TPM®

SOCIAL MEDIA AND ONLINE INTERGROUP CONTACT: THE ROLE OF ALLPORT'S CONDITIONS FOR SEXUAL MAJORITIES AND MINORITIES

MARTINA FACCINI
JESSICA BOIN
UNIVERSITY OF VERONA, ITALY

FIONA WHITE
UNIVERSITY OF SIDNEY, AUSTRALIA

INGA JASINSKAJA-LAHTI
UNIVERSITY OF HELSINKI, FINLAND

SORAYA SHAMLOO
UNIVERSITY OF VERONA, ITALY

VERONICA COCCO
UNIVERSITY OF MODENA AND REGGIO-EMILIA, ITALY

MAHSHID ESMAEILI KOLAHDOOZ
ELENA TRIFILETTI
UNIVERSITY OF VERONA, ITALY

This study investigated online intergroup contact between heterosexual men and women (the majority) and gay men and lesbian women (the minority) and tested whether Allport's optimal conditions — cooperation, common goals, equal status, and authority support — moderate the positive effects of online contact quality on intergroup attitudes and outgroup trust. Italian adult participants reported their experiences of social media contact with a sexual outgroup. Results revealed that optimal conditions did not moderate the association between the perceived quality of online contact and intergroup attitudes in either the majority or minority group. However, when outgroup trust was the dependent variable, the perception of common goals and equal status in online contact strengthened the effect of contact quality among gay and lesbian participants (but not among heterosexual participants). These results shed light on the conditions needed to improve the effects of online intergroup contact on reducing prejudice toward sexual minorities.

Keywords: Online contact; Social media; Gay men and lesbian women; Outgroup trust; Prejudice.

Correspondence concerning this article should be addressed to Elena Trifiletti, Department of Human Sciences, University of Verona, Via San Francesco 22, 37129 Verona (VR), Italy. Email: elena.trifiletti@univr.it

Online social interactions are a common part of our daily lives. This form of contact has the potential to reduce prejudice and improve intergroup relations (Amichai-Hamburger et al., 2015; White & Abu-Rayya, 2012). This aligns with Allport's (1954) Contact Hypothesis which posits that positive intergroup contact can ameliorate intergroup tensions, especially when it occurrs under four optimal conditions: cooperation, common goals, equal status, and authority support. While the role of these conditions in direct face-to-face intergroup contact has been widely investigated (Pettigrew & Tropp, 2006), in online contexts it remains relatively unexplored (Imperato, Schneider, et al., 2021). We distinguish between two types of online contact: naturalistic (i.e., spontaneous online intergroup interactions that are not manipulated) and experimentally manipulated online contact (i.e., interventions).

Although some online intergroup contact interventions have been designed to incorporate Allport's conditions during experimentally manipulated interactions (e.g., the E-contact intervention; White & Abu-Rayya, 2012; White et al., 2020), no study has yet investigated their impact in naturalistic online contact. Our study aims to address this gap in the literature by investigating whether the association between naturalistic online contact and intergroup outcomes (i.e., intergroup attitudes and outgroup trust) is facilitated by Allport's optimal conditions. Examining the role of Allport's conditions in naturalistic online contact is important for understanding whether its impact is enhanced under specific conditions or it remains effective even in their absence (see Pettigrew & Tropp, 2006). Moreover, while Allport's optimal conditions have been shown to facilitate prejudice reduction among majority groups in offline contexts, similar effects have not been found for minorities (Tropp & Pettigrew, 2005). To our knowledge, no study has investigated whether these conditions may differentially impact majority and minority groups' attitudes in social media interactions. Moreover, the limited offline and online contact research focusing on minority populations has primarily examined visible ethnic and religious groups (see Imperato, Schneider, et al., 2021; Tropp & Pettigrew, 2005), while biases related to less visible categories, such as sexual minorities, have received less attention (but see Kim & Wojcieszak, 2018; Lissitsa & Kushnirovich, 2020; White, Verrelli, et al., 2019). This study contributes to the online contact literature by investigating the role of Allport's optimal conditions for *both* majority and minority group members, in the context of a less visible social categorization, namely sexual minorities.

Allport's Optimal Contact Conditions and Intergroup Outcomes

Intergroup contact has been found to be one of the most effective strategies for improving attitudes between different groups (Al Ramiah & Hewstone, 2013; Pettigrew & Tropp, 2006). In his first formulation of the Contact Hypothesis, Allport (1954) argued that intergroup contact reduces prejudice, especially under certain optimal conditions, such as cooperation, shared goals, and support of authority, laws, and customs for positive intergroup relations (see also Pettigrew, 1998).

Research on offline intergroup contact has shown that Allport's conditions can amplify the positive effects of intergroup contact: meta-analytic results from 515 studies by Pettigrew and Tropp (2006) showed that the studies that were rated as satisfying most of Allport's optimal conditions had significantly greater prejudice reduction effects ($r = -.29$) than those in which these conditions were not present ($r = -.20$). Therefore, even though these conditions are not essential for intergroup contact to be effective, they significantly strengthen its impact (Pettigrew & Tropp, 2006). Additionally, the authors assessed the unique impact of each condition through a subset of 134 studies which all represented structured programs specifically implemented to promote Allport's conditions. As authority support was implemented by default, the analysis focused on the remaining three conditions. Results showed no significant differences in mean contact-prejudice

effects between the three conditions. In sum, Allport's conditions facilitate the impact of offline intergroup contact on outgroup attitudes, and no single condition appears central in determining the effects of contact on intergroup attitudes in offline contexts.

Online Intergroup Contact

Creating opportunities for direct, face-to-face intergroup contact is not always possible, especially in contexts marked by social conflicts, segregation, not clearly visible outgroup membership, or normative restrictions (White et al., 2021). To overcome these physical and psychological barriers intergroup contact researchers have developed indirect forms of contact, including: *extended contact* (i.e., knowing an ingroup member who has a friendly bond with an outgroup member; Wright et al., 1997); *imagined contact* (i.e., imagining a positive interaction with a member of the outgroup; Crisp & Turner, 2009); *vicarious contact* (i.e., the exposure to a positive interaction between ingroup and outgroup members; Vezzali et al., 2014); and *parasocial contact* (i.e., observing positive outgroup representations through the media; Schiappa et al., 2005).

A more recently investigated form of indirect contact is online contact. Amichai-Hamburger and Hayat (2013) argued that online environment offers advantages over offline interactions: i) *anonymity*, which refers to a user's perception that they can browse websites, publish something, or interact with others without disclosing personal information; ii) *control over the physical exposure*, freeing users from stereotypes and allowing for self-expression uninfluenced by physical and social cues; iii) *control over the interaction* giving users a sense of security and confidence by engaging from their own space; iv) an *ease of finding similar others* as users can connect with those sharing mutual interests; v) *high availability and accessibility* to easily access lots of devices, allowing users to be online anytime, anywhere; vi) *equality* — one of Allport's (1954) key conditions — since status-related cues are typically hidden; and, vii) *fun*, due to the entertaining and exciting aspect of interacting online (Amichai-Hamburger et al., 2015).

Although research on online contact remains limited compared to offline and other indirect forms of contact, recent studies indicate promising results. A meta-analysis of 23 studies by Imperato, Schneider, and colleagues (2021) demonstrated that online contact moderately reduces prejudice toward ethnic (e.g., Abu-Rayya, 2017), religious (e.g., White et al., 2015), and sexual (e.g., Kim & Wojcieszak, 2018) minority groups. These positive effects of online contact are supported both by correlational and experimental studies. Correlational studies showed that naturalistic online contact can foster positive intergroup outcomes. For example, Imperato, Keum, and colleagues (2021) found that the quantity of online intergroup contact with people from different countries (in terms of the number of Facebook friends) was positively associated with online community commitment, which in turn was linked with increased perceptions of (i.e., increased sensitivity to) both mediated and vicarious discrimination toward ethnic and racial minorities and with increased anti-racist behavior. Žeželj and colleagues (2017) showed that Croatian, Cyprus, and Serbian students with more outgroup Facebook friends reported more positive attitudes, through reduced intergroup anxiety and perceived ethnic threat. Similarly, Schwab and colleagues (2018) found a positive correlation between the amount of virtual contact and outgroup attitudes between Iranians and Israelis.

