitudes were positively related with contact engagement, but perceived ingroup norms explained additional variance in this outcome. There was no significant association, however, between perceived outgroup norms and contact engagement. This finding is consistent with the idea that individuals are most strongly influenced by the norms of the groups with which they identify (Turner, 1991; Terry & Hogg, 1996), and suggests that normative interventions aimed at encouraging intergroup contact engagement should focus on the prevalence of intergroup contact amongst other ingroup members.

## Study 2

Study 2 tested the impact of a social norms manipulation on outgroup approach tendencies. The experimental manipulation communicated information about the high number of other British people who regularly engage in contact with immigrants ('high contact norm'). The impact of this manipulation on outgroup approach tendencies was assessed in comparison to a message suggesting that normative levels of contact were low ('low contact norm'), and a no-treatment control condition. Prior research demonstrates that communicating that only a numerical minority of people perform a desirable behaviour does not encourage conformity and can even backfire and establish a norm of not engaging in the behaviour (Cialdini et al, 2006). Accordingly, it was expected that intentions to approach the outgroup would be higher in the high contact norm condition compared to both the low contact norm condition and the control. A backfire effect may also be expected whereby outgroup approach tendencies are decreased in the low contact norm condition compared to baselines.

## Participants

A power analysis in G\*Power 3.1 (Faul et al., 2007) for a between-subjects, one-way ANOVA with three conditions and a desired power of .90 showed that for a small-to medium effect ( $f = 0.20$ ) a minimal sample size of  $N = 321$  would be needed. The full sample consisted of 390 participants recruited via Prolific. Only White British participants were eligible to participate. The sample included 113 males and 277 females, aged between 18 and 79 ( $M = 35.89$ ,  $SD = 13.07$ ). No exclusions were made. Participants were randomly assigned to either a high contact norm ( $n = 129$ ), low contact norm ( $n = 131$ ), or control condition ( $n = 130$ ).

### **Procedure**

Participants were presented with a fictitious newspaper article, entitled “*Do Brits have immigrant friends?*” (title adapted from Gomez et al., 2018). The newspaper article described a research project that had been conducted with a representative sample of British adults to determine the proportion of British people who maintained friendships with immigrants. To enhance credibility of the article the survey was said to have been conducted by a well-known public opinion polling company in collaboration with several British universities. Participants were randomly assigned to read one of two versions of the newspaper article. Ostensibly according to the results of the study, either three in four (75%, high contact norm) or one in four (25%, low contact norm) Brits reported regularly interacting with people born outside of the UK (for full manipulation see Supplementary Materials). Participants in the no-treatment control condition went straight to the dependent measures.

As a manipulation check, participants indicated their agreement with two items, “In general, I think British people like to spend time with immigrants”, and “In general, I think British people maintain friendships with immigrants” (1 = *Strongly disagree* to 7 = *Strongly agree*, Spearman-Brown coefficient = .91). Approach behavioural tendencies towards the

outgroup were measured with three items adapted from Mackie et al., (2000). When thinking about immigrants, participants were asked to indicate how likely they were to want to “talk to them”, “find out more about them” and “spend time with them” (1 = *Not at all* to 7 = *Very much*,  $\alpha = .96$ ). To conclude the experiment participants provided demographic information and were thanked and debriefed.

## Results and Discussion

The manipulation check indicated that the conditions were significantly different in terms of perceived norms,  $F(2, 387) = 45.53, p < .001$ , partial  $\eta^2 = .19$ . Post hoc tests with a Bonferroni adjustment indicated that perceived normative levels of contact were significantly higher in the high contact norm condition ( $M = 5.04, SD = 1.17$ ) compared to both the control condition ( $M = 3.89, SD = 1.45, p < .001$ ), and the low contact norm condition ( $M = 3.62, SD = 1.19, p < .001$ ). There was no significant difference between the low contact norm condition and the control condition,  $p = .262$ .

