The Journal of Sex Research

ISSN: 0022-4499 (Print) 1559-8519 (Online) Journal homepage: http://www.tandfonline.com/loi/hjsr20

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To cite this article: Fiona A. White, Stefano Verrelli, Rachel D. Maunder & Angus Kervinen (2018): 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, DOI: 10.1080/00224499.2018.1491943

To link to this article: https://doi.org/10.1080/00224499.2018.1491943

Published online: 18 Jul 2018.

THE JOURNAL OF SEX RESEARCH, *00*(00), 1–13, 2018

ISSN: 0022-4499 print/1559-8519 online
DOI: https://doi.org/10.1080/00224499.2018.1491943

Using Electronic Contact to Reduce Homonegative Attitudes, Emotions, and Behavioral Intentions Among Heterosexual Women and Men: A Contemporary Extension of the Contact Hypothesis

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The current study experimentally examined the potential for a contemporary extension of the contact hypothesis, known as electronic contact, or E-contact, to reduce sexual prejudice, intergroup anxiety, and avoidant behavioral intentions among heterosexuals. It also extended the sexual minority contact literature by examining the role of participant and interaction partner sex as a possible boundary condition of this contact–prejudice relationship. To test our hypotheses, 140 heterosexual female and male university students were randomly allocated to interact with a homosexual or heterosexual, female or male E-contact partner, in a collaborative and text-only online interaction before completing the outcome measures. Overall, the results demonstrated that interacting online with a female, as opposed to a male, homosexual E-contact partner reduced heterosexual men's feelings of intergroup anxiety, which in turn was associated with lower sexual prejudice and outgroup avoidance. For heterosexual women, however, E-contact did not influence the outcome variables. In the context of sexual prejudice, these results suggest that E-contact may be particularly useful as a prejudice-reduction strategy among individuals who typically require it most: heterosexual men.

Despite general improvements in public opinion and policy, sexual prejudice toward lesbians and gay men persists (Herek & McLemore, 2013) and continues to have adverse impacts on sexual minority health (Meyer & Northridge, 2007; Verrelli, White, Harvey, & Pulciani, 2018). Consequently, considerable research has focused on identifying strategies to reduce sexual prejudice (Bartoş, Berger, & Hegarty, 2014). To date, one of the most reliable predictors of decreased sexual prejudice is positive contact with lesbians and gay men (Smith, Axelton, & Saucier, 2009). In recent decades, the Internet has rapidly become one of the most effective ways to facilitate contact between individuals. Despite this significant shift toward computer-mediated communication, electronic contact, or E-contact, as a strategy to improve sexual minority relations has remained untested. Therefore, to advance this literature, the current study sought to experimentally evaluate the effects of E-contact on heterosexuals' homonegative attitudes (i.e., sexual prejudice), emotions (i.e., intergroup anxiety), and behavioral intentions (i.e., outgroup avoidance), as well as to examine when and for whom sexual minority E-contact is most beneficial.

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Intergroup Contact

Over 60 years after its original formulation, Allport's (1954) contact hypothesis remains one of the dominant theoretical and applied frameworks for reducing prejudice and improving intergroup relations. This hypothesis proposes that positive contact between groups is important for successful prejudice reduction and is particularly effective when the social interaction adheres to four facilitating conditions, including equal status among the groups, contact characterized by intergroup cooperation rather than competition, a common goal to guide the interaction, and support from authorities. In support of this hypothesis, Pettigrew and Tropp's (2006) seminal meta-analytic review of published and unpublished research revealed a small to moderate relationship between direct intergroup contact and reduced prejudice toward a variety of outgroups, which increased significantly when all of Allport's key conditions were satisfied.

Although Allport (1954) originally conceptualized his contact hypothesis in relation to direct contact between racial and ethnic groups, intergroup contact with lesbians and gay men has also been associated with reduced prejudice toward sexual minorities (e.g., Bartoş et al., 2014; Baunach, Burgess, &

Muse, 2009; Cunningham & Melton, 2013; Herek, 1988; Herek & Capitanio, 1996; Herek & Glunt, 1993; Hodson, Harry, & Mitchell, 2009; Lytle, Dyar, Levy, & London, 2017; MacInnis, Page-Gould, & Hodson, 2017; Mereish & Poteat, 2015; Smith et al., 2009; Vonofakou, Hewstone, & Voci, 2007; West & Hewstone, 2012). One important mechanism that has been proposed to explain this effect is the group-targeted emotion of intergroup anxiety, which refers to the threat and uncertainty an individual may feel when anticipating or experiencing contact with the outgroup (Stephan & Stephan, 1985). Specifically, research has shown that direct contact with lesbians and gay men is associated with decreased feelings of intergroup anxiety, which in turn is associated with reduced sexual prejudice (Lytle et al., 2017; Mereish & Poteat, 2015; Vonofakou et al., 2007; West & Hewstone, 2012).

Although this research has been indispensable to our understanding of intergroup contact as a prejudice-reduction strategy, the majority of this research has focused on face-to-face interactions. In the current digital age, many individuals rely on electronic devices and the Internet to maintain existing relationships and, more importantly, to forge new ones. For example, 68% of all American adults now use social networking sites, such as Facebook (Pew Research Center, 2016), and over 57% of teenagers report that they have made at least one new friend online and prefer instant messaging to face-to-face contact for daily communication (Pew Research Center, 2015b). As the popularity of social networking continues to grow for both women and men, and across all ages, races, and socioeconomic status groups (Pew Research Center, 2015a), we can expect computer-mediated communication to become increasingly valuable in facilitating contact between individuals, especially among those who would otherwise have had limited opportunity to meet. In recognizing this growing potential, researchers have recently revised Allport's (1954) original contact hypothesis to include intergroup interactions that occur online (Amichai-Hamburger & McKenna, 2006; White, Harvey, & Abu-Rayya, 2015). This contemporary form of intergroup contact has been termed E-contact . Consistent with Allport's original conceptualization of contact as an *inter*group phenomenon, E-contact enables both ingroup and outgroup members to be active participants in the same interaction, even if they never meet physically (White, Harvey, & Verrelli, 2015).