One of the first experimental studies showing an improvement in intergroup outcomes following online contact intervention was the E-contact experiment that involved Australian Muslim and Catholic students from segregated religious schools (White & Abu-Rayya, 2012). In this study, participants were assigned to either an experimental group or a control group. Participants in the experimental group took part

in a structured nine-week E-contact program involving real-time online chats with a member of a religious outgroup, while participants in the control group interacted with a member of their own religious ingroup. Results showed a significant decrease in intergroup bias and intergroup anxiety and an improvement in outgroup knowledge for the students in the experimental condition, compared to the control. Subsequent studies adopted the E-contact intervention with a pre-programmed (ficticious) outgroup member, showing a positive effect of contact on intergroup relations between Catholics and Protestants in Northern Ireland (White, Turner, et al., 2019), and between Turks and Kurds in Türkiye (Bagci et al., 2021), as well as on reduction of prejudice toward various stigmatized groups including sexual minorities (White, Verrelli, et al., 2019), people with schizophrenia (Maunder et al., 2019), transgender (Boccanfuso et al., 2021) and bisexual individuals (Hatoum & White, 2022).

As in the case of the E-contact paradigms, some of the online contact interventions were designed to meet Allport's conditions. Specifically, in the E-contact intervention (e.g., White et al., 2020), participants collaborate with an outgroup partner on a shared goal under the guidance of a moderator, thus satisfying cooperation, common goals, and authority support. In addition, equal status is granted by asking participants to share similarities in terms of age, gender, and social status (e.g., students). However, the studies based on this paradigm generally do not compare interactions with and without these conditions. Notably, Imperato, Schneider, et al's (2021) meta-analysis, which tested Allport's conditions individually, found no difference in the effects of online contact on intergroup outcomes in interventions where common goals and authority support were present compared to those where they were absent. However, stronger effects of online contact were observed when cooperation was elicited compared to when it was not specifically controlled. Despite the potential of online intergroup contact to improve intergroup relations, studies on naturalistic online interactions have yet to examine whether Allport's conditions are necessary to achieve positive outcomes or even to facilitate contact effects. Given the extensive prevalence of naturalistic intergroup contact on social media, understanding the role of optimal conditions in this context is crucial.

Online Intergroup Contact Involving Majorities and Minorities

Previous research on offline intergroup contact shows that not only the relationship between contact and prejudice tends to be weaker for members of minority status groups than for members of majority status groups, but also that optimal conditions are less influential in predicting contact-prejudice reduction effects for minority samples (Tropp & Pettigrew, 2005). However, studies examining online intergroup contact from the perspective of minority groups (e.g., Cao & Meng, 2020; Lissitsa, 2016; Tynes et al., 2013) remain limited and have produced inconsistent findings. Cao and Meng (2020) found that online contact was positively associated with social capital (e.g., forming reliable outgroup friendships) for Chinese international students in Belgium who did not have opportunities for direct contact. Conversely, Lissitsa (2016) found that online contact did not foster closeness between immigrants and Israelis in Israel. Tynes and colleagues (2013) showed that African American students who experienced more online racial discrimination and stress, had a more negative view of the racial climate on the campus, confirming the diversity of results regarding minority social groups. Finally, some studies compared the effects of online contact in majority and minority groups finding differences between the two groups. For example, White and Abu-Rayya (2012) found that online interaction led to a greater decrease in intergroup bias and intergroup anxiety in Muslim minority members who initially displayed higher levels of intergroup bias, prejudice, intergroup anxiety, and ingroup identification compared to the Christian majority. These findings

provide two important insights. First, online intergroup contact may have positive effects for minority group members, especially when opportunities for offline contact are limited (see Cao & Meng, 2020). Second, when online contact is experimentally manipulated by implementing Allport's optimal conditions, its effects may be stronger for minority than for majority group members. However, it remains to be tested whether online contact via social media that satisfies Allport's optimal conditions reduces prejudice in the same way or differently for both majority and minority groups.

The Present Study

This study has three main aims: (1) to investigate the association between the quality of naturalistic online intergroup contact and intergroup attitudes and trust, (2) to examine the moderating effects of Allport's optimal contact conditions (i.e., cooperation, common goals, equal status, and authority support), and (3) to explore whether these moderating effects differ between majority (heterosexual) and minority (gay and lesbian) group members.

For Aim 1, we examined the effect of quality of online contact on intergroup attitudes and outgroup trust, while controlling for the quantity of online contact and group status. Research on intergroup contact has consistently shown that while both contact quantity and quality are associated with intergroup outcomes, it is the quality of intergroup interactions that more strongly predicts positive intergroup relations (Davies et al., 2011; MacInnis & Page-Gould, 2015). Given that contact quantity primarily reflects exposure to intergroup interactions, we prioritize contact quality as the main predictor, while accounting for the role of quantity as a control variable to isolate its effects. Moreover, whereas intergroup attitudes are a well-established outcome in intergroup contact research (Pettigrew & Tropp, 2006), outgroup trust remains underexplored, especially for minority groups in online contexts (Tropp, 2008). In line with previous research (Imperato, Schneider, et al., 2021; Pettigrew & Tropp, 2006), we hypothesized a significant positive relationship between online intergroup contact and intergroup attitudes (H1a) and between online intergroup contact and outgroup trust (H1b).

Addressing Aim 2, we tested whether Allport's optimal conditions moderate the relationship between online contact quality and intergroup outcomes (intergroup attitudes and outgroup trust). Building upon Allport's (1954) Contact Hypothesis and previous research (Pettigrew & Tropp, 2006), we hypothesized that the optimal conditions considered together would strengthen the positive association between online contact quality and intergroup outcomes (H2a). Out of the four conditions, in line with Imperato, Schneider, et al.'s (2021) findings, we expected that online contact would have a stronger effect on intergroup outcomes at higher levels of cooperation (H2b).

Finally, Aim 3 explores group status differences in these moderating effects between majority and minority groups. Focusing on contact between individuals of different sexual orientations — an understudied intergroup relation in online contact research (see Imperato, Schneider et al., 2021) — we extended the online contact literature by considering both majority and minority perspectives. Early evidence suggests that reading online comments from an outgroup member can reduce social distance toward homosexual people among the heterosexual majority (Kim & Wojcieszak, 2018). Moreover, exposure to LGBT content in online news and on social media can improve the majority's attitudes toward the LGBT community (Lissitsa & Kushnirovich, 2020). Similarly, E-contact interventions can help reduce prejudice toward sexual minority men and women (White, Verrelli, et al., 2019). Despite this growing evidence, the perspective of sexual minorities has been largely ignored. So, this study

addresses this gap by investigating, for the first time, the perspectives of both the sexual minority and majority, examining if Allport's conditions moderate the effects of contact differently in these groups. We did not formulate specific hypotheses but instead examined exploratively the moderating role of group status (minority vs. majority) due to the lack of previous empirical evidence, particularly for the minority group.

METHOD

Participants and Procedure

The initial sample consisted of 404 Italian adult participants. We excluded 51 participants for missing data (i.e., more than 25% of missing). Moreover, only participants who identified themselves as heterosexual, gay, or lesbian were included in the sample, resulting in the exclusion of 64 participants who identified themselves as bisexual (n = 47) or "other" (n = 17). The final sample consisted of 289 Italian adults (133 males, 153 females, and three missing data). Mean age was 30.63 years (SD = 11.54; range 18-67). One hundred and ninety-nine participants self-identified as male (28.72%) or female (39.79%) heterosexuals (majority group), and 90 participants self-identified as gay men (17.30%) or lesbian women (13.15%) (minority group).