A second ANOVA tested the difference in outgroup approach tendencies between conditions. A significant omnibus effect was observed,  $F(2, 387) = 4.40, p = .013$ , partial  $\eta^2 = .02$ . Again, post hoc tests with a Bonferroni adjustment revealed that approach behavioural tendencies were significantly higher in the high contact norm condition ( $M = 5.13, SD = 1.29$ ) compared to both the control condition ( $M = 4.70, SD = 1.54, p < .001$ ), and the low contact norm condition ( $M = 4.68, SD = 1.35, p < .001$ ). There was no difference between the low contact norm condition and the control condition ( $p = 1.00$ ).

The results of Study 2 demonstrate that exposure to a message documenting the high incidence of intergroup contact amongst other ingroup members can successfully increase outgroup approach tendencies. Participants who learned that a large proportion of British people regularly interact and socialize with immigrants were more inclined to approach the



outgroup themselves compared to participants who learned that only a small proportion of British people regularly engage in intergroup contact, and a no-treatment control. There was no evidence of a backfire effect whereby those in the low contact norm condition reported lower approach tendencies compared than those in the control. This is likely because perceptions of normative levels of contact were already low at baseline and did not differ significantly from the low contact norm condition. Importantly, conveying that many people *do* engage in contact can increase outgroup approach tendencies accordingly.

### Study 3

The results of Study 2 rely on a measure of intended behaviour. It is possible that participants may report a positive orientation towards intergroup contact, but not necessarily engage in contact when the opportunity arises. Study 3 therefore aimed to confirm the effects of social norms manipulations on a *behavioural* measure of outgroup approach/avoidance. Specifically, participants' intergroup anxiety, contact avoidance intentions, and approach/avoidance behaviour in the context of an upcoming intergroup interaction were measured. Having established the effect of the high contact norm condition in comparison to low contact norm condition in Study 2, Study 3 focused only on the comparison between the high contact norm condition and the control condition. Success is indicated if the experimental manipulation not only improves self-reported outcomes, but also contact approach at the behavioural level.

### Participants

The sample consisted of 260 participants recruited via Prolific. Sample size aims were held consistent with Study 2 ( $n = 130$  per cell). The data of two non-British participants was excluded. No further exclusions were made. The final sample included 68 males and 190

females, aged between 18 and 79 ( $M = 34.58$ ,  $SD = 12.34$ ). Participants were randomly assigned to either the high contact norm experimental condition ( $n = 129$ ), or the no-treatment control condition ( $n = 129$ ).

## Procedure

As a cover story for the experiment, participants were told that the study was investigating interpersonal interactions and that the data would be used to inform scientific research on human communication. To begin, participants in the experimental condition read the same newspaper article manipulation as in Study 2. All participants were then told that they would shortly be transferred to a virtual chatroom to complete a conversation task with another participant. All participants were ostensibly assigned to an immigrant partner. Participants received basic demographic information about their alleged partner (“*Andrius / Regina: a 35-year-old male/female originally from Lithuania who likes reading and wildlife photograph*”). Partners were matched to the participant’s gender.

Participants were asked to complete some questions prior to the alleged interaction adapted from MacInnis and Hodson (2012). Stephan and Stephan’s (1985) intergroup anxiety scale was modified to refer to the upcoming interaction. Participants indicated the extent to which they anticipated feeling “awkward”, “self-conscious”, “happy”\*, “confident”\* and “relaxed”\* during the interaction (1 = *Not at all* to 7 = *Very much*,  $\alpha = .88$ ). Participants then rated their a) desire to avoid the interaction and b) preference to not interact with their partner on the same scale (Spearman-Brown coefficient = .91). Finally, participants were given a choice of whether to continue with the planned interaction (i.e. approach) or select a new partner (i.e. avoid). This method ensured that avoidance behaviour purely reflected avoidance of their specific contact partner, not other contact partners, or the experiment generally

(MacInnis & Hodson, 2012). To conclude the experiment participants were debriefed where they learnt that there would be no upcoming interaction.