Past research has found support for the benefits of E-contact for improving intergroup relations. For example, White and Abu-Rayya (2012; see also White, Abu-Rayya, & Weitzel, 2014) developed and tested a structured E-contact program to improve relations between Muslim and Christian secondary school students who attended religiously segregated schools in Australia. The program required groups of two Muslim and two Christian students in the same grade to collaborate online via a synchronous, text-only chat room to complete curriculum-based classroom activities. The results demonstrated that E-contact reduced intergroup bias and anxiety, and improved outgroup knowledge, compared to a control condition involving interactions between two dyads from the same religious group. Moreover, reduced intergroup anxiety was found to mediate the relationship between E-contact and reduced prejudice (White & Abu-Rayya, 2012). Comparable results have been found when administering similar E-contact interventions between diverse religious (e.g., Catholic and Protestant students in Northern Ireland; White, Turner, Verrelli, Harvey, & Hanna, in press) and ethnic groups (e.g., Israeli and Ethiopian students in Israel; Abu-Rayya, 2017), and as an intervention to reduce the stigma toward schizophrenia (Maunder, White, & Verrelli, 2018).

Although there has been growing empirical support for the benefits of E-contact, its potential to improve sexual minority relations currently remains untested. In the context of online friendship development, however, MacInnis and Hodson (2015) examined the effects of timing of sexual orientation disclosure during a brief online chat. The results demonstrated that heterosexual participants who learned that their chat partner was lesbian or gay before, rather than after, the online interaction perceived both the contact experience and their chat partner more positively. Interestingly, the timing of disclosure did not affect sexual prejudice. Although these findings have important implications for the timing of sexual identity disclosure during computer-mediated communication, the lack of a suitable control condition (e.g., an online interaction where the chat partner disclosed that she or he was the same sexuality as the participant) did not allow the researchers to systematically examine the potential of E-contact to reduce sexual prejudice. Therefore, the current study aimed to address this shortcoming by experimentally comparing the effects of E-contact with an interaction partner who identified as homosexual (experimental condition) to an interaction partner who identified as heterosexual (control condition). Moreover, we aimed to extend the research of MacInnis and Hodson by investigating the E-contact effect on two additional measures of homonegativity, namely, intergroup anxiety and outgroup avoidance.

The Moderating Role of Sex

The literature described here makes a compelling case in favor of the practical benefits of E-contact as a prejudice-reduction strategy. However, there are also several theoretical considerations to make when evaluating the efficacy of any intergroup contact strategy, such as determining when and for whom the contact is likely to be more or less beneficial. To advance the literature's understanding of this issue, the current study investigated the moderating role of sex. Although past research has consistently identified sex as a critical variable for understanding individual differences in sexual prejudice (e.g., Kite & Whitley, 1996), its role in the contact–prejudice relationship has not been considered adequately. In the following section, we delineate the theoretical importance of examining both participant and interaction partner sex when evaluating the benefits of sexual minority contact among heterosexuals.

Participant Sex. We first examined the moderating role of sex by examining whether the E-contact effect was stronger for heterosexual women or men. Interestingly, past intergroup contact literature has largely not considered the influence of participant sex (e.g., Bartoş et al., 2014; Hodson et al., 2009; Mereish & Poteat, 2015; Smith et al., 2009; Vonofakou et al., 2007; West & Hewstone, 2012) or has controlled for it as a nuisance variable (e.g., Cunningham & Melton, 2013; Lytle et al., 2017; MacInnis et al., 2017). The few studies that have examined the interaction between direct contact and participant sex on sexual prejudice initially did not find evidence for sex differences (e.g., Herek & Capitanio, 1996; Herek & Glunt, 1993). However, more recent correlational studies have found that although heterosexual female participants reported more sexual minority contact than their male counterparts, the positive effect of direct contact on improved sexual prejudice was greater for heterosexual male participants (Baunach et al., 2009; Collier, Bos, & Sandfort, 2012).

These recent findings are consistent with Hodson's (2011) hypothesis that positive intergroup contact is most effective in reducing prejudice among individuals who report ideologically intolerant beliefs. Compared to women, men are more likely to strongly endorse beliefs relevant to sexual minorities that, for all intents and purposes, can be considered intolerant, such as more traditional gender-related beliefs and attitudes (Bem, 1993; LaMar & Kite, 1998; Whitley, 2001), in addition to conservative ideologies that emphasize both group-based hierarchies (i.e., social dominance orientation; Sidanius & Pratto, 1999) and fundamental dissimilarities between heterosexuality and homosexuality (i.e., essentialist discreteness beliefs; Haslam & Levy, 2006). Although these constructs have been pivotal in accounting for the sex differences in sexual prejudice (Kite & Whitley, 1996; Whitley & Ægisdóttir, 2000), they may also help explain why men are expected to benefit more from sexual minority E-contact than women. In the absence of contact, heterosexual men are more prone to sexual prejudice (Herek & Glunt, 1993), and therefore, have the most to gain from intergroup contact (Hodson, 2011).

E-Contact Partner Sex. The relevance of sex to sexual minority contact is not solely limited to the sex of the heterosexual participant. Decades of sexual prejudice research have emphasized the importance of also considering the sex of the sexual minority target. For example, although heterosexual men typically report more negative attitudes toward sexual minorities in general (Blashill & Powlishta, 2012; Cragun & Sumerau, 2015), sex differences in sexual prejudice are significantly larger when the target being evaluated is a gay man rather than a lesbian (Herek, 1988, 2000; Herek & Capitanio, 1999; Kite & Whitley, 1996; Louderback & Whitley, 1997; Ratcliff, Lassiter, Markman, & Snyder, 2006; Whitley & Ægisdóttir, 2000). These findings have generally been interpreted in the context of a generalized gender belief framework, which maintains that people's attitudes toward lesbians and gay men are influenced by their beliefs about the appropriate roles, physical appearances, qualities, and behaviors for women and men (Kite & Whitley, 1996). As described previously, relative to heterosexual women, heterosexual men more strongly endorse conservative gender ideologies (Whitley, 2001; Whitley & Ægisdóttir, 2000), and express the corresponding increase in sexual prejudice (Kite & Whitley, 1996), because such beliefs clearly establish sex and sexuality boundaries (Bem, 1993; Haslam & Levy, 2006) and help legitimize their dominant position in society (Sidanius & Pratto, 1999). However, these conservative beliefs about gender are more strictly applied when the sexual minority target is male as opposed to female. It is believed that sexual prejudice may function to affirm men's masculinity and eschew femininity, as well as to punish those, in particular, other men, who fail to adhere to traditional conceptualizations of gender (i.e., gay men as opposed to lesbians; Herek & McLemore, 2013).

