

## REGULAR ARTICLE

# Positive and negative extended contact and contact intentions towards sexual minorities in China: The mediational role of perceived group norms, intergroup anxiety and intergroup trust

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## Abstract

The present study ( $N = 1019$ , 51% females) explores the role of positive and negative extended contact as predictors of willingness for future cross-group interactions in the context of the relationship between heterosexuals and sexual minorities in China. Results revealed that positive extended contact was more prevalent and more strongly associated with contact intentions than negative extended contact. Central to our hypotheses, both positive and negative extended contact were indirectly associated with higher or lower contact intentions, respectively, via the sequential mediation of perceived group norms, intergroup anxiety and intergroup trust. These findings deepen our understanding of how to foster the willingness to engage in contact with members of sexual minorities.

## KEYWORDS

contact intentions, intergroup contact, negative extended contact, positive extended contact, prejudice

## 1 | INTRODUCTION

Extensive public opinion surveys revealed that members of sexual minority groups (e.g., individuals identifying as gay, lesbian, bisexual or transgender; U.N. Women & UNICEF, 2018; Wei & Liu, 2015) are systematically targeted by prejudice and discrimination (e.g., Carroll & Itaborahy, 2015; European Commission, 2015; James et al., 2016; Lewis et al., 2017; O'Dwyer & Vermeersch, 2016; Zvezelj et al., 2020). In the Chinese context, where we conducted the present research, it has been estimated that less than 10% of sexual minority group members have openly disclosed their sexual orientation, gender identity and gender expression (United Nations Development Programme, 2016). Similar rates of disclosure may depend at least in part on the stigma feared by non-heterosexual persons. According to the report released by the United Nations Development Programme (2016), despite the fact that the social

environment facing sexual minority groups in China has undergone positive changes and the degree of de-morbid cognition and social acceptance is increasing, negative attitudes and behaviours towards these minority groups still exist, possibly due at least in part on scarce visibility of these stigmatized groups. This impacts quality of life of sexual minority group members as well as intergroup relations. Indeed, there is sizable evidence that minority group members experience manifold physical and mental health problems arising from prejudice and discrimination (e.g., Blosnich et al., 2016; Cochran et al., 2003; Pachankis & Lick, 2018). Given widespread discrimination towards sexual minority groups, building harmonious relations between the heterosexual majority group and sexual minority groups is of primary importance.

Direct, face-to-face intergroup contact has been shown to represent one of the most effective prejudice-reduction strategies, also towards sexual minority group members (Pettigrew & Tropp, 2006). However, most

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individuals may have limited opportunities for contact with people from minority groups. For instance, heterosexual individuals may have limited chances of interacting face-to-face with individuals from sexual minority groups, especially in a context where people struggle to disclose their sexual orientation, as it could be in China. Research has shown that indirect contact strategies like extended contact, consisting of knowing about positive relations between ingroup and outgroup members, can also reduce prejudice (Vezzali et al., 2014; Zhou et al., 2019), while being less limited by practical constraints (Vezzali & Stathi, 2021; White et al., 2021). In the context examined, one of the major channels through which heterosexual people interact with people from sexual minorities may indeed be via other heterosexual group members who had cross-group interaction with sexual minorities group members (Tao, 2021).

Research on extended contact, however, suffers from some limitations. First, the number of studies that have examined contact in the context of relations between heterosexual individuals and sexual minorities is lower compared to other targeted intergroup relations, like those based on ethnicity. While extended contact has been shown to be associated with outgroup attitudes and intentions in China when the target was represented by an ethnic minority (Wang et al., 2019), existing discrimination and possibly negative social norms against sexual minority individuals raise doubts about the generalization of these results. Second, although extended contact can often be negative (Mazziotta et al., 2015), the number of studies investigating negative extended contact is still limited. Third, to the extent that extended contact is often intended as a predictor of future direct contact, there is a need for studies that investigate its role in predicting future contact or willingness for it, as well as the underlying processes (Turner et al., 2007; Vezzali et al., 2015). Finally, research has generally focused on WEIRD (from Western, Educated, Industrialized, Rich, Democratic countries) samples (Henrich et al., 2010), while there is the need to investigate extended contact in non-WEIRD countries as well. This is especially true considering that effects and underlying mechanisms may differ across cultural contexts, socio-economic conditions and political systems. For instance, given the more collectivistic nature of the Chinese cultural context, where group norms exert a stronger influence on behaviour (McAuliffe et al., 2003), it is possible that the effects of extended contact on attitudes towards the outgroup may be primarily driven by (ingroup) social norms. This construct represents one of the mechanisms we have investigated in the present research, alongside intergroup trust and intergroup anxiety. Individuals' contact intentions towards the outgroup may encapsulate the effects of multiple aspects related to the ingroup, the outgroup and their relationship, all of which contribute to shaping intergroup dynamics. From our perspective, the effects of extended contact on contact intentions, as mentioned

above, may be primarily driven by ingroup social norms which set the stage for subsequent positive or negative emotions towards the outgroup. In other words, social norms can act as buffering agents, mitigating negative emotions (e.g., lower intergroup anxiety) and fostering positive ones (e.g., greater intergroup trust), ultimately shaping individuals' intentions towards the outgroup.

Building on these insights, we present a study aiming to address these limitations, investigating positive and negative extended contact as predictors of willingness to engage in contact with sexual minorities in China; we also investigate perceived ingroup norms, intergroup anxiety and intergroup trust as potential mediators.