The study was approved by the Ethics Committee at the institution of the first author (cod. 2021_11). To collect the data, we created an E-survey through the Microsoft Forms platform. The link to the questionnaire was disseminated through Facebook, Instagram, and WhatsApp by four research assistants' profiles, following the snowballing method. Before accessing the questionnaire, participants read a study description and flagged a consent to participate in the study. Participants were guaranteed anonymity. They did not receive any rewards for their participation. Data collection was performed between May and October 2021.

Measures

The measures were adapted from previous studies. Each scale was then translated into Italian and back-translated into English by two research team members (an Italian native speaker and an English native speaker, respectively).

Online contact. We measured social media contact in terms of contact *quality*, with three items adapted from Capozza and colleagues (2010; see also Vezzali et al., 2022). We asked participants "Think about when you come into contact with homosexual/heterosexual people via social media. How do you evaluate this contact? (1) hostile-friendly, (2) indifferent- of mutual help, (3) rude-kind." Bipolar response options ranged from 1 to 5. The scores were combined into a single index of online contact quality with higher scores indicating more positive intergroup contact (α = .66 for gay men and lesbian women, α = .78 for heterosexuals). We also assessed online contact *quantity* as a control variable using four items. Three items were adapted by Lissitsa and Kushnirovich (2020): "How often do you come into contact with homosexual/heterosexual people on (1) Facebook (or social media that you think are similar)? (2) Instagram (or social media that you think are similar)? (3) WhatsApp (or social media that you think are similar)?" Response options ranged from 1 (*never*) to 5 (*always*). The fourth item was created ad-hoc for this study: "How many homosexual/heterosexual people do you know on social media?" Response options ranged from 1 (*none*) to 5 (*very many*). The scores from these four

items were combined into a single index of online contact quantity, with higher scores indicating more intergroup contact experiences (α = .70 for gay men and lesbian women, α = .79 for heterosexuals).

Allport's optimal conditions. We used a single item for each of the four optimal conditions, adapting a scale developed by Di Bernardo and colleagues (2022). We asked: "When you come into contact with homosexual/heterosexual people via social media, to what extent do you feel that this contact is: (1) characterized by cooperative exchanges, (2) oriented toward common goals, (3) equal, (4) supported by social media." Responses ranged from 1 (*none*) to 5 (*very much*). These conditions were tested separately and as an average score (α = .74 for gay men and lesbian women, α = .78 for heterosexuals).

Intergroup attitudes. This measure was adapted from Wright and colleagues (1997) and consisted of five bipolar items: "How do you feel about homosexual/heterosexual people in general? (1) negative-positive, (2) cold-warm, (3) suspicious-trusting, (4) hostile-friendly, (5) respect-contempt." Response options ranged from 1 to 5. The scores were combined into a single index of intergroup attitudes, with higher scores indicating more positive attitudes (α = .88 for gay men and lesbian women, α = .89 for heterosexuals).

Outgroup trust. This measure consisted of five items adapted from Fuochi and colleagues (2020): "Thinking about homosexual/heterosexual people, indicate to what degree do you feel the following sensations: (1) distrust (reverse-coded), (2) sense of reliability, (3) trust, (4) suspicion (reverse-coded), (5) feeling of security." Response options ranged from 1 (*none*) to 5 (*very much*). The scores were combined into a single index of outgroup trust, with higher scores indicating higher trust toward the outgroup (α = .89 for gay men and lesbian women, α = .78 for heterosexuals).

Analytical Approach

Analyses were conducted using SPSS 28. We performed a MANOVA to verify if there were significant differences between the minority and the majority groups in the mean scores of the investigated variables. Pearson correlations (*r*) between the study variables were computed separately for the two subsamples. To test H1a and H1b, we performed multiple regression models in which each intergroup outcome (i.e., intergroup attitudes and trust) was predicted by online contact quality, controlling for online contact quantity and group status (sexual orientation). To test our moderation hypotheses, we used the PROCESS macro for SPSS provided by Hayes (2022, Models 1 and 3). Specifically, to investigate H2a and H2b, we tested 10 models, one for the four conditions considered together and for each optimal condition separately, and one for each of the two intergroup outcomes. The same models, including the three-way interaction between online contact quality, Allport's conditions, and group status, were tested to examine the combined moderating effect of group status and Allport's conditions. In these models, online contact quality was the predictor (controlling for online contact quantity), intergroup attitudes and outgroup trust were the dependent variables, and Allport's conditions and group status were the moderators.

Results

Preliminary Analyses

Mean scores and standard deviations of the variables, as well as univariate effects of group status are presented in Table A1 of the Appendix. The multivariate test showed a significant effect of group status:

$F(8, 255) = 45.40$, $p < .001$. As for the univariate effects, the results showed small to medium effect sizes, with the exception of online contact quantity. Heterosexuals (majority) reported higher levels of all the measured variables (see Table A1), with two exceptions: authority support — for which the difference between the two groups was not significant — and online contact quantity, which was higher for gay men and lesbian women (minority).

Correlations between the variables for the two groups are shown in Table A2 of the Appendix. Online contact quality was positively associated with Allport's optimal conditions (both the average score and each separate optimal condition), intergroup attitudes, and outgroup trust for both gay men/lesbian women and heterosexuals. In line with previous studies, correlations between online contact quantity and all the other variables were weaker or not significant, especially for gay men/lesbian women. For both gay men/lesbian women and heterosexuals, optimal conditions, cooperation, common goals, and equal status were positively associated with intergroup attitudes and outgroup trust, while the correlations between authority support and intergroup outcomes were not significant. Finally, intergroup attitudes and outgroup trust were positively associated for both gay men/lesbian women and heterosexuals.

Main Analyses

We first investigated the association between the quality of online intergroup contact and intergroup attitudes and trust (Aim 1). Multiple regression analyses showed that online contact quality was positively associated with both attitudes and trust (see Table 1). Moreover, group status was positively related to trust toward the outgroup. No significant relationships between online contact quantity and outgroup outcomes emerged.

To address Aim 2, we examined whether Allport's optimal conditions moderate the relationship between online contact quality and intergroup outcomes. Results (see Table 1) revealed that the two-way interactions between online contact quality and Allport's conditions — evaluated both as a composite score and individually — were not significant for both intergroup attitudes and outgroup trust.

Finally, we investigated if Allport's conditions and group status moderated the relationship between online contact quality and intergroup outcomes (Aim 3). As presented in Table 2, when intergroup attitudes were the dependent variable, neither the two-way interactions between online contact quality and Allport's conditions, nor the three-way interactions involving online contact quality, Allport's conditions (both the average score and each separate optimal condition), and group status were significant.

When outgroup trust was the dependent variable, the two-way interaction between online contact quality and Allport's conditions remained nonsignificant (see Table 2). However, the three-way interaction between online contact quality, Allport's conditions, and group status was significant for the average scor, as well as for common goals and equal status. It was nonsignificant for cooperation and authority support. The decomposition of the significant interactions are presented in Table 3 and illustrated in Figure 1. For gay men and lesbian women, online contact quality was significantly associated with greater outgroup trust at higher levels of optimal conditions (average score), perceived common goals and equal status. For heterosexual participants, the associations between online contact quality and outgroup trust were stronger at lower levels of optimal conditions (average score), perceived common goals, and equal status.