### Results and Discussion

Independent samples *t*-tests were conducted to examine differences in self-reported intergroup anxiety and contact avoidance intentions between the experimental and control condition. Results showed that intergroup anxiety in anticipation of the interaction was significantly lower in the high contact norm condition ( $M = 3.52, SD = 1.36$ ) compared to the control ( $M = 3.85, SD = 1.25$ ),  $t(256) = 2.04, p = .042, d = 0.25$ . Contact avoidance intentions were also significantly lower in the high contact norm condition ( $M = 2.99, SD = 1.70$ ) compared to the control ( $M = 3.47, SD = 1.60$ ),  $t(256) = 2.35, p = .020, d = 0.29$ .

A chi-squared test was then conducted to test for differences in contact approach/avoidance behaviour between conditions. The test showed that the proportion of participants choosing to continue with the planned interaction with the immigrant partner was significantly higher in the experimental condition (72.1%) than control condition (60.5%),  $\chi^2(1, N = 258) = 3.90, p = .048, \text{Cramer's } V = .12^4$ .

The results of Study 3 provide important evidence that social norms manipulations can improve contact approach on a behavioural level. The key dependent variable was whether participant choose to continue with a planned interaction with an immigrant partner (i.e. approach) or select a new partner (i.e. avoid). Results demonstrated that participants who were exposed to information about the high incidence of contact engagement amongst other ingroup members not only reported improved contact expectations and intentions, but were also more likely to engage in an intergroup encounter when presented with the opportunity. The results attest to the potential for normative manipulations to have a meaningful impact on individuals' contact behaviour, beyond self-reports.

### Study 4

In the two experimental studies reported so far the normative manipulation has consisted of a message conveying that a high proportion of ingroup members engage in frequent and positive contact with outgroup members. However, it is not always true that normative levels of intergroup contact will be high. Study 4 went on to consider how normative manipulations could be used to encourage contact engagement even when descriptive levels of contact are low. To do so, a recently-introduced intervention procedure known as *dynamic norms* was employed (Sparkman & Walton, 2017; 2019, also referred to trending norms, Mortensen et al., 2018). Instead of highlighting the current state of a behaviour (i.e. X% of a reference group show the ‘static norm’), a dynamic norms intervention communicates information about how a social norm is changing over time in the desired direction. Effects are mediated by a process of ‘*preconformity*’ whereby people anticipate ongoing change and a future world in which that behaviour is normative and then conform to the emerging norm as if it were current reality (Sparkman & Walton, 2017). Study 4 applied this approach to increase intergroup contact engagement. It was expected that communicating that levels of intergroup contact were low but rising would increase interest in engaging in future intergroup contact above communicating a static low contact norm, and that this effect would be mediated by perceptions that intergroup contact will continue to increase in prevalence in the future (i.e., ‘preconformity’).

### Participants

501 White British participants were recruited via Prolific. Sample size was increased from Study 2 and Study 3 because a smaller difference between variants of a low contact norms condition (static vs. dynamic) was expected compared to differences between low contact norm and high contact norm conditions. Six participants indicated they did not want

their data to be used. No further exclusions were made. The final sample consisted of 354 females and 140 males (1 participant did not indicate their gender) aged between 18 and 76 ( $M = 35.85$ ,  $SD = 11.94$ ). Participants were randomly assigned to a control ( $n = 168$ ), static norms ( $n = 164$ ), or dynamic norms condition ( $n = 163$ ). A post-hoc power analysis indicated that with an  $\alpha$  of .05, three conditions and the effect size detected ( $f^2 = .18$ ), the power was .86 (Faul, Erdfelder, Buchner, & Lang, 2009).

### **Procedure**

In Study 4 the target outgroup was ethnic minorities. To create the norms statement, a pre-test survey of White British adults was conducted via Prolific ( $N = 100$ ). Participants were asked whether they regularly interact and socialise with ethnic minorities. Approximately 40% of participants reported making some effort to interact with ethnic minorities. The norms statement in each condition used this figure. The manipulation text was based on that of Sparkman and Walton (2017). In the static norms condition, participants read:

Recent research has shown that 40% of White British people make an effort to regularly interact with people from ethnic minority backgrounds. This means that 4 in 10 people regularly socialise with people from ethnic minorities.