## 1.1 | Positive and negative extended contact

Direct contact was shown to be an effective strategy to improve relations with sexual minorities (Kanamori et al., 2022; Pettigrew & Tropp, 2006). However, direct contact is not always feasible, especially with “invisible” minorities and/or minorities characterized by a high size imbalance with the majority groups (Wang et al., 2019). According to the extended contact hypothesis, however, prejudice can be reduced by the knowledge of positive relations between ingroup and outgroup members (Ai, 2016; Wright et al., 1997). Extended contact therefore does not necessitate one-to-one interactions with outgroup members and can also be used when direct contact is impractical (although some degrees of contact are necessary between ingroup and outgroup members, otherwise extended contact is precluded, as is precluded for many persons the possibility to know about these intergroup interactions). Extensive research supports the usefulness of extended contact for improving intergroup relations (Vezzali et al., 2014; White et al., 2021). Moreover, a recent meta-analysis covering 115 studies revealed that extended contact is negatively associated with prejudice independently of direct contact, therefore providing robust support for its effectiveness in improving outgroup attitudes (Zhou et al., 2019).

In China, when considering the overwhelming prevalence of heterosexuals over sexual minorities (Huang et al., 2018) and the low visibility of sexual minority individuals as well as their low willingness to engage in contact with heterosexuals (Tao, 2021; United Nations Development Programme, 2016), extended contact can be a promising prejudice-reduction strategy.

Although not numerous, there are some studies showing that extended contact can improve attitudes towards members of sexual minorities (Hodson et al., 2009; Mereish & Poteat, 2015; Sharp et al., 2011; Vezzali et al., 2020), as well as the intentions to help them in situations where they are victimized (Antonio et al., 2017). For instance, Vezzali et al. (2017) found that more positive direct and extended contact were positively associated with heterosexuals' intentions to have contact with members of sexual minorities.

Only recently research has started to consider the possibility that extended contact can be negative, that is individuals may know about negative relations between ingroup and outgroup members (Mazziotta et al., 2015). Such a possibility should be considered as an extension of the original Wright et al.'s (1997) proposal, which implicitly considered extended contact as positive, conceptualizing it as the number of ingroup members with close contacts (like friendships) with outgroup members. We argue that this initial conceptualization moved the general focus of extended contact research mainly on positive contact, while consideration of negative contact started occurring only recently (Paolini et al., 2010; Schäfer et al., 2021). Indeed, while recent research on direct contact acknowledges the possibility of negative contact and values the positive–negative contact distinction, extended contact research still necessitates a re-definition of its main construct. For this reason, extended contact was re-defined by Vezzali and Stathi (2021) as “knowing about one or more interactions between ingroup and outgroup members” (p. 21). Such re-definition is neutral in terms of extended contact valence, that is it considers interactions between ingroup and outgroup members without making inferences on their positive or negative relations. Therefore, it allows the possibility that extended contact experiences are positive and/or negative.

Emerging research shows that negative extended contact, despite generally being less frequent than positive extended contact (Árnadóttir et al., 2018; Mazziotta et al., 2015), is associated with greater prejudice over and above the effects of positive extended contact (Lutterbach & Beelmann, 2023; Rugar & Graf, 2019; Vedder et al., 2017; Wölfer et al., 2017; but see Bagci et al., 2021). With respect to asymmetric effects of positive and negative extended contact, research has provided mixed results. While some studies did not find evidence for this asymmetry (Árnadóttir et al., 2018; Wölfer et al., 2017), other studies found that positive extended contact had stronger effects than negative extended contact (Husnu et al., 2018, Study 1). In two rare formal tests of the different strengths of the associations of positive and negative extended contact, two studies by Wang et al. (2019, 2022) revealed stronger associations for positive vs. negative extended contact with outgroup attitudes and contact intentions in the Chinese context.

However, there are theoretical reasons to expect greater effects for negative contact than for positive contact. Indeed, negative contact experiences can increase category salience, which is the psychological awareness of mutual group memberships (Paolini et al., 2010) and has been found to facilitate the generalization of contact effects (Brown & Hewstone, 2005; Vezzali et al., 2022). Consistently, Paolini and McIntyre (2019) conducted a meta-analysis showing that negative contact has a stronger impact than positive contact for stigmatized groups (see also Schäfer et al., 2021). On the other side, since positive extended contact is generally more frequent than

negative extended contact (see also Graf et al., 2014), its cumulative effects may compensate and overcome those of negative extended contact. Finally, it is also possible to expect similar effects of the two types of extended contact. Indeed, while negative contact can increase category salience (Paolini et al., 2010), category salience is expected to be higher in extended than direct contact (Wright et al., 1997). Therefore, category salience may be equally high in positive and negative extended contact.

Given the different theoretical predictions that can be made and mixed research findings (with the absence of similar tests in the relation between heterosexuals and sexual minorities), a secondary aim of the present study was to test the relative prevalence and strength of associations of positive and negative extended contact, with exploratory purposes.