TABLE 1
Direct and moderated effects of online contact quality and Allport's conditions on intergroup attitudes and outgroup trust

	Intergroup attitudes								Outgroup trust							
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*
	43.88	3, 283	.00						64.05	3, 283	.00					
Quality				0.50	.05	[0.41, 0.60]	10.32	< .001				0.43	.04	[0.34, 0.51]	9.69	< .001
Quantity				–0.06	.05	[–0.15, 0.03]	–1.40	.16				0.04	.04	[–0.04, 0.12]	1.04	.30
Group status				–0.14	.11	[–0.35, 0.07]	–1.31	.19				–0.59	.10	[–0.78, –0.40]	–6.10	< .001
	Optimal conditions (average score)															
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*
	28.25	5, 278	.00						42.66	5, 277	.00					
Quality				0.62	.16	[0.21, 0.93]	3.92	< .001				0.41	.14	[0.13, 0.69]	2.91	< .001
Optimal conditions				0.30	.23	[–0.16, 0.76]	1.28	.20				0.30	.21	[–0.12, 0.71]	1.40	.16
Quality x Optimal conditions				–0.05	.05	[–0.16, 0.05]	–0.99	.33				–0.03	.05	[–0.12, 0.07]	–0.54	.59
Quantity				–0.08	.05	[–0.17, 0.01]	–1.68	.19				0.00	.04	[–0.08, 0.09]	0.10	.92
Group status				–0.12	.11	[–0.33, 0.10]	–1.07	.29				–0.50	.10	[–0.66, –0.31]	–5.06	< .001
	Cooperation															
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*
	27.31	5, 274	.00						39.71	5, 274	.00					
Quality				0.58	.14	[0.31, 0.86]	4.22	< .001				0.49	.13	[0.24, 0.73]	3.87	< .001
Cooperation				0.16	.22	[–0.26, 0.59]	0.76	.45				0.27	.20	[–0.12, 0.65]	1.34	.18
Quality x Cooperation				0.03	.05	[–0.13, 0.06]	–0.68	.50				–0.04	.04	[–0.13, 0.04]	–0.92	.36
Quantity				–0.07	.05	[–0.16, 0.02]	–1.46	.15				0.02	.04	[–0.07, 0.10]	0.39	.70
Group status				–0.13	.11	[–0.35, 0.08]	–1.21	.23				–0.54	.10	[–0.73, –0.34]	–5.41	< .001
	Common goals															
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*
	26.90	5, 269	.00						39.99	5, 269	.00					
Quality				0.59	.14	[0.32, 0.86]	4.26	< .001				0.39	.16	[0.14, 0.64]	3.12	< .001
Common goals				0.27	.21	[–0.14, 0.68]	1.29	.20				0.16	.19	[–0.22, 0.53]	0.82	.41

(table 1 continues)

Table 1 (continued)

	(Common goals)															
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*P*
Quality x Common goals				–0.05	.05	[–0.14, 0.05]	–0.99	.32				–0.01	.04	[–0.09, 0.08]	–0.20	.84
Quantity				–0.07	.05	[–0.16, 0.02]	–1.45	.15				0.01	.04	[–0.07, 0.10]	0.31	.76
Group status				–0.13	.11	[–0.36, 0.09]	–1.19	.24				–0.50	.10	[–0.70, –0.30]	–4.86	< .001
	Equal status															
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*
	27.76	5, 271	.00						44.18	5, 270	.00					
Quality				0.52	.14	[0.25, 0.79]	3.80	< .001				0.37	.12	[0.13, 0.61]	3.02	< .001
Equal status				0.21	.18	[–0.15, 0.57]	1.15	.25				0.23	.16	[–0.09, 0.55]	1.40	.16
Quality x Equal status				–0.03	.04	[–0.11, 0.06]	–0.63	.53				–0.01	.04	[–0.09, 0.06]	–0.36	.72
Quantity				–0.07	.05	[–0.17, 0.02]	–1.59	.11				0.02	.04	[–0.07, 0.09]	0.41	.68
Group status				–0.10	.11	[–0.32, 0.11]	–0.96	.34				–0.49	.10	[–0.68, –0.30]	–5.05	< .001
	Authority support															
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*
	25.06	5, 265	.00						36.28	5, 265	.00					
Quality				0.64	.14	[0.36, 0.92]	4.46	< .001				0.50	.13	[0.25, 0.76]	3.84	< .001
Authority support				0.17	.20	[–0.22, 0.57]	0.85	.39				0.11	.19	[–0.25, 0.48]	0.60	.55
Quality x Authority support				–0.05	.05	[–0.14, 0.05]	–0.99	.32				–0.02	.04	[–0.11, 0.06]	–0.54	.59
Quantity				–0.05	.05	[–0.14, 0.04]	–1.13	.26				0.04	.04	[–0.05, 0.12]	–0.89	.37
Group status				–0.16	.11	[–0.38, 0.05]	–1.52	.13				–0.56	.10	[–0.66, –0.37]	–5.63	< .001

Note. M and *SD* are used to represent mean and standard deviation, respectively. Cortisol/DHEA(S) ratio values were log-transformed prior to data analyses, including correlations shown above. DHEA(S) = dehydroepiandrosterone (sulfate). [a] 0 = female, 1 = male. [b] 0 = ≤ 50 years old, 1 = > 50 years old.
$^{*}p < .05$. $^{**}p < .01$.

TABLE 2
Direct and moderated effects of online contact quality, Allport's conditions, and group status (minority vs. majority) on intergroup attitudes and outgroup trust

	Intergroup attitudes								Outgroup trust							
	Optimal conditions (average score)															
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*
	17.85	8, 275	.00						29.92	8, 275	.00					
Quality				0.64	.18	[0.29, 0.99]	3.60	< .001				0.47	.16	[0.16, 0.77]	2.97	< .001
Optimal conditions				0.35	.27	[–0.17, 0.99]	1.32	.19				0.40	.24	[–0.06, 0.86]	1.69	.09
Group status				0.65	1.58	[–2.48, 3.80]	0.41	.68				1.14	1.39	[–1.61, 3.89]	0.82	.41
Quality x Group status				–0.23	.39	[–0.29, 0.99]	–0.59	.56				–0.53	.34	[–1.21, 0.14]	–1.55	.12
Quality x Optimal conditions				–	.06	[–0.19, 0.05]	–1.15	.25				–0.06	.05	[–0.16, 0.04]	–1.18	.24
Group status x Optimal conditions				–	.58	[–1.55, 0.73]	–0.71	.48				–0.90	.51	[–1.91, 0.10]	–1.78	.08
Quality x Optimal conditions x Group status				0.11	.14	[–0.15, 0.36]	0.83	.40				0.25	.12	[0.02, 0.49]	2.18	.03
Quantity				–0.07	.04	[–0.17, 0.02]	–1.57	.12				0.02	.04	[–0.07, 0.10]	0.39	.69
	Cooperation															
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*
	17.25	8, 271	.00						27.25	8, 271	.00					
Quality				0.43	.07	[0.29, 0.57]	6.04	< .001				0.28	.06	[0.15, 0.41]	4.39	< .001
Cooperation				0.04	.06	[–0.07, 0.16]	0.72	.47				0.08	.05	[–0.02, 0.19]	1.61	.11
Group status				–0.14	.11	[–0.37, 0.08]	–1.25	.21				–0.57	.10	[–0.77, –0.37]	–5.55	< .001
Quality x Group status				0.19	.14	[–0.08, 0.46]	1.35	.18				0.32	.12	[0.08, 0.56]	2.61	.01
Quality x Cooperation				–0.05	.06	[–0.16, 0.06]	–0.83	.40				–0.06	.05	[–0.16, 0.03]	–0.31	.19
Group status x Cooperation				–0.05	.11	[–0.27, 0.16]	–0.47	.64				0.06	.10	[–0.14, 0.25]	0.58	.56
Quality x Cooperation x Group status				0.06	.12	[–0.16, 0.29]	0.55	.58				0.15	.10	[–0.05, 0.36]	1.48	.14
Quantity				–0.07	.05	[–0.16, 0.03]	–1.42	.16				0.03	.04	[–0.06, 0.11]	0.60	.55