Despite apparent sex differences in people's evaluations of lesbians and gay men, to our knowledge, the interaction between the sex of the participant *and* the sex of the sexual minority contact partner has not been investigated in the context of intergroup contact. Past research has either measured participants' direct contact with "lesbians and gay men" collectively (e.g., Baunach et al., 2010; Collier et al., 2012; Herek & Capitanio, 1996; Herek & Glunt, 1993; Hodson et al., 2009; MacInnis et al., 2017), direct contact with "lesbians" and "gay men" on separate scales but then aggregated participants' responses to form a single index of sexual minority contact (e.g., Cunningham & Melton, 2013; Lytle et al., 2017; Mereish & Poteat, 2015), or direct contact with either "lesbians" or "gay men" only (e.g., Vonofakou et al., 2007; West & Hewstone, 2012). These previous approaches to measuring sexual minority contact have made it difficult to determine whether the contact–prejudice effect was stronger for heterosexual men (versus women) when the contact partner was a lesbian woman or a gay man. To address this shortcoming, the current study manipulated the sex of the E-contact partner alongside their sexuality. By simultaneously considering the hypothesis that positive contact more effectively reduces prejudice among prejudice-prone individuals (Hodson, 2011), and the general finding that heterosexual men are particularly intolerant of gay men (Kite & Whitley, 1996; Ratcliff et al., 2006), it may be reasonable to expect that heterosexual men would benefit more from sexual minority E-contact when the interaction partner identified as a gay man rather than a lesbian. We referred to this possibility as Hypothesis 1a.

In a related line of research, however, it appears that heterosexual men's homonegative attitudes are highly sensitive to contextual cues. When primed with thoughts about gay men, heterosexual men (but not women) tend to express greater sexual prejudice than when primed with thoughts about lesbians (Herek, 2000; Herek & Capitanio, 1999). For many men, being primed with male homosexuality may activate schemas associated with hegemonic masculinity, which requires them to affirm their masculine gender

identity by rejecting homosexuality (Herek, 2000; Herek & McLemore, 2013). Once these beliefs become more accessible in memory, subsequent attitudes expressed about sexual minorities are considerably more negative (Herek, 2000). Conversely, being primed with thoughts about female homosexuality may not activate the same gender- or sexuality-related schemas in heterosexual men. Consequently, men's sexual minority attitudes are substantially less negative because they are not influenced by the compulsion to establish a clear masculine identity and prove their heterosexuality (Herek, 2000). In fact, men have a tendency to perceive lesbian women in positive terms, by placing a high erotic value on female homosexuality (Louderback & Whitley, 1997). Our alternative hypothesis, referred to as Hypothesis 1b, therefore predicted that heterosexual men would benefit more from sexual minority E-contact when the interaction partner identified as a lesbian rather than a gay man.

The Current Study

The current study was the first experimental investigation of E-contact as a strategy to reduce heterosexuals' homonegative attitudes, emotions, and behavioral intentions, as well as the first to consider the confluence of participant *and* interaction of partner's sex in the contact-prejudice relationship. As outlined above, we tested two competing hypotheses regarding the moderating role of sex:

H1a: The E-contact effect will be stronger for heterosexual men when the interaction partner identifies as a gay man.

H1b: The E-contact effect will be stronger for heterosexual men when the interaction partner identifies as a lesbian.

Furthermore, consistent with past direct contact (e.g., Vonofakou et al., 2007) and E-contact (White & Abu-Rayya, 2012) literatures, the current study also examined the mediating role of group-targeted emotions, particularly intergroup anxiety. According to Hodson (2011), positive contact more effectively reduces prejudice among ideologically intolerant people by directly alleviating factors that exacerbate prejudice, particularly feelings of threat and uncertainty (Lytle et al., 2017; West & Hewstone, 2012). Through meeting the outgroup in a structured online interaction, prejudice-prone individuals (e.g., heterosexual men) may benefit more from E-contact by realizing that their initial anxieties and prejudices about sexual minorities were in fact exaggerated (Amichai-Hamburger & McKenna, 2006). Based on this reasoning, and taking into account Hypotheses 1a and 1b, we predicted the following:

H2a: Intergroup anxiety will be a stronger mediator of the E-contact effect for heterosexual men when the interaction partner identifies as a gay man.

H2b: Intergroup anxiety will be a stronger mediator of the E-contact effect for heterosexual men when the interaction partner identifies as a lesbian.

To test these hypotheses experimentally, heterosexual participants engaged in a structured and text-based synchronous online interaction with either an ostensible male or female E-contact partner who disclosed that he or she was either homosexual or heterosexual. Unlike MacInnis and Hodson's (2015) online interaction task, which only involved two individuals asking and answering a structured set of questions hypothesized to induce closeness, the current study built on this procedure by involving a collaborative task that was designed to include Allport's (1954) key contact conditions. Specifically, this task required two introductory psychology students at the same university (i.e., equal status) to work together to develop strategies to help future first-year students transition successfully from high school to university (i.e., cooperation and common goal), with the guidance of a chat moderator (i.e., authority support). To ensure strong experimental control, the ostensible E-contact partner's and chat moderator's responses during the interaction were uniform across participants. This methodology not only provided a great degree of control over the content of information exchanged and the timing of each online interaction but also ensured that Allport's conditions were satisfied with greater precision, thus offering us a better test of the contact hypothesis than has been achieved in past experimental fieldwork (e.g., Abu-Rayya, 2017; White & Abu-Rayya, 2012). At the conclusion of the online exchange, participants reported their homonegative attitudes, emotions, and behavioral intentions via measures of sexual minority prejudice, intergroup anxiety, and intentions to avoid lesbians and gay men, respectively.

Method

Participants and Design

A total of 175 students at an Australian university participated in the study for course credit. Participants were recruited from the introductory psychology research pool. Those who identified as nonheterosexual (n = 14), incorrectly identified the E-contact partner's sexual identity or sex (n = 15), reported suspicion about the cover story (n = 5), or did not complete the study (n = 1) were excluded. The final sample contained 140 heterosexual participants, including 74 women (M_{age} = 19.12, SD = 2.39; 64.9% White, 25.7% Asian; 50.0% Christian, 31.1% no religion) and 66 men (M_{age} = 19.82, SD = 4.09; 57.6% White, 31.8% Asian; 48.5% Christian, 39.4% no religion). An a priori power analysis indicated that 128 participants would be required to detect a medium-sized effect (η_p^2 = .06) 80% of the time at a significance level of .05. This effect size was chosen based on previous E-contact research, which has found medium to large effect sizes ranging from .08 to .13 (White et al., in press).