## 1.2 | Perceived group norms, intergroup anxiety and intergroup trust as mediators

As discussed above, the core aim of this study is testing extended contact as a predictor of willingness to engage in contact with sexual minorities in China. Alongside this main goal, considering the need for additional investigation into the underlying processes between extended contact and contact intentions, particularly regarding negative contact, which lacks sufficient examination, our research examines the potential mediating role of group norms, intergroup trust and intergroup anxiety. Research has shown that changes in group norms are a main driver of the effects of extended contact (White et al., 2021). Individuals may be inhibited from having contact with members of stigmatized groups (Vezzali et al., 2015), for instance, because they may fear being negatively evaluated by their ingroup members (Eller et al., 2017). Knowing that ingroup members have positive contact can instead suggest that contact is accepted and valued and that ingroup members who have intergroup contact are evaluated positively, resulting in perceptions of positive norms towards intergroup contact. There is large evidence that positive extended contact improves attitudes at least in part because it creates positive pro-contact norms (De Tezanos-Pinto et al., 2010; Gomez et al., 2011; Turner et al., 2008), also when considering relations with sexual minorities (Capozza et al., 2014). The same reasoning applies to negative extended contact: knowing about negative intergroup relations can reinforce negative expectations and perceptions that ingroup members do not support contact with the outgroup. It can therefore shape perceptions of a group norm against contact that results in less positive attitudes and lower contact intentions. However, we are aware of only one study testing group norms as a mediator of negative extended contact, in the context of interethnic relations (Wang et al., 2019): more research is needed to evaluate group norms as a mediator of both positive and negative

extended contact considering the relation between heterosexuals and sexual minorities.

There also is evidence that extended contact exerts its effects through emotions. Specifically, knowing that ingroup members are friends with outgroup members can lower the anxiety usually associated with intergroup relations (Stephan, 2014), resulting in more positive attitudes and contact intentions (Gomez et al., 2011; Turner et al., 2008), also with sexual minorities as the target group (Capozza et al., 2014; Mereish & Poteat, 2015). Similarly, observing negative intergroup relations can heighten anxiety and as a consequence prejudice (Vedder et al., 2017; Wang et al., 2019).

Another emotion that can be relevant to extended contact is intergroup trust, which is a key ingredient for fostering positive intergroup relations between groups whose relations are characterized by mistrust (Dovidio et al., 2002). There is evidence that positive extended contact fosters greater trust towards the outgroup and, in turn, more positive attitudes (Dhont & Van Hiel, 2011), also in post-conflictual contexts (Andrighetto et al., 2012; De Tezanos-Pinto et al., 2017; Tam et al., 2009; Tausch et al., 2011). However, no study has investigated whether the mediating role of intergroup trust also occurs in the relationship between heterosexual people and sexual minority group members. Moreover, in the only study investigating intergroup trust as mediator of negative extended contact, the association between negative extended contact and intergroup trust was nonsignificant (Visintin et al., 2017, Study 2).

Extended contact research so far has mainly investigated group norms perceptions and intergroup emotions as parallel mediators. However, these constructs may also be in reciprocal relation and influence one another in a causal chain, a hypothesis rarely tested in extended contact research (Capozza et al., 2014). Such possibility is especially likely in contexts where the norms towards acceptance of the outgroup is negative or moderate. This can be the case for a deeply stigmatized group, like sexual minorities, which are the target group of the present work. In such contexts, intergroup relations can be characterized by reciprocal negative stereotypes and negative emotions, including mistrusts, diffidence and uncertainty. Changes in group norms however can help eroding these barriers, setting the premises for more positive emotional acceptance, like greater intergroup trust and lower intergroup anxiety. This is the hypothesis that we are going to test. Below, we present our rationale.

Positive perceptions of ingroup norms can not only enhance the willingness to interact with outgroup members but also make ingroup members view outgroup members from a positive perspective and think that they can be trusted, thus increasing intergroup trust. However, negative perceptions of ingroup norms weaken the willingness to engage in contact with other group members and make people have a negative view that they are untrusted, therefore reducing intergroup trust (Capozza et al., 2013; Capozza et al., 2014; De Tezanos-Pinto et al., 2010; Wang

et al., 2019). Furthermore, while a positive perception of ingroup norms can reduce people's negative expectations and negative emotional experience of intergroup interactions thus decreasing the level of intergroup anxiety, a negative perception of ingroup norms enhances negative expectations and negative emotional experience, thus increasing the level of intergroup anxiety (Turner et al., 2008; Wang et al., 2019). Moreover, extant research has also confirmed that more positive extended contact experiences are associated with higher levels of intergroup trust and lower levels of intergroup anxiety, whereas more negative extended contact experiences are linked to lower levels of intergroup trust and higher levels of intergroup anxiety (Dhont & Van Hiel, 2011; Vedder et al., 2017; Visintin et al., 2017). And while intergroup trust positively and significantly predicted intergroup contact intentions, intergroup anxiety negatively and significantly predicted contact intentions (Tam et al., 2009; Wang et al., 2019), and intergroup trust was negatively correlated with intergroup anxiety (Visintin et al., 2017).

It is possible to predict that changes in group norms allow changes in intergroup emotions. Indeed, perceiving that the ingroup is favourable to the outgroup allows to extend ingroup benefits – like more positive intergroup emotions – to the outgroup. In other words, changes in cognitive variables (like group norms) may precede affective changes. Contact research has provided support for this hypothesis (Capozza et al., 2013; Capozza et al., 2014). In the context of extended contact, Capozza et al. (2014) found that positive extended contact was associated with more positive ingroup norms and in turn more positive intergroup emotions (greater trust and empathy, lower anxiety), which ultimately were associated to more positive outgroup attitudes. Perceptions of the ingroup as favourable to the outgroup may indeed reduce outgroup threats (like intergroup anxiety) and foster the perception that outgroup members deserve confidence and trust.