(table 2 continues)

Table 2 (continued)

	Common goals															
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*
	18.89	8, 266	.00						28.15	8, 266	.00					
Quality				0.41	.07	[0.27, 0.54]	5.95	< .001				0.28	.06	[0.16, 0.40]	4.55	< .001
Common goals				0.07	.06	[–0.04, 0.18]	1.28	.20				0.11	.05	[0.02, 0.21]	2.29	.02
Group status				–0.14	.12	[–0.36, 0.10]	–1.10	.27				–0.53	.10	[–0.74, –0.33]	–5.09	< .001
Quality x Group status				0.13	.14	[–0.14, 0.40]	0.92	.36				0.40	.12	[0.16, 0.64]	3.27	< .001
Quality x Common goals				–0.05	.05	[–0.15, 0.06]	–0.86	.39				–0.04	.05	[–0.13, 0.05]	–0.87	.39
Group status x Common goals				0.02	.10	[–0.18, 0.22]	0.17	.86				0.03	.09	[–0.14, 0.21]	0.37	.71
Quality x Common goals x Group status				0.03	.12	[–0.21, 0.26]	0.20	.84				0.23	.10	[0.02, 0.43]	2.19	.03
Quantity				–0.07	.05	[–0.16, 0.03]	–1.38	.17				0.02	.04	[–0.07, 0.10]	0.43	.67
	Equal status															
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*
	17.73	8, 268	.00						32.44	8, 267	.00					
Quality				0.39	.06	[0.27, 0.52]	6.08	< .001				0.28	.06	[0.17, 0.39]	4.99	< .001
Equal status				0.10	.05	[–0.00, 0.20]	1.89	.17				0.10	.04	[0.01, 0.18]	2.19	.03
Group status				–0.16	.12	[–0.39, 0.07]	–1.38	.17				–0.58	.10	[–0.78, –0.39]	–5.79	< .001
Quality x Group status				0.20	.14	[–0.07, 0.46]	1.44	.15				0.26	.12	[0.03, 0.49]	2.24	.03
Quality x Equal status				–0.05	.04	[–0.15, 0.04]	–1.09	.28				–0.06	.04	[–0.14, 0.03]	–1.33	.18
Group status x Equal status				–0.01	.09	[–0.18, 0.16]	–0.09	.93				0.19	.08	[0.04, 0.33]	2.47	.01
Quality x Equal status x Group status				0.14	.10	[–0.06, 0.33]	1.38	.17				0.24	.08	[0.08, 0.41]	2.87	< .001
Quantity				–0.07	.05	[–0.16, 0.03]	–1.37	.17				0.04	.04	[–0.04, 0.12]	1.04	.30
	Authority support															
	F	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*	*F*	*df*	*p*	*b*	*SE*	95% CI	*t*	*p*
	16.00	8, 262	.00						24.21	8, 262	.00					
Quality				0.46	.06	[0.34, 0.58]	7.62	< .001				–0.30	.05	[–0.41, –0.20]	–5.68	< .001
Authority support				–0.05	.05	[–0.14, 0.05]	–0.98	.13				–0.02	.04	[–0.10, 0.07]	–0.41	.68
Group status				–0.17	.11	[–0.38, 0.05]	–1.51	.33				0.58	.10	[0.39, 0.77]	5.98	< .001
Quality x Group status				0.11	.11	[–0.10, 0.33]	1.03	.30				0.29	.10	[0.09, 0.49]	2.86	< .001
Quality x Authority support				–0.06	.06	[–0.17, 0.05]	–1.05	.29				–0.03	.05	[–0.13, 0.07]	–0.64	.52
Group status x Authority support				0.07	.08	[–0.08, 0.23]	0.93	.35				–0.01	.07	[–0.15, 0.12]	–0.15	< .001
Quality x Authority support x Group status				0.06	.10	[–0.14, 0.26]	0.56	.58				–0.02	.09	[–0.19, 0.15]	–0.23	.82
Quantity				–0.05	.05	[–0.14, 0.04]	–1.08	.28				0.05	.04	[–0.04, 0.13]	1.10	.27

TABLE 3
Associations between online contact quality and outgroup trust at different levels of Allport's optimal conditions (average score, equal status, and common goals) group status (minority vs. majority)

	Levels of optimal condition(s)		*b*	*SE*	*t*	*p*	LLCI	ULCI
Group status	Optimal conditions (average score)							
Minority	–1 *SD*	2.50	0.42	.10	4.17	.00	0.22	0.62
Minority	+1 *SD*	4.00	0.71	.16	4.34	.00	0.39	1.03
Majority	–1 *SD*	2.50	0.31	.06	5.22	.00	0.19	0.43
Majority	+1 *SD*	4.00	0.22	.09	2.55	.01	0.05	0.39
	Equal status							
Minority	–1 *SD*	–1.41	0.28	.10	2.66	.01	0.07	0.49
Minority	+1 *SD*	0.59	0.65	.13	5.01	.00	0.40	0.91
Majority	–1 *SD*	–1.41	0.36	.07	5.09	.00	0.22	0.50
Majority	+1 *SD*	0.59	0.25	.07	3.67	.00	0.11	0.38
	Common goals							
Minority	–1 *SD*	–1.15	0.46	.10	4.45	.00	0.26	0.67
Minority	+1 *SD*	0.85	0.84	.16	5.12	.00	0.51	1.16
Majority	–1 *SD*	–1.15	0.32	.07	4.79	.00	0.19	0.46
Majority	+1 *SD*	0.85	0.24	.08	2.94	.00	0.08	0.41

Note. The table shows only the decomposition of the three-way interactions that were significant in the hierarchical regression models (see Table 2). LLCI = ??????????????????; ULCI = ??????????????????.

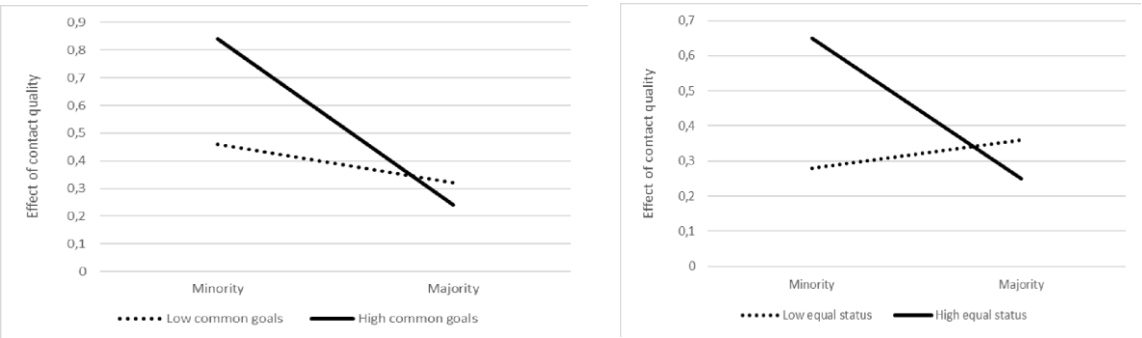

FIGURE 1
Associations between online contact quality and outgroup trust at different levels of perceived common goals and perceived equal status for different group status (majority vs. minority)

DISCUSSION

In this study, we investigated the association between naturalistic online intergroup contact via social media and intergroup outcomes (i.e., attitudes and outgroup trust). In addition, we tested whether Allport's (1954) optimal contact conditions — equal status, cooperation, common goals, and authority support —

moderate these associations. Furthermore, we examined if these moderating effects differ between majority and minority group members. To our knowledge, this is the first study to explore the effects of Allport's conditions in naturalistic online interactions via social media among sexual majority and minority group members.