The study adopted a 2 (E-contact condition: heterosexual versus homosexual) × (participant's sex: female versus

male) × 2 (E-contact partner's sex: female versus male) between-subjects design. Female and male participants were randomly allocated to an ostensible female and male E-contact partner who identified as either heterosexual or homosexual. The outcome variables were sexual prejudice, intergroup anxiety, and outgroup avoidance.

Measures

Sexual Prejudice. Heterosexuals' attitudes toward the homosexual outgroup were assessed using Herek's (1998) Attitudes Toward Lesbians and Gay Men (ATLG) Scale. The scale includes 20 attitude statements, 10 about lesbians (ATL subscale; e.g., "Lesbians just can't fit into our society"), and 10 about gay men (ATG subscale; e.g., "If a male has homosexual feelings, he should do everything he can to overcome them"). Participants were required to indicate their level of agreement with each statement on a scale from 1 (*Strongly disagree*) to 6 (*Strongly agree*). After the relevant items were reverse-scored, items were averaged together to create an index of sexual prejudice, where higher scores indicated more sexual prejudice. Both subscales and the overall scale were reliable (ATL, $\alpha = .89$; ATG, $\alpha = .91$; ATLG, $\alpha = .95$).

Intergroup Anxiety. To measure anxiety-related emotions toward homosexual contact, Stephan and Stephan's (1985) intergroup anxiety scale was adapted for the current study. Here, participants rated how *happy, awkward, defensive, careful, uncomfortable*, and *relaxed* they would feel if they were in a group made up entirely of ingroup members (i.e., heterosexual people) or outgroup members (i.e., homosexual people) on a scale from 1 (*Not at all*) to 7 (*Extremely*). Both scales were reliable (ingroup anxiety, $\alpha = .84$; outgroup anxiety, $\alpha = .91$). Using the scoring method devised by Stephan and Stephan, after the relevant items were reverse-scored, a single index of intergroup anxiety was calculated by subtracting participants' mean ingroup anxiety score from their mean outgroup anxiety score. Positive scores indicated relatively more anxiety about interacting with homosexuals, while negative scores indicated relatively more anxiety about interacting with heterosexuals.

Outgroup Avoidance. To assess heterosexuals' avoidant behavioral intentions toward sexual minorities, the avoidance subscale from Mackie et al.'s (2000) action tendencies measure was adapted for a homosexual outgroup. This measure consisted of three items (e.g., "In general, when thinking of homosexual people, I want to avoid them"). Participants had to rate each item on a scale from 1 (*Never*) to 7 (*All the time*). Overall, the scale was reliable ($\alpha = .93$). Items were averaged such that a higher score indicated greater avoidance of sexual minority contact.

Procedure

When participants arrived at the lab, they were informed that the study sought to evaluate an instant messaging program designed for new students in their first year of university. After providing their consent, participants completed demographic questions relating to their age, sex, sexual identity, ethnicity, and religion. The experimenter then introduced all participants to the instant messaging program by informing them that they would be trialing the program with a fellow university student, who was located in a similar lab elsewhere on campus. Participants were also made aware that a chat moderator would be present during the online exchange to supervise and guide the interaction.

The E-contact program was coded in AJAX Chat (http://www.ajaxchat.org/), a fully customizable and open source Web chat engine. As noted previously, the current E-contact format involved an online interaction that was computer simulated (for a similar procedure, see MacInnis & Hodson, 2015), which allowed for stringent experimental control. As such, the responses provided by the ostensible E-contact partner and chat moderator were preprogrammed and consistent across participants (except for disclosure of the E-contact partner's sex and sexual identity). Importantly, the scripted responses of the ostensible E-contact partner were designed to represent a typical university student by including common typographical and grammatical mistakes, slang terms, and emoticons. Moreover, to increase the realism of the cover story, the chat moderator's and E-contact partner's responses followed a variable delay to account for typing shorter and longer responses. The online interaction was administered on individual computers and was limited to a synchronous, text-only exchange, lasting approximately 15 minutes.

As described previously, past research has demonstrated that when sexual identity disclosure occurs early, rather than later, during online interactions, heterosexual participants perceive their interaction partners and the quality of the interaction significantly more positively (MacInnis & Hodson, 2015). Therefore, we ensured that disclosure of the E-contact partner's sex and sexual identity occurred at the beginning of the interaction as part of an introductory phase. Specifically, once participants logged into the instant messaging program, the chat moderator immediately welcomed the participant and their E-contact partner to the chat room by their first name. Here, we first manipulated the interaction partner's sex by using sex-specific first names: The female interaction partner was introduced as "Lauren" and the male interaction partner was introduced as "Joseph." The chat moderator then invited the ostensible E-contact partner to initiate the conversation with the participants by describing their hobbies. During this introduction, the E-contact partner disclosed that in their spare time they enjoyed "going to the movies with [their] girlfriend (boyfriend)." Here, we manipulated the E-contact partners' sexual identity by revealing that they were in a same-sex (experimental E-contact condition) or opposite-sex (control E-contact condition) relationship. The chat moderator then asked the participants to introduce themselves to their interaction partner by also describing their hobbies.

At the conclusion of this introductory phase, the chat moderator invited participants to complete a collaborative task with their E-contact partner. To introduce this collaborative task, the chat moderator was preprogrammed to say:

> Please work together to come up with two strategies for future first-year students to make the transition into first year easier. Thinking about your experience in first year, what advice would you give to students in terms of how they can best make the transition from high school to university?

As outlined previously, this task was structured to include Allport's (1954) key contact conditions. Specifically, the task required participants and their E-contact partners, who were introductory psychology students at the same university (i.e., equal status), to work together to devise two strategies to improve the university experience for future students transitioning to university (i.e., cooperation and common goal), under the supervision of the chat moderator (i.e., authority support). During this task, the participant and the E-contact partner were each required to develop one strategy, further strengthening the perception of equal status during the online interaction. At the end of the chat, the chat moderator concluded the online exchange by thanking the participant and the E-contact partner for their contributions to the collaborative task.

Once participants left the chat room, they were asked to complete a postchat questionnaire, which asked them to describe any similarities or differences between themselves and their interaction partners. This item functioned as a subtle manipulation check to determine if participants could correctly identify the sex and sexual identity on their E-contact interaction partner. Finally, all participants completed the outcome measures before being probed for suspicion and fully debriefed about the true nature of the experiment.