In the dynamic norms condition, they read:

More and more people are making an effort to interact with people from ethnic minority backgrounds. Recent research has shown that 40% of White British people have started to make an effort to regularly interact with

people from ethnic minorities. This means that, in recent years, 4 in 10 people have changed their behaviour and begun to regularly socialise with people from ethnic minorities.

After reading the normative information participants in each condition were asked “why do you think this is?” and were given space to respond. This question was designed to ensure that participants had read and reflected on the norms statement. Participants in the control condition went straight on to complete the dependent measures. The dependent variable was interest in future contact measured with two items adapted from Sparkman and Walton (2017), “How interested are you in interacting with people from ethnic minority backgrounds” and “If you were free to choose, would you like to have more contact with people from ethnic minority backgrounds (1 = *not at all*, 7 = *very much*, Spearman-Brown coefficient = .84). Participants also responded to a single item assessing the potential mediator, pre conformity, “In the foreseeable future, to what extent do you think that many other people will make an effort to interact with people from ethnic minorities” (1 = *not at all*, 7 = *very much*).

## **Results and Discussion**

A one-way ANOVA tested the difference in interest in future intergroup contact between conditions. A significant omnibus effect was observed,  $F(2, 492) = 5.46, p = .005$ , partial  $\eta^2 = .02$ . Post hoc tests with a Bonferroni adjustment revealed that participants expressed more interest in intergroup contact in the dynamic norms condition ( $M = 5.75, SD = 1.22$ ) than in the control condition ( $M = 5.34, SD = 1.18$ ),  $p = .007$ , and the static norms

condition ( $M = 5.41$ ,  $SD = 1.23$ ),  $p = .030$ . The static norms condition did not differ significantly from the control condition  $p = 1.00$ .

There was also a significant effect of condition on pre conformity scores,  $F(2, 492) = 9.69$ ,  $p < .001$ , partial  $\eta^2 = .04$ . Participants in the dynamic norms conditions had a greater level of anticipation that many people would make an effort to engage in intergroup contact in the future ( $M = 5.15$ ,  $SD = 1.35$ ) compared with those in both the control condition ( $M = 4.52$ ,  $SD = 1.21$ ),  $p < .001$  and the static norms condition ( $M = 4.77$ ,  $SD = 1.21$ ),  $p = .027$ . There was no significant difference in pre conformity between the static norms and the control condition,  $p = .245$ .

A mediation analysis was then conducted to test whether the impact of the dynamic norms condition on interest in future intergroup contact was driven by the belief that this behaviour would increase in prevalence in the future (i.e. pre conformity). The analysis was conducted using bootstrapped tests of the indirect path (based on 5,000 bootstrapped resamples), with effects calculated using Hayes (2013) PROCESS macro (Model 4). Condition was entered as a multicategorical independent variable and dummy-coded accordingly with the control group as the reference group. The first dummy variable examined the effect of the dynamic norms condition relative to the control condition, and the second compared the effect of the static norms condition relative to the control (see Figure 1). The analysis revealed a significant indirect effect through pre conformity in the dynamic norms condition ( $b = .20$ ,  $SE = .05$ , 95% CI [.10, .32]), but not in the static norms condition ( $b = .09$ ,  $SE = .05$ , 95% CI [-.01, .19]).

[Insert Figure 1 here]

The results of Study 4 suggest that normative manipulations can be used to encourage intergroup contact even when it is not (yet) normative. As expected, when participants learnt that only a small number of fellow ingroup members (40%) regularly engage in contact with outgroup members this information did not increase personal interest in contact. However, the same low percentage of people engaging in the desired behaviour was motivational when it was presented as an upward trend. In other words, communicating that intergroup contact was practiced by a numerical minority but increasing in prevalence increased interest in intergroup contact over and above communicating a static low contact norm only. Consistent with prior research (Mortensen et al., 2018; Sparkman & Walton, 2017) the effect the dynamic norms condition was mediated by a process of pre conformity whereby participants predicted the increase in prevalence of intergroup contact to continue and conformed to future norm states as if they were the present. Interestingly, the direct effect of the dynamic norms condition on interest in future contact remained significant even after controlling for pre conformity. Thus, it is likely that other psychological processes also play a role in dynamic norms effects such as the perceived importance of target behaviour, and the perceived ability to engage in the target behaviour (Sparkman & Walton, 2019). Future research should go onto to explore these processes in relation to intergroup contact.