In line with meta-analytic findings on offline (Pettigrew & Tropp, 2006) and online intergroup contact (Imperato, Schneider, et al., 2021), we expected a positive effect of online intergroup contact on intergroup outcomes. Our results supported these expectations, as we found that online contact quality was significantly associated with more positive intergroup attitudes and greater outgroup trust for both majority and minority group members. This evidence is of great importance, as it suggests that social media environments may be useful for the improvement of intergroup relations when they enable positive intergroup contact.

Similar to offline contact, it is important to identify factors that can further boost the impact of online intergroup contact. In this study, our second aim was to investigate whether Allport's optimal contact conditions moderated the association between online contact quality and intergroup outcomes. We expected that higher levels of Allport's optimal conditions would strengthen the positive association between online contact quality and intergroup outcomes. However, based on Imperato, Schneider, et al's (2021) findings, out of the four conditions (i.e., cooperation, common goals, equal status, and authority support), we expected online contact to have a stronger effect on intergroup outcomes at higher levels of cooperation. Overall, our results demonstrated that, when considering the whole sample, none of the four optimal conditions moderated the effects of online contact quality on intergroup attitudes and outgroup trust. These results suggest that online intergroup contact has positive effects on intergroup relations even at lower levels of Allport's optimal conditions. In online contexts, group members might perceive the intergroup interaction as less threatening and feel more comfortable (Amichai-Hamburger et al., 2015). It is worth noting that our results might be specific to naturalistic online interactions in social media and might not generalize to structured interventions, where the effects of online intergroup contact might critically depend on some optimal conditions. In structured interventions, where interactions are not spontaneous and participants may feel uncertain about the purpose of the intergroup exchange, Allport's conditions could provide structure and meaning thereby amplifying the effects of contact.

We also examined with an exploratory aim whether Allport's conditions moderated the relation between online contact quality and intergroup outcomes differently between majority and minority group members. To test this, we examined the three-way interaction between quality of contact, Allport's conditions, and group status (heterosexual majority and homosexual minority). Results showed that, in the minority sample, online contact effects were stronger when the contact included higher levels of the four optimal conditions, as well as of common goals and equal status between contact partners. In contrast, for the majority sample the association between the quality of contact and outgroup trust was stronger at lower levels of the four optimal conditions, as well as at lower levels of perceived common goals and equal status. Cooperation and authority support did not moderate online contact effects.

These findings provide the first evidence of the role of Allport's conditions in naturalistic online intergroup contact through social media, especially considering minority group members. Specifically, two conditions — common goals and equal status — emerged as facilitators of minority group members' trust toward the majority. These results may be due to the type of contact investigated, which occurred spontaneously through social media. It is possible that the two conditions (support of authority and cooperation) that did not play a moderation role for any group and any outcome variable, are less relevant or not detected in this environment. In fact, in social media, the presence of authority and its support for the interaction is often ambiguous. Similarly, while cooperation typically implies a tangible, shared activity, this perception may not fully apply to social media interactions. On the contrary, in social media, users' profiles and the nature

of the interaction enable participants to better evaluate both the status of the interaction partner and the task orientation of the interaction, thus fostering contact experiences that satisfy conditions of equal status and common goals. According to Amichai-Hamburger and colleagues (2015), equality is one of the main features of online interactions, and it is relatively easy to interact with people sharing mutual goals and interests.

Another interesting aspect is that equal status and shared goals facilitated contact effects for the minority, but not for the majority group and only when outgroup trust was the outcome variable. A possible explanation for the lack of effects for the majority sample may lie in the meaning that these two conditions have for this group. In fact, it may be that perceiving a high level of these two conditions causes the majority to no longer view the other group as an outgroup. Instead, they may feel they share similar goals and social status. This is particularly likely to be observed in the context of the intergroup relationship investigated in this study, based on sexual orientation. As a result, there may be no need for intergroup contact to improve trust or attitudes.

The importance of outgroup trust for minority groups, compared to majority groups, aligns with existing research (Tropp, 2008). This finding may be explained by the unique characteristics of online interactions, which can be particularly advantageous for minority groups. The ability to control the interaction, as well as to interrupt it at any time and to manage the sharing of personal information (Amichai-Hamburger et al., 2015), can create a safer environment for minorities. This sense of security and greater control may, in turn, foster a stronger perception of equal status and shared goals, thus enhancing the positive association between online contact quality and outgroup trust.

Limitation and Future Directions

Despite the encouraging results, some important limitations must be acknowledged. First, the cross-sectional design restricts our ability to make causal inferences about the relationships between 93ariables. Moreover, we only focused on experiences of contact which were retrospectively reported. Future research should address these issues by using experimental or longitudinal designs. Second, our sample included only sexual minorities — specifically, gay and lesbian individuals — limiting generalizability to other minority groups and excluding bisexual and transgender participants. Similarly, participants in the majority group reported their views specifically toward gay and lesbian individuals, rather than toward sexual minorities as a whole. In this regard, it would certainly be important to carry out a more inclusive study of intergroup contact between individuals with different sexual orientations (Salvati & Koc, 2022) and test whether the online contact effects generalize to other social interaction contexts. A further limitation concerns the gay male and lesbian female sample, which was considerably smaller (n = 90) compared to the heterosexual sample (n = 199). This may affect the robustness of the statistical analyses. Another limitation involves the use of single items to measure participants' perceptions of Allport's conditions in online contact on social media. This choice was made in line with previous studies investigating Allport's conditions in intergroup contact (e.g., Di Bernardo et al., 2022; Vezzali & Capozza, 2011).

Despite this limitation, the present study contributes significantly to the online contact literature, by showing for the first time the role played by optimal conditions in online intergroup contact that occurs spontaneously through social media. Moreover, the construct under investigation was highly specific, and research suggests that using single items is particularly appropriate in this case. This approach offers several advantages, including reduced administration time for the participants and lower data processing costs (Allen et al., 2022). Finally, we did not control for direct face-to-face contact in our analyses. While Žeželj and

colleagues (2017) found that the effects of online contact are significant over and above the effects of face-to-face contact, controlling for the effects of direct face-to-face contact would have allowed us to obtain more accurate estimates of the effects observed in this study. Future studies should control for these effects when investigating the relationship between online contact and intergroup outcomes.

Despite these limitations, this study represents an important first step in better understanding the importance of the online environment as a representative social microcosm of the optimal contact conditions needed to improve real-world intergroup relations.

Conclusions

Online contact has become an integral part of our daily lives, offering social psychologists a valuable tool to examine intergroup relations. Grasping this opportunity, this study is the first to investigate how Allport's optimal contact conditions moderate the relation between naturalistic social media contact and intergroup attitudes between groups with different sexual orientations. In line with the literature, we found a direct association between the quality of online contact and intergroup outcomes, independent of whether optimal conditions were met. Importantly, however, for the sexual minority group of gay men and lesbian women, the association between positive contact and intergroup trust was stronger when online contact involved common goals and equal status. These findings shed light on the conditions that enhance the impact of online intergroup contact among sexual minorities.

References

Abu-Rayya, H. M. (2017). Majority members' endorsement of the acculturation integrationist orientation improves their outgroup attitudes toward ethnic minority members: An electronic-contact experiment. *Computers in Human Behavior*, *75*, 660-666. https://doi.org/10.1016/j.chb.2017.06.010

Al Ramiah, A., & Hewstone, M. (2013). Intergroup contact as a tool for reducing, resolving, and preventing intergroup conflict: Evidence, limitations, and potential. *American Psychologist*, *68*(7), Article 527. https://doi.org/10.1037/a0032603

Allen, M. S., Iliescu, D., & Greiff, S. (2022). Single item measures in psychological science: A call to action. *European Journal of Psychological Assessment*, *38*(1), 1-5. https://doi.org/10.1027/1015-5759/a000699

Allport, G. W. (1954). *The nature of prejudice*. Addison Wesley.

Amichai-Hamburger, Y. (2005). Personality and the Internet. In Y. Amichai-Hamburger (Ed.), *The social net: Human behavior in cyberspace* (pp. 27-55). Oxford University Press.