Statistical Analyses

Before testing the main hypotheses, we first examined the bivariate relationships between the outcome measures and participant sex. We further examined participant sex differences in attitudes toward lesbians and gay men separately via a mixed-design analysis of variance (ANOVA) with a within-subjects factor of sexual prejudice subscale score (attitudes toward lesbians versus attitudes toward gay men) and a between-subjects factor of participant sex (female versus male). Because the contents of the sexual prejudice subscale items diverged, participants' subscale raw scores were standardized prior to comparing them directly (for a similar procedure, see Herek, 1988). We then tested Hypotheses 1a and 1b using a between-subjects ANOVA with E-contact condition, participant sex, and interaction partner sex as independent variables, and sexual prejudice,[1] intergroup anxiety, and outgroup avoidance as separate outcome variables. For the sake of simplicity, we refer to E-contact with a heterosexual interaction partner as the control condition and E-contact with a homosexual interaction partner as the E-contact condition.

Finally, we tested Hypotheses 2a and 2b by conducting conditional process analyses that employed intergroup anxiety scores as the mediating variable, and sexual prejudice and outgroup avoidance scores as separate dependent variables. The predicted model is displayed in Figure 1. Conditional process analysis is a regression-based analytical strategy that estimates the boundary conditions of mechanisms and makes statistical inferences about such contingent effects (Hayes, 2013). This strategy significantly improves on causal step approaches to mediation analysis (e.g., Baron & Kenny, 1986) as it directly quantifies the magnitude of a conditional indirect effect via a single inferential test rather than inferring its existence from a set of regression equations. For a detailed discussion of the advantages of conditional process analysis over causal step approaches, see Hayes (2013). Following the recommendations of Hayes (2018), this model was estimated using Model 11 of the PROCESS macro for SPSS with 10,000 samples and 95% bias-corrected bootstrap confidence intervals (CIs). The E-contact condition was coded such that control condition = 0 and E-contact condition = 1; participant and E-contact partner sex were coded such that female = 0 and male = 1. To formally test our hypothesis that the indirect effect of E-contact on sexual prejudice and outgroup avoidance via intergroup anxiety would be contingent on the sex of the participant and E-contact interaction partner, we estimated separate indices of moderated moderated mediation. For a detailed discussion of this index, see Hayes (2018).

Results

Preliminary Analyses

Correlations. The correlations among the outcome measures are displayed in Table 1. There was a strong and positive association between sexual prejudice and intergroup anxiety, and sexual prejudice and outgroup avoidance. There was also a moderate to strong positive association between intergroup anxiety and outgroup avoidance.

Sex Differences. The means and standard deviations for the outcome measures by participant sex are displayed in Table 1. Consistent with prior literature (e.g., Cragun & Sumerau, 2015; Herek, 1998, 2000; Kite & Whitley, 1996), we found that male participants reported more negative attitudes toward sexual minorities in general, more negative attitudes toward gay men, greater outgroup avoidance, and increased intergroup anxiety compared to female participants. No

[1] Although the sexual prejudice subscales were very strongly correlated (see Table 1), we conducted an additional analysis using standardized subscale scores as repeated measures in a mixed ANOVA. The influence of participant and E-contact partner sex on the E-contact effect was found to be similar across the subscales, all $ps > .05$. Consequently, we did not analyze these subscales further.

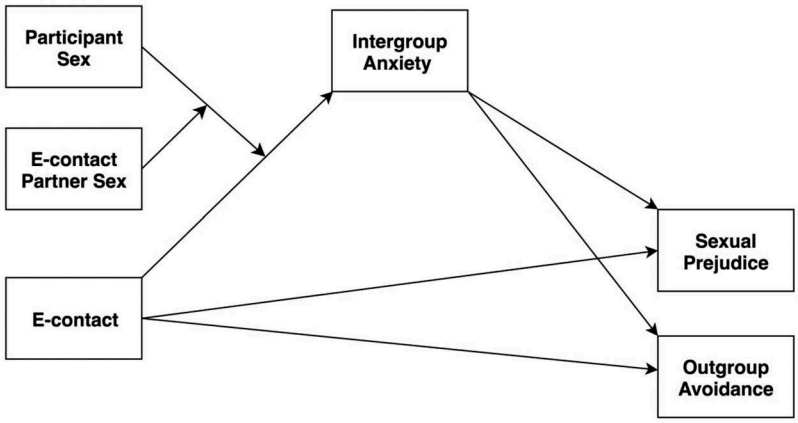

Figure 1. Theoretical representation of the path model tested in the current study.

Table 1. *Correlations and Descriptive Statistics of Outcome Measures by Participant Sex*

Measure	1.	2.	3.	4.	5.
1. ATLG	—				
2. ATL	.96**	—			
3. ATG	.98**	.89**	—		
4. Intergroup anxiety	.51**	.45**	.55**	—	
5. Outgroup avoidance	.58**	.54**	.60**	.39**	—
6. Participant sex[a]	.18*	.14	.21*	.21**	.34**
Women					
M (*SD*)	1.76 (0.82)	1.69 (0.80)	1.82 (0.88)	0.61 (1.23)	1.46 (0.79)
Men					
M (*SD*)	2.09 (0.98)	1.92 (0.87)	2.26 (1.13)	1.07 (1.23)	2.28 (1.44)

Note. ATLG = Attitude Toward Lesbians and Gay Men; ATL = Attitudes Toward Lesbians; ATG = Attitudes Toward Gay Men. Possible ranges were 1 to 6 for ATLG, ATL, and ATG; −6 to + 6 for intergroup anxiety; and 1 to 7 for outgroup avoidance (higher scores = greater prejudice, anxiety, and avoidance).

[a]Participant sex: 0 = female, 1 = male.

**$p < .001$; *$p < .05$.

participant sex differences were observed on attitudes toward lesbians. Corroborating these findings, we found that there was a significant interaction between participant's sex and the sexual prejudice subscale, F (1, 127) = 5.03, p = .027, η_p^2 = .04. Specifically, although female and male participants did not differ in their attitudes toward lesbians, F(1,127) = 2.15, p = .145, compared to female participants, male participants expressed more negative attitudes toward gay men, F (1, 127) = 6.43, p = .012, η_p^2 = .05.