### **General Discussion**

With the positive effect of intergroup contact on prejudice now well-documented, the natural next step is to look at intergroup contact as the dependent variable. This research explored the antecedents of contact, focusing on normative factors affecting peoples' intergroup contact engagement. The novelty of this work stems from its combined focus on intergroup as the dependent variable, and on normative social influence as a relatively understudied independent variable in contact research. Four studies explored the role of



normative social influence in predicting intergroup contact engagement, and how normative techniques can be used to promote future contact intentions.

Study 1 provided initial evidence for the predictive power of social norms in a cross-sectional study. British adults were more likely to engage in intergroup contact with immigrants when they perceived higher normative levels of intergroup contact amongst other ingroup members. This effect held when controlling for pre-existing outgroup attitudes and perceived levels of neighborhood diversity. There was no significant association between perceived outgroup norms and contact engagement. As such, the subsequent experimental studies focused on manipulations of ingroup norms surrounding contact. Study 2 found that participants reported higher outgroup approach tendencies when they were told that a significant proportion of fellow ingroup members have regular contact with immigrants. Study 3 replicated the effect of this manipulation on a behavioural outcome measure. Participants in the experimental condition reported improved contact expectancies and intentions and were more likely to continue with a planned intergroup encounter compared to those in the control condition. Study 4 went on to consider how normative techniques can be used to encourage intergroup contact even when descriptive levels of contact are low. Results demonstrated that portraying intergroup contact as increasing in prevalence can spur compliance to even minority norms. This effect was partially mediated by a process of ‘preconformity’ whereby portraying intergroup contact as increasing in popularity created a perception of greater future popularity.

Previous research on extended contact has shown that knowing ingroup members who have outgroup friendships (i.e. extended contact) can vicariously reduce hostility and prejudice (for review see Vezzali et al., 2014), an effect which is mediated by positive ingroup norms regarding cross-group friendships (e.g., De Tezanos-Pinto et al., 2010; Turner et al., 2008). Gomez and colleagues (2018), for instance, previously showed that learning

about high levels of depersonalized extended contact amongst unknown ingroup members promoted more positive intergroup orientations. While the key manipulation in Gomez and colleagues' research was the number of outgroup friends that ingroup members are said to have (none, one or two, two or more), here we manipulated social norms directly by providing information about the number (or proportion) of ingroup members who are said to engage in contact with the outgroup (e.g., 25% vs. 75%). Learning of the high (or rising) number of ingroup members who regularly engage in intergroup contact successfully increased both contact intentions and contact approach behaviour.

Social norms play an important role in predicting attitudes and behaviour in general (Cialdini et al., 1991). The current results provide support for recent theoretical models which suggest that social norms may predict contact-seeking and intergroup contact engagement specifically (Kauff et al., 2020; Paolini et al. 2018; Ron et al., 2017; Turner & Cameron, 2016). Social norms are a key driver of behaviour and produce norm-consistent behaviour when they are made salient, or focal in a specific situation (Cialdini et al., 1991). When applied to intergroup contact, we find that individuals are more likely to engage in intergroup contact when they perceive many others to be doing so, and we can capitalise on this normative influence with intervention strategies that highlight the prevalence of intergroup contact amongst other ingroup members.