Amichai-Hamburger, Y., & Hayat, Z. (2013). Personality and the Internet. In Y. Amichai-Hamburger (Ed.), *The social net: Understanding our online behavior* (2nd ed., pp. 27-56). Oxford University Press.

Amichai-Hamburger, Y., Hasler, B. S., & Shani-Sherman, T. (2015). Structured and unstructured intergroup contact in the digital age. *Computers in Human Behavior*, *52*, 515-522. https://doi.org/10.1016/j.chb.2015.02.022

Bagci, S. C., Guvensoy, I., Turner, R. N., White, F. A., & Piyale, Z. E. (2021). Investigating the role of E-contact and self-disclosure on improving Turkish-Kurdish interethnic relations. *Journal of Applied Social Psychology*, *51*(6), 577-593. https://doi.org/10.1111/jasp.12760

Boccanfuso, E., White, F. A., & Maunder, R. D. (2021). Reducing transgender stigma via an E-contact intervention. *Sex Roles*, 84, 326-336. https://doi.org/10.1007/s11199-020-01171-9

Çakal, H., Halabi, S., Cazan, A., & Eller, A. (2021). Intergroup contact and endorsement of social change motivations: The mediating role of intergroup trust, perspective-taking, and intergroup anxiety among three advantaged groups in Northern Cyprus, Romania, and Israel. *Group Processes & Intergroup Relations*, *24*(1), 48-67. https://doi.org/10.1177/1368430219885163

Cao, C., & Meng, Q. (2020). Effects of online and direct contact on Chinese international students' social capital in intercultural networks: Testing moderation of direct contact and mediation of global competence. *Higher Education*, *80*(4), 625-643. https://doi.org/10.1007/s10734-020-00501-w

Capozza, D., Vezzali, L., Trifiletti, E., Falvo, R., & Favara, I. (2010). Improving intergroup relationships within and outside the contact situation: The role of common ingroup identity and emotions of empathy and anxiety. *TPM — Testing, Psychometrics, Methodology in Applied Psychology*, *17*(1), 17-36.

Cohen, G. L., & Steele, C. M. (2002). A barrier of mistrust: How negative stereotypes affect cross-race mentoring. In J. Aronson (Ed.), *Improving academic achievement: Impact of psychological factors on education* (pp. 303-327). Academic Press.

Crisp, R. J. & Turner, R. N. (2009). Can imagined interactions produce positive perceptions? Reducing prejudice through simulated social contact. *American Psychologist*, *64*(4), 231-240. https://doi.org/10.1037/a0014718

Davies, K., Tropp, L. R., Aron, A., Pettigrew, T. F., & Wright, S. C. (2011). Cross-group friendships and intergroup attitudes: A meta-analytic review. *Personality and Social Psychology Review*, *15*(4), 332-351. https://doi.org/10.1177/1088868311411103

Di Bernardo, G. A., Vezzali, L., Birtel, M. D., Stathi, S., Ferrari, B., Giovannini, D., & Pettigrew, T. F. (2022). The role of optimal conditions and intergroup contact in promoting positive intergroup relations in and out of the workplace: A study with ethnic majority and minority workers. *Group Processes & Intergroup Relations*, *25*(6), 1516-1533. https://doi.org/10.1177/13684302211010929

Dovidio, J. F., Gaertner, S. L., Kawakami, K., & Hodson, G. (2002). Why can't we just get along? Interpersonal biases and interracial distrust. *Cultural Diversity and Ethnic Minority Psychology*, *8*, 88-102. https://psycnet.apa.org/doi/10.1037/1099-9809.8.2.88

Fuochi, G., Voci, A., Boin, J., & Hewstone, M. (2020). Affective generalization from intergroup contact: Associations between contact-related and outgroup-related empathy, anxiety, and trust. *Group Processes & Intergroup Relations*, *24*(7), 1132-1150. https://doi.org/10.1177/1368430220932662

Hatoum, A. H., & White, F. A. (2022). Advancing E-contact to reduce intergroup anxiety and increase positive attitudes towards individuals who identify as bisexual. *Journal of Sex Research*, *59*(7), 872-885. https://doi.org/10.1080/00224499.2022.2059648

Hayes, A. F. (2022*). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed., pp. 409-490). The Guilford Press.

Imperato, C., Keum, B. T., & Mancini, T. (2021). Does intercultural contact increase anti-racist behavior on social network sites? *Social Sciences*, *10*(6), Article 207. https://doi.org/10.3390/socsci10060207

Imperato, C., Schneider, B. H., Caricati, L., Amichai-Hamburger, Y., & Mancini, T. (2021). Allport meets internet: A meta-analytical investigation of online intergroup contact and prejudice reduction. *International Journal of Intercultural Relations*, *81*, 131-141. https://doi.org/10.1016/j.ijintrel.2021.01.006

Islam, M. R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived out-group variability, and out-group attitude: An integrative model. *Personality and Social Psychology Bulletin*, *19*(6), 700-710. https://doi.org/10.1177/0146167293196005

Kim, N., & Wojcieszak, M. (2018). Intergroup contact through online comments: Effects of direct and extended contact on outgroup attitudes. *Computers in Human Behavior*, *81*, 63-72. https://doi.org/10.1016/j.chb.2017.11.013

Krueger, J. (1996). Personal beliefs and cultural stereotypes about racial characteristics. *Journal of Personality and Social Psychology*, *71*, 536-548.

Lissitsa, S. (2016). Can online contacts between immigrants and veterans facilitate immigrants' social integration? *Ethnicities*, *16*(3), 393-417. https://doi.org/10.1177/1468796814547235

Lissitsa, S., & Kushnirovich, N. (2020). Coevolution between parasocial interaction in digital media and social contact with LGBT people. *Journal of Homosexuality*, *68*(14), 2509-2532. https://doi.org/10.1080/00918369.2020.1809891

MacInnis, C. C., & Page-Gould, E. (2015). How can intergroup interaction be bad if intergroup contact is good? Exploring and reconciling an apparent paradox in the science of intergroup relations. *Perspectives on Psychological Science*, *10*(3), 307-327. https://doi.org/10.1177/1745691614568482

Maunder, R. D., White, F. A., & Verrelli, S. (2019). Modern avenues for intergroup contact: Using E-contact and intergroup emotions to reduce stereotyping and social distancing against people with schizophrenia. *Group Processes & Intergroup Relations*, *22*, 947-963. https://doi.org/10.1177/1368430218794873

McKeown, S., & Psaltis, C. (2017). Intergroup contact and the mediating role of intergroup trust on outgroup evaluation and future contact intentions in Cyprus and Northern Ireland. *Peace and Conflict: Journal of Peace Psychology*, *23*, 392-404. https://doi.org/10.1037/pac0000275

Noor, M., James Brown, R. & Prentice, G. (2008). Precursors and mediators of intergroup reconciliation in Northern Ireland: A new model. *British Journal of Social Psychology*, *47*, 481-495. https://doi.org/10.1348/014466607X238751

Pettigrew, T. (1998). Intergroup contact theory. *Annual Review of Psychology*, *49*, 65-85. https://doi.org/10.1146/annurev.psych.49.1.65

Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*, 751-783. https://doi.org/10.1037/0022-3514.90.5.751

Salvati, M., & Koc, Y. (2022). Advancing research into the social psychology of sexual orientations and gender identities: Current research and future directions. *European Journal of Social Psychology*, *52*(2), 225-232. https://doi.org/10.1002/ejsp.2875

Schiappa, E., Gregg, P. B., & Hewes, D. E. (2005). The parasocial contact hypothesis. *Communication Monographs*, *72*(1), 92-115. https://doi.org/10.1080/0363775052000342544

Schwab, A. K., Sagioglou, C., & Greitemeyer, T. (2019). Getting connected: Intergroup contact on Facebook. *The Journal of Social Psychology*, *159*(3), 344-348. https://doi.org/10.1080/00224545.2018.1489367

Stephan, W. G., Diaz-Loving, R., & Duran, A. (2000). Integrated threat theory and intercultural attitudes: Mexico and the United States. *Journal of Cross-Cultural Psychology*, *31*(2), 240-249. https://psycnet.apa.org/doi/10.1177/0022022100031002006

Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2009). Intergroup trust in Northern Ireland. *Personality and Social Psychology Bulletin*, *35*, 45-59. https://doi.org/10.1177/0146167208325004

Tynes, B. M., Rose, C. A., & Markoe, S. L. (2013). Extending campus life to the Internet: Social media, discrimination, and perceptions of racial climate. *Journal of Diversity in Higher Education*, *6*(2), 102-114. https://doi.org/10.1037/a0033267

Tropp, L. R. (2006). Stigma and intergroup contact among members of minority and majority status groups. In S. Levin & C. van Laar (Eds.), *Stigma and group inequality: Social psychological perspectives* (pp. 171-191). Erlbaum.