### 1.3 | The present research

The research we present was conducted in China, specifically in two cities in Eastern and Central China. It is estimated that there are about 70 million people belonging to sexual minority groups in China (Zhang et al., 2023), with only approximately 10% of them openly disclosing their sexual orientation (United Nations Development Programme, 2016). In recent decades, a liberating sexual revolution has occurred in China (Zhang et al., 2023), leading to more favourable attitudes towards sexual minorities, making the belonging to these groups more acceptable (e.g., Liu et al., 2017; Lu et al., 2021). As previously anticipated, the choice to focus on extended contact lies in the fact that, in light of negative or ambiguous social norms, individuals may be more willing to disclose their sexual orientation to friends rather than to people that they do not know well, increasing the likelihood

that the information circulates among ingroup members (Tao, 2021). Combined with the relative low number of individuals openly belonging to sexual minority groups and their relative invisibility, we reasoned that extended contact may represent a useful tool to reduce prejudice and that it would do so by changing prevalent negative norms of the majority group and fostering more positive emotions.

## 2 | METHOD

### 2.1 | Participants and procedure

Participants were recruited employing snowball sampling strategy. Specifically, we distributed flyers first in two universities (one in Eastern and the other in Central China) and then in the local communities, this way recruiting almost half of the sample. After proving informed consent and being asked whether they self-categorized or not as heterosexuals, participants were distributed paper-and-pencil questionnaires from research assistants. Participants first responded to a battery of questionnaire measuring their direct and extended contact experiences, perceived ingroup norms, intergroup anxiety, intergroup trust and contact intentions. Then, they proceeded to answering demographic questions concerning gender and age. At the completion of the questionnaire, participants were invited to identify other persons who could take part into the research, who were then contacted by researchers, allowing to recruit the other half of the sample. In total, a sample of 1063 participants were collected (only individuals self-categorizing as heterosexuals were allowed to participate; individuals self-categorizing as non-heterosexual were not administered the questionnaire). A screening of inattentive responding (i.e., they failed to respond correctly to an attention check) caused the exclusion of 44 participants, resulting in a final sample consisting of 1019 participants (495 males, 524 females), ranging in age from 18 to 27 years old ( $M=22.49$ ,  $SD=3.11$ ). All participants self-categorized as heterosexuals. When they finished completing the questionnaire, participants were thanked and rewarded with 5 RMB (corresponding approximately to 0.6 Euros).

Participants provided an informed consent and were assured of the confidentiality of responses and the possibility to drop from the study anytime. At the end, they were thanked and debriefed.

### 2.2 | Measures

Participants were presented with the questionnaire in Chinese; we report English translation of items below (full scales are presented in [Appendix](#)).

#### 2.2.1 | Extended contact

Both positive and negative extended contact were measures using three items each, adapted from previous research conducted in the same context (Wang et al., 2022; e.g., “My heterosexual majority group friends had favorable interactions with their sexual minority friends,” for assessing positive extended contact; “My heterosexual majority group friends had unpleasant interactions with their sexual minority friends,” for assessing negative extended contact). The response scale ranged from 1 (*never*) to 5 (*always*). Cronbach's alpha was 0.84 and 0.79 for positive and negative extended contact, respectively. We merged items for the respective scales, with higher scores indicate more positive and negative extended contact, respectively.

#### 2.2.2 | Perceived group norms

Five items were used to measure perceived group norms (Turner et al., 2008; e.g., “How friendly do you think your friends from heterosexual majority groups are to people from sexual minority group?”). Response options were on a 7-point Likert scale going from 1 (*not at all*) to 7 (*very much*). Higher scores denote more favourable norms for intergroup interactions ( $\alpha=0.93$ ).

#### 2.2.3 | Intergroup anxiety

Six items were employed to assess intergroup anxiety: “When I think of people from the sexual minority group I feel ‘happy’, ‘embarrassed’, ‘prudent’, ‘confident’, ‘relaxed’, ‘impatient’” (see Stephan & Stephan, 1985). Response options ranged from 1 (*never*) to 5 (*very often*). Higher scores reflect more anxiety when thinking about sexual minority outgroup members ( $\alpha=0.78$ ).

#### 2.2.4 | Intergroup trust

We employed an adapted version of Kuchenbrandt et al. (2013) measure to assess intergroup trust. Participants responded to 3 items on a 6-point Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*), for example, “Most sexual minority group members are trustworthy.” Higher scores reflect more trust towards individuals from sexual minority groups ( $\alpha=0.82$ ).

#### 2.2.5 | Contact intentions

Contact intentions were assessed with 8 items on a 9-point Likert scale adapted from previous research (e.g., “How likely do you think it is that you would strike up a conversation with sexual minority group members?”);

Crisp & Husnu, 2011; Ratcliff et al., 1999; Stathi et al., 2012). Higher scores indicate stronger contact intentions ( $\alpha=0.94$ ).

## 2.2.6 | Direct contact

Both positive and negative direct contact were measured using three items each, adapted from previous research (Árnadóttir et al., 2018; Fell, 2015; e.g. “I got along well with people from sexual minority groups”; “People from sexual minority groups had offended me”). The scale ranged from 1 (*never*) to 5 (*always*). Higher scores denote more positive and negative direct contact. Cronbach's alpha was 0.83 and 0.74 for positive and negative direct contact, respectively.

## 3 | RESULTS

### 3.1 | Introductory analyses

Means, standard deviations and correlations are reported in Table 1. As can be seen, positive and negative extended contact were associated positively and negatively, respectively, both with the dependent variable (contact intentions) and with perceived group norms. Group norms were associated negatively with intergroup anxiety and positively with intergroup trust. Finally, intergroup anxiety was associated negatively with contact intentions, while the relation between intergroup trust and contact intentions was positive.