### **Limitations and Future Research**

With the exception of Study 4, the figures used in the experimental materials were artificial and devised by the researcher. Of course, descriptive levels of intergroup contact will not always be so high. Dynamic norms provide one solution, but in some contexts even dynamic norms will not be plausible and reflective of reality. When Britain leaves the European Union, for instance, it may not be plausible to suggest that British people's contact

with immigrants is increasing. Communicating injunctive support for intergroup contact may provide another means to remedy a negative descriptive norm (Cialdini et al., 2006; see also Gomez et al., 2018). While descriptive norms convey information about what is commonly done, injunctive norms convey what is commonly approved or disapproved of (Cialdini et al., 1991). In this context, the injunctive norm would refer to whether ingroup members are said to approve of intergroup contact and cross-group friendships. However, in hostile intergroup contexts both descriptive levels of intergroup contact and injunctive support for contact are likely to be low. Future research must therefore go on to explore the boundary conditions of this approach and whether or not normative interventions will be efficacious in the face of intractable intergroup conflicts.

In all the studies reported in this investigation participants were recruited via a commercial participant panel, Prolific. Such participants are likely to routinely participate in psychological studies increasing the potential for demand characteristics. It is possible that participants in the experimental condition guessed the experimental hypotheses and adjusted their responses in accordance with what they believed the experimenter expected of them, rather than norms of the group *per se*. It will now be important for pre-registered replication studies to attempt to replicate current results when employing additional steps to try to conceal the research question such as using the ‘two-study technique’ so participants believe the procedures containing the normative manipulations and those containing the dependent measures are two separate studies. Future research should also implement a delay between the experimental manipulation and the dependent measures to confirm how long-lasting effects are and increase confidence that the results reflect genuine internalisation of the group norm, rather than surface compliance (see Mols et al., 2015). Whatsmore, the effect sizes observed here (particularly in Study 2 & 4) were relatively small. It is likely that intervention

effects will be stronger with repeated exposure, or when the message is received through one or more medium (Hornik, 2002).

The results in Study 1 demonstrated that perceived ingroup norms predicted contact engagement over and above existing outgroup attitudes and levels of neighbourhood diversity. Results relied, however, on a subjective measure of perceived diversity that is likely to be confounded by participants interest in contact. Participants who are not interested in engaging in intergroup contact are likely, for instance, to ignore contact opportunities and, hence, underestimate the number of immigrants in the neighbourhood. Future research should therefore aim to replicate these results using more objective data on the proportion of foreign-born residents, or ethnic diversity, by area.

The current results demonstrate how manipulations of contextual-level social norms can predict contact engagement at the individual level. Future research should explore how such manipulations interact with person-based predictors of prejudice. Prior research suggests that group norms influence the behaviour of group members most strongly for people for whom the salient social identity forms an integral part of their self-concept (Abrams & Hogg, 1990). The effect of learning of high levels of intergroup contact amongst other ingroup members on one's own interest in intergroup contact is likely to be stronger for participants higher in ingroup identification. Political identification and ideological factors (e.g. RWA, SDO) may also be relevant. Research exploring the use of a social norms interventions to reduce household electricity consumption showed that the impact of intervention was different for politically liberal versus conservative households (Costa & Khan, 2013). For households that were politically conservative and that used more electricity than the norm, their electricity usage increased upon receiving a normative message rather than reduced. For these households, the norm of conservation presumably pertained to an outgroup from which they wanted to distance themselves. Similarly, for ideologically intolerant people learning of

favourable contact norms may be ineffective because such norms are attributed to a political outgroup, or, worse still may elicit contrast effects whereby individuals report reduced contact intentions in order to differentiate themselves from groups to which they do not belong (e.g. Doosje et al., 1998; Rabinovich et al., 2012).

Future research should also go on to explore how normative techniques can be used to promote intergroup contact amongst minority group members. In all studies presented in the present investigation all focused on increasing majority group members' willingness to engage in contact with minority group members. Consistent with the idea that individuals are most strongly influenced by the norms of the groups with which they identify, Study 1 found that individuals were more strongly influenced by ingroup contact norms compared to outgroup contact norms. Some findings suggest that outgroup norms are most likely to influence decision-making and behaviour when the outgroup has coercive power over the ingroup (Louis et al., 2005). Accordingly, we may expect that when it comes to promoting disadvantaged minority group's contact with the advantaged majority group, outgroup norms may prove more influential than ingroup members.