Tropp, L. R. (2008). The role of trust in intergroup contact: Its significance and implications for improving relations between groups. In U. Wagner, L. R. Tropp, G. Finchilescu & C. Tredoux (Eds.), *Improving intergroup relations: Building on the legacy of Thomas F. Pettigrew* (pp. 91-106). Wiley-Blackwell.

Tropp, L. R., & Pettigrew, T. F. (2005). Relationships between intergroup contact and prejudice among minority and majority status groups. *Psychological Sciences*, *16*(12), 951-957. https://doi.org/10.1111/j.1467-9280.2005.01643.x

Vezzali, L., & Capozza, D. (2011). Reducing explicit and implicit prejudice toward disabled colleagues: Effects of contact and membership salience in the workplace. *Life Span and Disability*, *14*, 139-162.

Vezzali, L., Hewstone, M., Capozza, D., Giovannini, D., & Wölfer, R. (2014). Improving intergroup relations with extended and vicarious forms of indirect contact. *European Review of Social Psychology*, *25*, 314-389. https://doi.org/10.1080/10463283.2014.982948

Vezzali, L., Lolliot, S., Trifiletti, E., Cocco, V. M., Rae, J. R., Capozza, D., & Hewstone, M. (2022). Effects of intergroup contact on explicit and implicit outgroup attitudes: A longitudinal field study with majority and minority group members. *British Journal of Social Psychology*, *62*(1), 215-240. https://doi.org/10.1111/bjso.12558

White, F. A., & Abu-Rayya, H. M. (2012). A dual identity-electronic contact (DIEC) experiment promoting short- and long-term intergroup harmony. *Journal of Experimental Social Psychology*, *48*(3), 597-608. https://doi.org/10.1016/j.jesp.2012.01.007

White, F. A., Abu-Rayya, H. M., Bliuc, A.-M., & Faulkner, N. (2015). Emotion expression and intergroup bias reduction between Muslims and Christians: Long-term Internet contact. *Computers in Human Behavior*, *53*, 435-442. https://doi.org/10.1016/j.chb.2015.04.074

White, F. A., Borinca, I., Vezzali, L., Reynolds, K. J., Blomster Lyshol, J. K., Verrelli, S., & Falomir-Pichastor, J. M. (2021). *Beyond* direct contact: The theoretical and societal relevance of indirect contact for improving intergroup relations. *Journal of Social Issues*, *77*, 132-153. https://doi.org/10.1111/josi.12400

White, F. A., Maunder, R., & Verrelli, S. (2020). Text-based E-contact: Harnessing cooperative Internet interactions to bridge the social and psychological divide. *European Review of Social Psychology*, *31*(1), 76-119. https://doi.org/10.1080/10463283.2020.1753459

White, F. A., Turner, R. N., Verrelli, S., Harvey, L. J., & Hanna, J. R. (2019). Improving intergroup relations between Catholics and Protestants in Northern Ireland via E-contact. *European Journal of Social Psychology*, *49*, 429-438. https://doi.org/10.1002/ejsp.2515

White, F. A., Verrelli, S., Maunder, R. D., & Kervinen, A. (2019). Using electronic contact to reduce homonegative attitudes, emotions, and behavioral intentions among heterosexual women and men: A contemporary extension of the contact hypothesis. *The Journal of Sex Research*, *56*, 1179-1191. https://doi.org/10.1080/00224499.2018.1491943

Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, *73*(1), 73-90. https://doi.org/10.1037/0022-3514.73.1.73

Žeželj, I. L., Ioannou, M., Franc, R., Psaltis, C., & Martinovic, B. (2017). The role of inter-ethnic online friendships in prejudice reduction in post-conflict societies: Evidence from Serbia, Croatia and Cyprus. *Computers in Human Behavior*, *76*, 386-395. https://doi.org/10.1016/j.chb.2017.07.041

APPENDIX

TABLE A1
Mean scores (*M*), standard deviations (*SD*) for the total sample and for the majority and minority subsamples, and univariate effects of sexual orientation (group status)

	Total sample $N = 289$ *M (SD)*	Majority $n = 199$ *M (SD)*	Minority $n = 90$ *M (SD)*	$F(1, 262)$	p	η_p^2
Contact quality	4.17 (0.76)	4.24 (0.79)	4.03 (0.70)	5.11	.03	.02
Contact quantity	2.80 (1.09)	2.31 (0.83)	3.91 (0.76)	211.44	< .001	.45
Optimal conditions	3.18 (0.75)	3.27 (0.75)	2.98 (0.70)	14.03	< .001	.05
Cooperation	3.13 (0.90)	3.20 (0.93)	2.98 (0.82)	5.11	.03	.02
Common goals	3.15 (0.95)	3.31 (0.95)	2.79 (0.84)	22.69	< .001	.08
Equal status	3.41 (1.00)	3.55 (0.95)	3.11 (1.04)	13.49	< .001	.05
Authority support	3.06 (0.97)	3.09 (0.92)	3.01 (1.07)	0.82	.37	.003
Intergroup attitudes	3.84 (0.71)	3.95 (0.69)	3.60 (0.71)	14.70	< .001	.05
Outgroup trust	3.91 (0.69)	4.11 (0.54)	3.49 (0.79)	49.47	< .001	.06

Note. All measures ranged on a scale from 1 to 5. Optimal conditions was computed as the average score of cooperation, common goals, equal status, and authority support.

TABLE A2
Pearson correlations ® between the study variables for the minority ($n = 90$) and the majority ($n = 199$) subsamples

	1	2	3	4	5	6	7	8	9
1. Contact quality	–	.35***	.56***	.56***	.54***	.48***	.22**	.51***	.53***
2. Contact quantity	.23*	–	.39***	.43***	.39***	.31***	.12	.09	.22**
3. Optimal conditions	.59***	.24*	–	.85***	.87***	.81***	.63***	.32***	.43***
4. Cooperation	.56***	.21*	.79***	–	.73***	.60***	.32***	.30***	.39***
5. Common goals	.45***	.17	.79***	.74***	–	.65***	.33***	.32***	.43***
6. Equal status	.53***	.15	.76***	.49***	.46***	–	.29***	.33***	.39***
7. Authority support	.25*	.18	.66***	.27*	.28**	.32**	–	.03	.14
8. Intergroup attitudes	.56***	.12	.41**	.31**	.33***	.40***	.17	–	.59***
9. Outgroup trust	.57***	.22*	.51***	.43***	.39***	.57***	.16	.71***	–

Note. Correlations are shown in the upper part of the table for the majority subsample, in the lower part for minority subsample. Optimal conditions was computed as the average score of cooperation, common goals, equal status, and authority support.
*$p < .05$. **$p < .01$. *** $p < .001$.