Results of a paired sample *t*-test showed that participants reported more frequent positive ( $M=3.70$ ,  $SD=1.15$ ) than negative ( $M=2.25$ ,  $SD=1.02$ ) extended contact,  $t(1018)=28.51$ ,  $p<0.001$ , Cohen's  $d=1.33$ . We compared the strength of the associations of positive and

negative extended contact with contact intentions with exploratory purposes. We found that positive extended contact ( $\beta=0.40$ ,  $p<0.001$ ) is more strongly linked to contact intentions than negative extended contact ( $\beta=-0.25$ ,  $p<0.001$ ), Wald test=4.75,  $p<0.05$ .

### 3.2 | Mediation analysis

To test whether perceived group norms, intergroup anxiety and intergroup trust mediated the relationship between extended contact and the outcome variables, we applied Structural Equation Models with latent variables, employing the software Mplus 8.0 (Muthén & Muthén, 2017). In line with previous research, positive and negative direct contact were controlled for (Mähönen & Jasinskaja-Lahti, 2016; Vezzali et al., 2014). The model fit was good,  $\chi^2/df=2.05$ , CFI=0.98, TLI=0.97, RMSEA=0.03 [0.030, 0.036]. As shown in Figure 1, positive extended contact was positively associated with perceived group norms ( $\beta=0.27$ ,  $SE=0.05$ ,  $p<0.001$ ); the association was of opposite valence for negative extended contact ( $\beta=-0.19$ ,  $SE=0.05$ ,  $p<0.001$ ). Positive direct contact was positively associated with perceived group norms ( $\beta=0.44$ ,  $SE=0.05$ ,  $p<0.001$ ); the association of negative direct contact with perceived group norms was nonsignificant ( $\beta=-0.05$ ,  $SE=0.05$ ,  $p=0.31$ ). In turn, perceived group norms were positively linked to contact intentions through lower levels of intergroup anxiety ( $\beta=-0.63$ ,  $SE=0.05$ ,  $p<0.001$ ) and higher levels of intergroup trust ( $\beta=0.70$ ,  $SE=0.04$ ,  $p<0.001$ ).

Indirect effects (Table 2) revealed that, in line with our hypotheses, the mediational chain from extended contact to contact intentions via perceived group norms and intergroup emotions was significant both for positive and negative extended contact.

TABLE 1 Means, standard deviations and zero-order correlations among variables ( $n=1019$ ).

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Contact intentions	5.47	2.08	1.00							
2. Intergroup anxiety	2.50	0.82	-0.59***	1.00						
3. Intergroup trust	4.01	1.24	0.60***	-0.58***	1.00					
4. Perceived group norms	4.72	1.53	0.67***	-0.60***	0.69***	1.00				
5. Positive extended contact	3.70	1.15	0.38***	-0.35***	0.39***	0.52***	1.00			
6. Negative extended contact	2.25	1.02	-0.25***	0.40***	-0.31***	-0.29***	-0.10***	1.00		
7. Positive direct contact	3.68	1.12	0.49***	-0.37***	0.45***	0.57***	0.56***	-0.16***	1.00	
8. Negative direct contact	1.87	0.85	-0.20***	0.34***	-0.23***	-0.25***	-0.14***	0.49***	-0.12***	1.00

Note: The response scale ranged from 1 to 7 for perceived group norms, from 1 to 5 for positive and negative extended contact and for intergroup anxiety, from 1 to 6 for intergroup trust and from 1 to 9 for contact intentions.

\*\*\* $p<0.001$ .

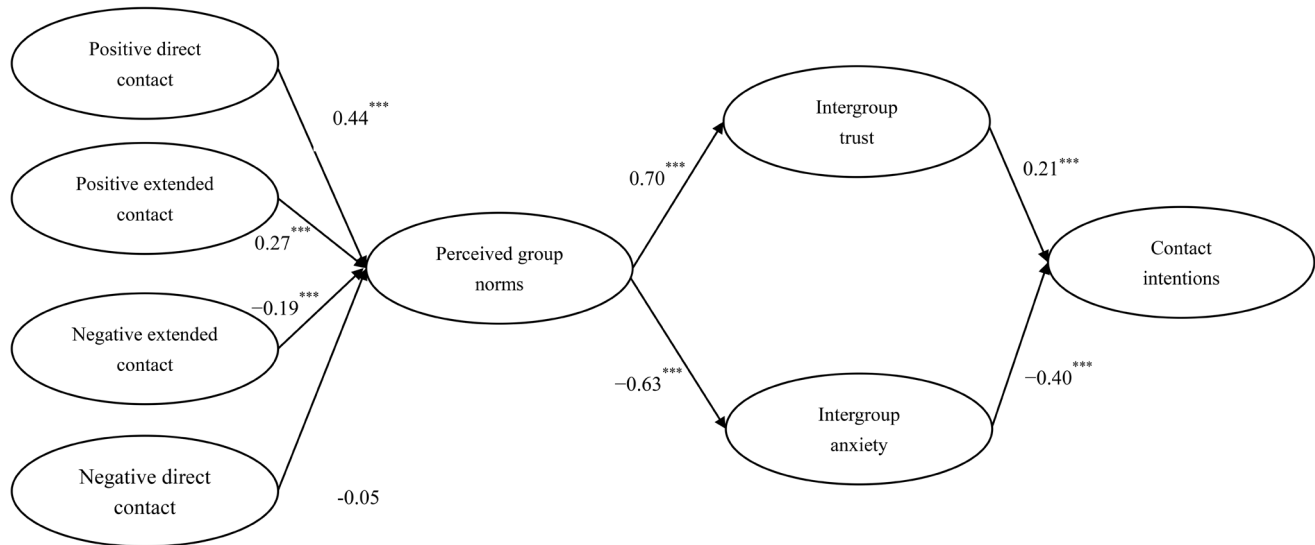


FIGURE 1 Mediation model. All reported coefficients are standardized ( $N=1019$ ). \*\*\* $p<0.001$ .