### **Conclusion**

“Nudges” can make us healthier, wealthier, and more environmentally-friendly. This research draws on experiences from across these sectors to design new techniques to promote intergroup contact engagement. The intergroup contact literature has traditionally considered contact to be the ‘starting point’, with the key outcome being a reduction in prejudice. As well as exploring the consequences of intergroup contact there is also a need for research that treats intergroup contact as the dependent variable. Four studies show that perceptions of descriptive levels of intergroup contact among one's peers predicts contact engagement, and manipulations of social norms can promote contact approach behaviour. Effects replicated

with both self-reported and behavioural outcome measures. Findings provide a new understanding of the antecedents of intergroup contact and news techniques for encouraging greater inclusion and integration.

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Table 1

*Means, standard deviations and correlations for all variables, Study 1.*

	<i>M (SD)</i>	1	2	3	4	5	6	7
1) Contact Engagement	3.53 (1.98)	-						
2) Age	40.07 (12.31)	-.02 [-.11, .08]	-					
3) Gender	38.23% male	.05 [-.14, .06]	.08 [.18, -.02]	-				
4) Perceived Neighbourhood Diversity	3.71 (2.25)	.53** [.45, .60]	.04 [-.06, .13]	.01 [-.11, .10]	-			
5) Outgroup Attitudes	5.14 (1.28)	.35** [.26, .43]	-.08 [-.17, .01]	-.05 [-.16, .05]	.16* [.02, .21]	-		
6) Ingroup Norms	3.67 (1.31)	.25** [.16, .35]	-.04 [-.12, .06]	-.08 [-.18, .02]	.11* [.01, .20]	.38** [.29, .47]	-	
7) Outgroup Norms	4.21 (1.27)	.22** [.12, .31]	-.17* [-.26, -.09]	.07 [-.17, .04]	.06 [-.04, .16]	.55** [.45, .63]	.53** [.44, .61]	

*Notes.* Values in square brackets are 95% confidence intervals for each correlation based on bootstrapping of 1000 iterations.

0 = female, 1 = male.

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

Table 2

*Hierarchical regression analysis exploring the association between perceived norms and intergroup contact engagement, Study 1.*

	B(SE)	95% CI	$\beta$	$F$	$R^2$	$\Delta R^2$
Variable						
Step 1				105.19**	.35	-
Perceived Neighbourhood Diversity	.43 (.04)	[.36, .51]	.49**			
Outgroup Attitudes	.42 (.06)	[.29, .54]	.27**			
Step 2				55.00**	.36	.01*
Perceived Neighbourhood Diversity	.42(.04)	[.35, .50]	.48**			
Outgroup Attitudes	.35 (.07)	[.20, .49]	.22**			
Ingroup Norms	.17 (.07)	[.02, .31]	.11*			
Outgroup Norms	.01 (.09)	[-.18, .18]	.003			