The E-contact Effect and the Moderating Role of Sex

The descriptive statistics for the outcome measures by participant sex and experimental condition are displayed in Table 2. The inferential statistics and effect sizes by outcome measures are displayed in Table 3. We predicted that the E-contact effect would be contingent on participant and E-contact partner sex. Specifically, Hypothesis 1a stated that the E-contact effect would be stronger for heterosexual men when the interaction partner identified as a gay man, whereas Hypothesis 1b stated that heterosexual men would benefit more from E-contact when the interaction partner identified as a lesbian. A three-way interaction was found between E-contact condition, participant's sex, and interaction partner's sex for intergroup anxiety. For female participants, the E-contact effect on intergroup anxiety was not affected by the E-contact partner's sex, $F < 1$; however, for male participants, the E-contact effect on intergroup anxiety was dependent on the sex of the E-contact partner, F (1, 126) = 8.10, p = .005, η_p^2 = .06. In support of Hypothesis

Table 2. *Means (SD in Parentheses) of Outcome Variables by E-contact Condition, Participant Sex, and E-contact Partner Sex*

	Sexual Prejudice		Intergroup Anxiety		Outgroup Avoidance	
Sex Variables	**Control**	**E-Contact**	**Control**	**E-Contact**	**Control**	**E-Contact**
Female participant						
Female E-contact partner (n = 35)	1.66 (0.62)	1.90 (0.93)	0.66 (0.93)	0.78 (0.81)	1.52 (0.55)	1.18 (0.42)
Male E-contact partner (n = 39)	1.66 (0.67)	1.84 (1.06)	0.49 (0.84)	0.55 (1.13)	1.65 (0.97)	1.41 (1.03)
Male participant						
Female E-contact partner (n = 30)	2.41 (1.23)	1.98 (1.04)	1.70 (1.54)	0.40 (0.75)	2.89 (1.59)	2.02 (1.68)
Male E-contact partner (n = 36)	2.19 (0.94)	1.82 (0.68)	0.95 (1.13)	1.17 (1.12)	2.24 (1.43)	2.02 (1.03)

Note. E-contact condition: control = heterosexual E-contact partner; E-contact = homosexual E-contact partner. Possible ranges were 1 to 6 for sexual prejudice; −6 to + 6 for intergroup anxiety; and 1 to 7 for outgroup avoidance (higher scores = greater prejudice, anxiety, and avoidance).

Table 3. *Inferential Statistics and Effects Sizes From Analysis of Variance for Hypotheses 1a and 1b by Outcome Measure*

	Sexual Prejudice			Intergroup Anxiety			Outgroup Avoidance		
	F	p	η_p^2	F	p	η_p^2	F	p	η_p^2
E-contact condition (EC)	0.37	.545	<.01	1.52	.220	.01	4.46	.037	.03
Participant sex (PS)	4.47	.037	.03	5.69	.019	.04	18.76	<.001	.13
E-contact partner sex (EPS)	0.49	.486	<.01	0.27	.605	<.01	0.13	.718	<.01
EC × PS	3.85	.052	.03	2.95	.088	.02	0.42	.517	<.01
EC × EPS	<0.01	.998	<.01	3.89	.051	.03	0.90	.346	<.01
PS × EPS	0.26	.611	<.01	0.31	.576	<.01	1.67	.199	.01
EC × PS × EPS	0.04	.840	<.01	4.59	.034	.04	0.47	.492	<.01

1b, male participants who interacted with a female E-contact partner reported significantly lower intergroup anxiety when the E-contact partner was a lesbian, relative to control, F (1, 126) = 10.92, p = .001, η_p^2 = .08. Conversely, contrary to Hypothesis 1a, when male participants interacted with a male E-contact partner, there was no difference in intergroup anxiety when the E-contact partner was a gay man, relative to control, F < 1.

To probe this further, we conducted three planned contrasts with Bonferroni corrections to minimize Type I error (adjusted alpha = .05/3 = .017). First, male participants who interacted with a lesbian E-contact partner reported significantly lower intergroup anxiety (M = 0.40, SD = 0.75) compared to male participants in the control conditions (i.e., the average intergroup anxiety reported by male participants who interacted with either a heterosexual female or male E-contact partner; M = 1.29, SD = 1.36), t (126) = 2.74, p = .007. Second, intergroup anxiety did not differ significantly between male participants who interacted with a gay E-contact partner (M = 1.17, SD = 1.12) and male participants in the control conditions (i.e., the average intergroup anxiety reported by male participants who interacted with either a heterosexual female or male E-contact partner; M = 1.29, SD = 1.36), t < 1. Third, intergroup anxiety did not differ significantly between male participants who interacted with a lesbian E-contact partner (M = 0.40, SD = 0.75) and female participants (i.e., the average intergroup anxiety reported by all female participants in the study; M = 0.61, SD = 0.92), t < 1. Taken together, on the measure of intergroup anxiety, we found no evidence to support the prediction that heterosexual men would benefit more from E-contact when the interaction partner identified as a gay man (Hypothesis 1a), but we did find support for the prediction that heterosexual men would benefit more from E-contact when the interaction partner identified as a lesbian (Hypothesis 1b).

Conversely, however, the three-way interactions between E-contact condition, participant sex, and interaction partner sex on sexual prejudice and outgroup avoidance were not statistically significant (see Table 3). Contrary to Hypotheses 1a and 1b, although the E-contact effect on reduced sexual prejudice was marginally stronger for male participants than female participants, this effect was not influenced by the sex of the E-contact partner. That is, participant sex differences in sexual prejudice were observed only in the control condition, regardless of the E-contact partner's sex, with men reporting more sexual prejudice, F (1, 127) = 8.58, p = .004, η_p^2 = .06, and not in the E-contact condition, F < 1. Moreover, contrary to Hypotheses 1a and 1b, although participants in the E-contact condition reported reduced outgroup avoidance relative to the control condition, this effect was not influenced by participant and E-contact partner sex (see Table 3).

The Mediating Role of Intergroup Anxiety

We predicted that the mediating role of intergroup anxiety would be contingent on participant and E-contact partner sex.

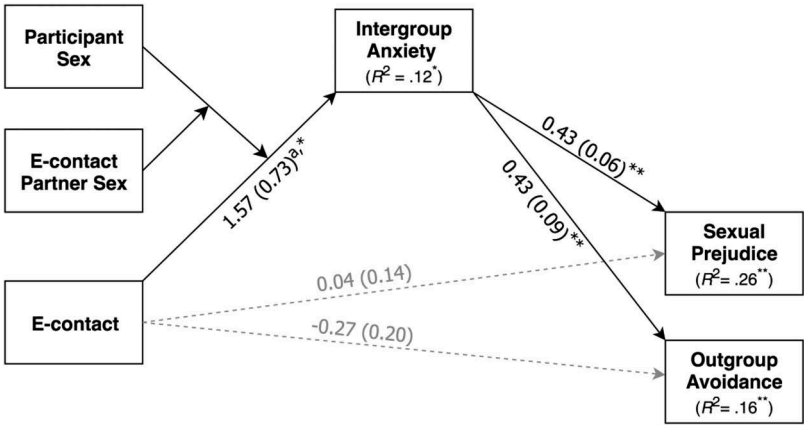

Figure 2. Estimated path model tested in the current study. Numbers on paths represent unstandardized regression coefficients (SE in parentheses). [a]Regression weight represents three-way interaction between E-contact condition, participant sex, and E-contact partner sex; $^{**}p < .001$; $^{*}p < .05$.