TABLE 2 Point estimates and confidence intervals for indirect effects ( $n=1019$ ).

	<i>b</i>	SE	95% CIs
Positive extended contact → Perceived group norms → Intergroup trust → Contact intentions	0.04	0.01	0.02, 0.07
Positive extended contact → Perceived group norms → Intergroup anxiety → Contact intentions	0.07	0.02	0.04, 0.11
Negative extended contact → Perceived group norms → Intergroup trust → Contact intentions	-0.03	0.01	-0.05, -0.01
Negative extended contact → Perceived group norms → Intergroup anxiety → Contact intentions	-0.05	0.02	-0.08, -0.02

TABLE 3 Fit indexes, AIC and Akaike weights for the alternative and for the primary models.

Model	$\chi^2/df$	CFI	TLI	RMSEA	95% CI	AIC	$w_i$ (AIC)
Model A	2.30	0.97	0.96	0.036	0.033, 0.039	102.24	0.00
Model B	2.17	0.98	0.97	0.033	0.030, 0.036	102.12	0.02
Model C	2.68	0.96	0.96	0.041	0.039, 0.044	102.42	0.00
Primary model	2.05	0.98	0.97	0.033	0.030, 0.036	102.12	0.98

Importantly, to provide stronger support to our mediational model, we tested three alternative models: (a) one model where affective variables (i.e., intergroup emotions) precede – rather than being predicted by – our cognitive variable: positive and negative extended contact → intergroup trust and anxiety → perceived group norms → contact intentions (“Model A”); (b) a model where extended contact is the outcome variable and intergroup emotions are the predictors of perceived group norms and contact intentions: intergroup trust and anxiety → perceived group norms → contact intentions → positive and negative extended contact (“Model B”); and (c) a model closely aligning to extended contact literature, where social norms and intergroup emotions are tested as parallel mediators: positive and negative extended contact → perceived group norms, intergroup trust and anxiety → contact intentions (“Model C”). We report fit indexes of these alternative models and of our primary

model in Table 3, together with AIC indexes, from which we calculated the Akaike weights (Wagenmakers & Farrell, 2004). As shown in Table 3, the Akaike weights indicated a preference for our primary model that, compared to the alternative models, has the highest weight, suggesting that it is the best model among those considered for explaining the data with least information loss.

## 4 | DISCUSSION

Contact intentions are a critical factor that shapes the development of positive intergroup relations and a relevant outcome of extended contact (Turner et al., 2007). Though research on extended contact between the heterosexual majority group and sexual minority group members is progressively attracting researchers' attention (Ai & Yan, 2017; Earle et al., 2021; Hässler et al., 2020), few

studies took into consideration positive and negative extended contact simultaneously. We present a study focusing on contact intentions as the dependent variable, considering the role of both positive and negative extended contact within the context of an intergroup relationship rather neglected by extended contact research, that is the relationship between heterosexual people and sexual minority group members in China. We also test group norms, intergroup anxiety and intergroup trust as potential mediators.

In line with past research (Turner et al., 2007; Vezzali et al., 2014), the present findings support the idea that extended contact is a predictor of willingness to have contact. Importantly, this finding emerged in a non-WEIRD context (China) and in the context of a relationship rarely investigated in extended contact research. An additional noteworthy finding concerns the role of negative extended contact, which has rarely been investigated in research on extended contact. The present results show that both positive and negative extended contact have independent associations with contact intentions, such that positive contact is positively associated with contact intentions, while the association between negative extended contact and contact intentions is negative. Therefore, observing negative intergroup relations can result in contact avoidance and ultimately more negative intergroup relations, over and above the effects of positive extended contact. It is worth noting that, similar to findings obtained in other intergroup contexts (Wang et al., 2019), positive extended contact occurred more frequently than negative extended contact, supporting the contact prominence proposed by Graf et al. (2014); namely, in day-to-day situations, people usually have more positive than negative contact experiences. Even more relevant, and consistent with other findings obtained in extended contact research (Wang et al., 2019, 2022), the association between positive extended contact and contact intentions was stronger than the association between negative extended contact and contact intentions. Possibly, the greater frequency of positive extended contact had cumulative effects that resulted in a stronger association with contact intentions than negative extended contact. Therefore, the “net” effect of extended contact is positive, since the positive association of positive extended contact with contact intentions exceeds the negative association of negative extended contact with contact intentions.

A further aim of the present research was to investigate mediators of extended contact. Research confirmed that the effects of extended contact are allowed by shifts in group norms (White et al., 2021). Results also highlight the mediational role of intergroup emotions, that is anxiety and trust, consistent with research showing that extended contact also operates at the affective level (Vezzali et al., 2013). It is worth noting that this study extended previous research, showing the mediational role of these variables for a rather neglected relationship

(heterosexuals-sexual minorities) and especially for negative extended contact. Adding to this, in line with previous research (Capozza et al., 2013; Capozza et al., 2014), evidence for sequential mediation emerged, such that higher perceptions of group norms favourable to contact predicted intergroup emotions and, in turn, contact intentions.