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

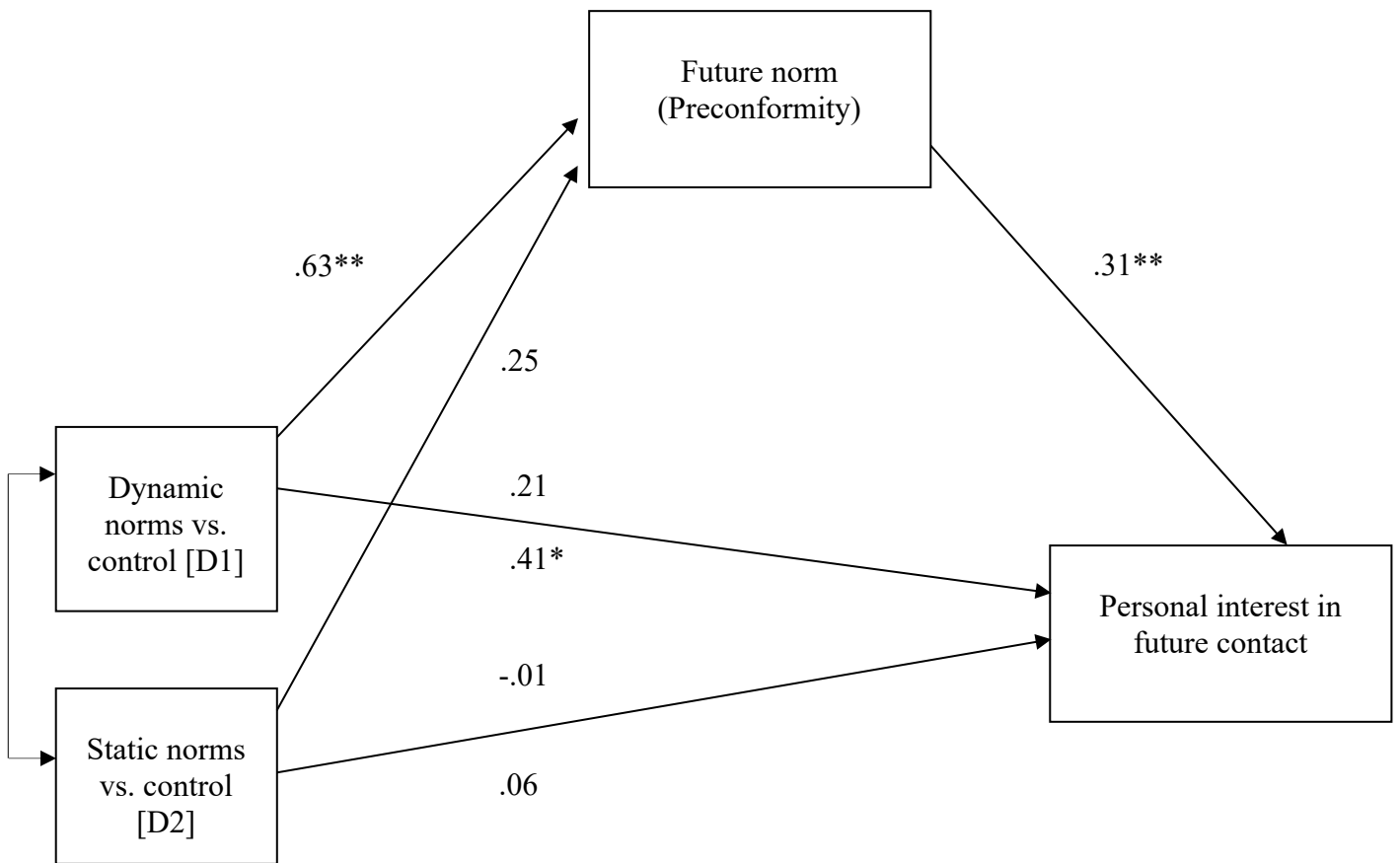


Figure 1: Mediation model of the relationship between normative condition and interest in future contact through preconformity (Study 4).

Note: Path estimates represent unstandardized coefficients. The coefficient above the path from the independent variables to the dependent variable represents its effects when the mediator is included in the model (direct effect), the coefficient below the path represents its effect without the mediator in the model (total effect)  $*p < .05$ ,  $** p < .001$

### Notes

<sup>1</sup> A fourth item was originally included in the measure of ingroup and outgroup norms, “I general I think British [immigrants] are friendly towards immigrants [British people]”. This item was removed from the analyses as it was felt that it did not capture perceived contact *per se*, but rather more general attitudinal dispositions towards the outgroup.

<sup>2</sup>To rule out the possibility that there was conceptual overlap between measures of ingroup norms and outgroups norms the final two sets of items were entered into an exploratory factor analysis (principle axis with varimax rotation) retaining eigenvalues greater than 1. The analysis revealed two distinct factors; each set of items loaded strongly onto the respective factor (loadings were greater than .83 for the ingroup norms items, and greater than .82 for the outgroup norms items).

<sup>3</sup> The pattern and significance of results in Study 1 did not change if the two outliers on outgroup evaluation are not winsorized, or are completely removed.

<sup>4</sup> Additional analyses revealed that the intergroup anxiety and contact avoidance intentions did not serve as significant mediators of the effect of social norms condition on participants’ choice to continue with the planned interaction.