Specifically, whereas Hypothesis 2a stated that intergroup anxiety would be a stronger mediator of the E-contact effect for heterosexual men when the interaction partner identified as a gay man, Hypothesis 2b stated that this mediational effect would be stronger for heterosexual men when the interaction partner identified as a lesbian. As displayed in Figure 2, there was a significant three-way interaction between E-contact condition, participant sex, and E-contact partner sex on intergroup anxiety in the first stage of the model (i.e., the direct effect of E-contact on intergroup anxiety). In the second stage of the model (i.e., the direct effect of intergroup anxiety on sexual prejudice or outgroup avoidance), intergroup anxiety was a significant predictor of sexual prejudice and outgroup avoidance. There was also no significant direct effect of E-contact on sexual prejudice or outgroup avoidance. Moreover, the model explained a moderate amount of the variance in intergroup anxiety and outgroup avoidance, and a large proportion of the variance in sexual prejudice.

Importantly, we found evidence of moderated moderated mediation on both sexual prejudice, $b = 0.59$, 95% CI [0.02, 1.35], and outgroup avoidance, $b = 0.60$, 95% CI [0.01, 1.46].

Table 4. *Conditional Indirect Effects of E-contact on Sexual Prejudice and Outgroup Avoidance via Intergroup Anxiety*

	Sexual Prejudice		Outgroup Avoidance	
Moderators	***b***	**95% CI**	***b***	**95% CI**
Female participants				
Female E-contact partner	0.06	[−0.19, 0.33]	0.05	[−0.20, 0.34]
Male E-contact partner	0.02	[−0.21, 0.43]	0.10	[−0.16, 0.47]
Male participants				
Female E-contact partner	**−0.50**	**[−1.03, −0.12]**	**−0.56**	**[−1.13, −0.15]**
Male E-contact partner	0.06	[−0.26, 0.38]	0.09	[−0.22, 0.44]

Note. E-contact partner sexuality: 0 = heterosexual, 1 = homosexual. Indirect effects are unstandardized. Bolded effects are significant. CI = confidence interval.

Consistent with the findings described previously, for female participants, the indirect E-contact effect via intergroup anxiety on sexual prejudice, $b = -0.03$, 95% CI [−0.37, 0.43], and outgroup avoidance, $b = -0.03$, 95% CI [−0.33, 0.48], was not dependent on the sex of the E-contact partner. In fact, there was no evidence to support an indirect E-contact effect on either outcome measure for female participants who interacted with either a lesbian or gay man, relative to the control condition (see Table 4). For male participants, however, the indirect E-contact via intergroup anxiety on sexual prejudice, $b = 0.56$, 95% CI [0.10, 1.23], and outgroup avoidance, $b = 0.65$, 95% CI [0.17, 1.37], was contingent on the sex of the E-contact partner. In support of Hypothesis 2b and contrary to Hypothesis 2a, we found that, among male participants, E-contact indirectly reduced both outcome variables via reductions in intergroup anxiety when the E-contact partner identified as a lesbian, relative to control, but not when the E-contact partner identified as a gay man, relative to control (see Table 4).

Discussion

This is the first study to investigate E-contact as a strategy to improve sexual minority relations and the first to simultaneously consider the role of participant and interaction partner sex in the contact–prejudice relationship. Overall, the study demonstrated that interacting online with a female, as opposed to a male, homosexual E-contact partner reduced heterosexual men's feelings of intergroup anxiety, which in turn was associated with lower sexual prejudice and outgroup avoidance. For heterosexual women, however, E-contact did not influence their sexual prejudice, intergroup anxiety, or outgroup avoidance. Together, these findings provided support for Hypotheses 1a and 2a over Hypotheses 1b and 2b.

When examining the confluence of participant and interaction partner sex on the E-contact effect, the findings demonstrated an overall positive E-contact effect on reduced homonegative behavioral intentions. Although this effect was neither influenced by the sex of the participant or E-contact

partner, it is consistent with the broader literature in support of E-contact as a strategy for promoting positive intergroup relations, which, to date, has been demonstrated only among religious (e.g., White & Abu-Rayya, 2012; White et al., in press) and ethnic (e.g., Abu-Rayya, 2017) groups. On the measure of sexual prejudice, the results indicated that effect of E-contact on reduced homonegative attitudes was marginally stronger for men relative to women. Although men in the current study reported more negative attitudes toward lesbians and gay men than women did, the findings also demonstrated that these sex differences disappeared when participants interacted online with a sexual minority E-contact partner. Although this effect was not dependent on the sex of the sexual minority E-contact partner, it suggests that E-contact may serve to directly attenuate the sex differences in homonegative attitudes, regardless of whether the E-contact partner is a lesbian or a gay man. As described previously, because heterosexual men endorse beliefs relevant to sexual minorities that are typically more intolerant (Herek, 1988, 2000; Kite & Whitley, 1996; Whitley, 2001; Whitley & Ægisdóttir, 2000) and report fewer sexual minority contact experiences (Herek & Glunt, 1993), they may have the most to gain from positive contact with lesbians or gay men (Hodson, 2011). By providing men with the opportunity to meet a member of the outgroup in a pleasant, collaborative, and goal-oriented interaction, intergroup contact may challenge their initial intolerant beliefs about sexual minorities and, in doing so, allow for positive attitude change.

On the measure of intergroup anxiety we found that men who interacted online with an E-contact partner who identified as lesbian—as opposed to a gay man—reported a significant reduction in their feelings of intergroup anxiety toward sexual minorities compared to men in the control condition. Moreover, this reduction in men's intergroup anxiety was related to lower sexual prejudice and outgroup avoidance. These findings are consistent with the idea that men's evaluations of sexual minorities are highly sensitive to situational cues. For many heterosexual men, interacting with a lesbian contact partner may not activate the relevant self-schemas that typically require them to affirm their masculinity by rejecting homosexuality (Herek, 2000; Herek & Capitanio, 1999) and may in reality elicit positive thoughts about female sexual minorities (Louderback & Whitley, 1997). During the interaction, men are therefore able to focus their efforts on cooperating with their interaction partners to successfully achieve a common goal, rather than proving their masculine gender identity. Prioritizing the goals of the interaction over satisfying identity needs may work to ease men's intergroup anxiety and, in turn, reduce their sexual minority prejudice and improve their behavioral intentions.