The current study shows that changing perceived group norms is a vital source for extended contact, which can be relevant to affective experiences related to key emotions like intergroup anxiety and intergroup trust. Group norms have been theorized to be a main driver of the effects of extended contact and one of its key characteristics (White et al., 2021). Extended contact is a strategy that does not require direct contact between the person experiencing extended contact and outgroup members (though some degrees of contact between in-group and outgroup members are necessary for extended contact to occur) and can easily be used for large populations. Therefore, it may potentially contribute to shaping societal norms, which are vital in promoting the social inclusion of stigmatized groups like sexual minorities. Importantly, part of the influence of group norms may depend on their potential influence on affective processes, which can represent barriers to intergroup relations, but also important variables to foster social closeness. Future work may further explore how group norms stemming from extended contact can contribute to foster the social inclusion of members of sexual minorities, as well as of other stigmatized groups.

Importantly, the fact that the present results emerged in a non-WEIRD collectivistic country like China is of special relevance. While stigma and psychological barriers to disclosure of sexual orientation depend at least in part on social norms, especially in collectivistic environments like China, social norms are also a key driver of extended contact effects (White et al., 2021). Using extended contact in such contexts, characterized by attention and reliance on social norms, is therefore of paramount importance. The present findings indeed suggest that positive extended contact exerts its effects on the intention to meet sexual minority group members and fosters emotional closeness, primarily by making social norms more favourable, therefore encouraging wider social acceptance. It should also be noted that extended contact can employ the same mechanisms to worsen intergroup relations, when it is negative. Importantly, we also found that the associations are stronger for positive than negative extended contact, leading to cautious optimism about the potential of this strategy. These findings mirror and extend those found by Wang et al. (2019), obtained in the context of intergroup relations based on ethnicity. These findings, therefore, support the role that social norms play for extended contact in a collectivistic country. Future studies may further expand these findings, by cross-culturally comparing the relative contribution of social norms to extended contact in

individualistic and collectivistic countries, to provide direct evidence for possible differences between these two cultural contexts.

Although extended contact does not directly rely on direct contact, direct contact with individuals from sexual minorities is still relevant, as for extended contact to occur there should be someone known belonging to the ingroup who has friendly relations with people from the sexual minority group. A potential issue is that despite individuals from a sexual minority group might still feel more confident in disclosing their sexual orientation at the interpersonal level, we must acknowledge that contexts where norms are negative or ambiguous can limit this tendency. Adding to this, heterosexual people may not want to let their friends know that they are friends with individuals from sexual minority groups because they may also fear stigmatization, precluding the occurrence of extended contact (Eller et al., 2017; Vezzali et al., 2015). We did not believe this was the case in the present study, or at least, these barriers have not completely precluded extended contact, as shown by our results. It should also be noted that perceived group norms were at least moderate; in addition, positive direct contact was also moderate (see Table 1), indirectly suggesting that participants were aware that some of their acquaintances belong to sexual minority groups and therefore that some degrees of sexual orientation disclosure occurred. However, we suggest that intervention should heavily focus on social norms, to foster greater disclosure of sexual orientation and reduce the invisibility of minorities, therefore maximizing the effects of extended contact.

Related to the above point, the present findings point on the relevance of using extended contact as a tool to improve relations with sexual minorities in China. In the Chinese context, contact opportunities with sexual minorities are low, as there are only about 70 million individuals who are sexual minority group members (Zhang et al., 2023), and most of them (approximately 90%) do not disclose their sexual orientation (United Nations Development Programme, 2016). Still, the percentage of people disclosing their sexual orientation may be sufficiently high to believe they can confide in their ingroup friends (disclosing is also facilitated by the liberating sexual revolution of the last decades; Zhang et al., 2023). Given that these ingroup friends may hold relatively negative outgroup attitudes, there is a need for contact which can reduce prejudice and promote social integration. Due to limited opportunities for direct contact, extended contact can be an ideal tool, as it allows for the maximization of scarce but existing intergroup interactions. As we have shown, extended contact can, in turn, contribute to a virtuous cycle, by impacting on group norms of acceptance, fostering positive emotions and encouraging further contact.

Finally, it is worth noting that positive and extended contact were assessed with measures focused on the *valence* of contact, rather than on the number of persons with positive or negative relations with outgroup members,

this way assuming that contact between ingroup and outgroup members occurs. Research on negative extended contact reflects this choice, with some studies focusing on the number of persons with positive or negative intergroup relations (e.g., Bagci et al., 2021; Mazziotta et al., 2015), and others – some of which conducted in the Chinese context – presuming a-priori contact and focusing on the occurrence of positive or negative interactions during contact (e.g., Visintin et al., 2017; Wang et al., 2019, 2022). Given that we investigated relations with a minority group, focusing on number of individuals with friends in this group may not have provided sufficient variance, as it may have been on average low. Our choice allowed therefore to specifically focus on the frequency of positive or negative interactions during contact (note that participants may have skipped the scale in case they did not know persons with minority group friends). These considerations have direct relevance to the conceptualization of positive and negative extended contact, a relatively new topic in contact research. We suggest that future studies directly address this conceptualization, comparing these types of measures, but also that they test measures incorporating both aspects, that is number of individuals with positive or negative relations, and frequency of positive or negative interactions within contact. Such dimensions may indeed have distinct effects and operate additively or multiplicatively.

The present study has practical implications. For instance, a potential outlet for spreading the possibility of positive extended contact experiences is online platforms, where individuals are free to share their social experiences, can contribute to group norms creation and favour the development of positive intergroup emotions. At the same time, destructive speech should be avoided, to the extent that negative extended contact can inhibit the effects of positive extended contact. Favouring the sharing of affective experiences and the importance to build reciprocal trust may be a complementary way to encourage the desire for social interaction.

We must acknowledge that our study is not free from limitations. The main limitation rests on its correlational nature. While research has provided consistent evidence for the causal effects of positive extended contact (Vezzali et al., 2014), evidence for negative extended contact and its underlying processes is still scant. This is especially relevant in this study, where we tested sequential mediation cross-sectionally. Also considering that group processes are likely to be bi-directional, we acknowledge that other causal processes can be operating. Future studies should use longitudinal and/or experimental methodologies to provide further validity to the present results. Second, our findings are limited to relations between sexual minority group members and heterosexual people from the perspective of the latter. Future studies should also consider minority group members and replicate these findings for other types of intergroup relationships and contexts.

In conclusion, the present study shows that both positive and negative extended are indirectly associated with heterosexual people's contact intentions towards sexual minority group members in the Chinese context and that the association of positive extended contact with contact intentions is comparatively stronger than the same association for negative extended contact. These findings represent a step towards the understanding of how to foster the social inclusion of sexual minorities in the larger society.

## AUTHOR CONTRIBUTIONS

**Changcheng Wang:** Conceptualization; data curation; formal analysis; investigation; methodology; project administration; resources; validation; writing – original draft; writing – review and editing. **Veronica Margherita Cocco:** Writing – original draft; writing – review and editing. **Alice Lucarini:** Writing – review and editing. **Loris Vezzali:** Validation; writing – original draft; writing – review and editing.

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## CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest.

## OPEN RESEARCH BADGES



This article has earned Open Data and Open Materials badges. Data and materials are available at [[https://osf.io/p45xe/?view\\_only=42347ea16a3f4f54a19c403f3d628a6d](https://osf.io/p45xe/?view_only=42347ea16a3f4f54a19c403f3d628a6d)].

## DATA AVAILABILITY STATEMENT

Data and study material available at: [https://osf.io/p45xe/?view\\_only=42347ea16a3f4f54a19c403f3d628a6d](https://osf.io/p45xe/?view_only=42347ea16a3f4f54a19c403f3d628a6d).

## RESEARCH MATERIALS AVAILABILITY STATEMENT

The study was not pre-registered. Data and study material available at: [https://osf.io/p45xe/?view\\_only=42347ea16a3f4f54a19c403f3d628a6d](https://osf.io/p45xe/?view_only=42347ea16a3f4f54a19c403f3d628a6d).

## ETHICS STATEMENT

Research reported in this paper is conducted in accordance with general ethical guidelines in psychology.

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## APPENDIX

### SCALES USED IN THE QUESTIONNAIRE

*Positive extended contact* (scale range 1–5, from never to always)

1. My heterosexual majority group friends had favourable interaction with their sexual minority friends.
2. My heterosexual majority group friends told me that they had pleasant interaction with their sexual minority friends.
3. My heterosexual majority group friends told me that they had harmonious relations with their sexual minority friends.

*Negative extended contact* (scale range 1–5, from never to always)

1. My heterosexual majority group friends told me that getting along with members of sexual minorities is not easy.
2. My heterosexual majority group friends told me that they had unpleasant interaction with members of sexual minorities.
3. My heterosexual majority group friends told me that they have had heated arguments with members of sexual minorities.

*Group norms* (scale range 1–7, from not at all to very much)

1. How friendly do you think your friends from heterosexual majority group are to people from sexual minority groups.
2. In general, how much do you think heterosexual people like people from sexual minority groups.
3. In general, how much do you think heterosexual people accept people from sexual minority groups.
4. Do you think your friends from the heterosexual majority group would be happy to go out with/date someone who is from a sexual minority group.
5. In general, how happy do you think heterosexual people would be to spend time with/be friends with someone who is from a sexual minority group.

*Intergroup anxiety* (scale range 1–5, from never to very often)

When I think of people from the sexual minority group I feel:

1. Happy.
2. Embarrassed.
3. Prudent.

4. Confident.
5. Relaxed.
6. Impatient.

*Intergroup trust* (scale range 1–6, from strongly disagree to strongly agree)

1. Most sexual minority group members are trustworthy.
2. I would like to share my personal information with sexual minority group members.
3. Generally speaking, I trust people from sexual minority groups.

*Contact intentions* (scale range 1–9, from not at all not at all to very much)

1. How likely do you think it is that you would strike up a conversation with sexual minority group members.
2. How interested would you be in striking up a conversation with sexual minority group members.
3. How much do you think you'd like to strike up a conversation with sexual minority group members.
4. How much do you intend to interact with sexual minority group members in the future.
5. How much do you expect to enjoy interacting with sexual minority group members in the future.
6. How important do you think it is to learn more about sexual minority group members and the problems they face.
7. How much time do you think you might spend learning about the problems that sexual minority group members face.
8. How important do you think interacting with sexual minority group members.

*Positive direct contact* (scale range 1–5, from never to always)

1. People from sexual minority groups greet me actively.
2. I got along well with people from sexual minority groups.
3. I cooperated with people from sexual minority groups in some tasks.

*Negative direct contact* (scale range 1–5, from never to always)

1. Sexual minority group members responded indifferently to conversation initiated by myself.
2. People from sexual minority groups had offended me.
3. I have had trouble with people from sexual minority groups.