Implicit in this explanation, however, is the complementary finding that being primed with male homosexuality increases negativity toward sexual minorities among heterosexual men (Herek, 2000; Herek & Capitanio, 1999). Remarkably, the current findings do not support this. When the E-contact partner identified as a gay man, men's feelings of intergroup anxiety did not differ significantly from those in the control condition, which in turn, did not account for changes in their sexual prejudice and outgroup avoidance. One of the many benefits of E-contact, particularly structured and text-only synchronous online interactions, is its ability to conceal subtle cues that often lead to increased stereotyping during face-to-face interactions (Amichai-Hamburger & McKenna, 2006). As a result, E-contact with a gay man may weaken the activation of sex- and sexuality-related schemas that often motivate heterosexual men to derogate and avoid sexual minorities. This explanation, however, is only tentative. Future research could compare the E-contact effect to that of direct contact. Relative to text-based online interactions, face-to-face encounters with the outgroup increase the visibility of group differences, particularly if the outgroup member confirms group stereotypes (e.g., a gay man who acts effeminately; Blashill & Powlishta, 2009). Paired with decreased perceptions of psychological control (e.g., having to respond on the spot), the situational features inherent in direct contact may have the unintended effect of increasing intergroup bias for heterosexual men when the interaction partner identifies as a gay man.

Finally, the findings suggested that intergroup anxiety is an important affective mechanism underlying the influence of participants' and interaction partners' sex on the E-contact effect. Here, men's reduced feelings of intergroup anxiety were found to mediate the E-contact effect on reduced sexual prejudice and outgroup avoidance, particularly when the E-contact partner identified as lesbian. This finding supports past research that has demonstrated that intergroup contact most effectively reduces prejudice among intolerant individuals by directly reducing intergroup anxiety (Lytle et al., 2017; West & Hewstone, 2012). In the context of sexual prejudice, a notable extension is that this mediation effect was not limited to a reduction in men's negative attitudes toward sexual minorities but also generalized to their behavioral avoidance tendencies. Although we did not measure participants' actual avoidance behaviors, and are therefore cautious to not overstate the findings, our results are consistent with White, Harvey, and Abu-Rayya's (2015) view of E-contact as a preparatory strategy for direct outgroup contact. Rather than being a stand-alone prejudice-reduction strategy, E-contact may be a valuable introduction to intergroup contact by reducing, particularly among heterosexual men, the reluctance to engage in future contact with the sexual minority outgroup.

Implications, Limitations, and Future Directions

Hodson (2011) argued that the value of a prejudice-reduction intervention should be judged "on its ability to generate positive outcomes among those principally needing remedy" (p. 158). In this regard, the current findings demonstrate that E-contact may be a valuable tool for reducing homonegative attitudes, emotions, and behavioral tendencies among heterosexual men. However, simply because E-contact is most effective for those requiring it most does not imply that it will occur of its own accord. It would not be unreasonable to expect individuals who

are prone to increased sexual prejudice, such as heterosexual men, to have fewer opportunities for intergroup contact, to be more unwilling to interact with the outgroup, and to actively avoid lesbians and gay men altogether. The current findings provide cross-sectional support for this prediction, as men reported a greater tendency to avoid sexual minorities relative to women.

Moreover, leaving (prejudice-prone) individuals to their own devices, without providing them with the impetus or opportunity for intergroup contact, may not be the most effective way to improve intergroup relations in the long term. In this regard, we contend that contact may be more valuable for highly intolerant people when administered as part of a programmatic intervention to reduce prejudice. For example, White and Abu-Rayya (2012) demonstrated the practicality of embedding E-contact into the classroom as a compulsory component of the school curriculum. By requiring all students in the same grade cohort to complete Web-based learning activities with an outgroup member, White and Abu-Rayya's E-contact intervention was able to provide all participants, regardless of their initial level of intolerance or avoidance, with the opportunity for intergroup contact. As described, this may be an important way of getting to know the outgroup and to reduce reticence to engage in future intergroup contact.

In contrast to the optimistic findings observed among heterosexual men, the current findings revealed that the E-contact effect on sexual prejudice might not exist among women. This result, however, is not entirely surprising. Compared to men, women typically endorse more tolerant beliefs about sexual minorities (Cragun & Sumerau, 2015; Kite & Whitley, 1996), as well as report greater prior contact experiences with lesbians and gay men (Herek & Capitanio, 1996), and so have less to gain from an additional outgroup encounter. Therefore, the potential for prejudice reduction rests, in part, in meeting an outgroup member in circumstances that are remarkable enough to improve women's (already positive) attitudes toward sexual minorities. However, this should not imply that women have nothing to gain from sexual minority contact. One potential avenue for future research is to examine the E-contact effect on prejudice toward bisexuality. Past research has found that heterosexual women report more negative attitudes toward bisexuals, irrespective of the sex of the target, than toward homosexuals (Herek, 2000; Herek & McLemore, 2013). In view of this, future intergroup contact research could investigate whether women would benefit more from contact when the interaction partner identified as bisexual than when they identified as homosexual.

One challenge to the contact hypothesis is whether the interaction partners are cognizant of each other's group membership. Without this awareness, the contact effects are unable to generalize beyond the immediate situation and transform into more positive attitudes toward the outgroup as a whole (Pettigrew & Tropp, 2006). This concern is particularly relevant to the case of sexual minority contact because, compared to other identities, such as ethnicity or race, sexuality is not readily discernable. Many lesbians and gay men do not routinely disclose, and even actively conceal, their sexual identity during intergroup interactions (Herek & McLemore, 2013). Although sexual minorities may use these strategies to avoid becoming the target of discrimination (Meyer & Northridge, 2007), identity concealment may significantly limit prejudice reduction (Herek & Capitanio, 1996; but see MacInnis et al., 2017). On the Internet, this is all the more problematic as it is particularly easy to remain anonymous, and hence, this may limit the practicality of E-contact .

To overcome the challenge of disclosure, the sexual minority E-contact partners in the current study were scripted to always disclose their sexual identity to their heterosexual counterparts. It should be acknowledged, however, that sexual identity of the minority E-contact partners was communicated by saying that she or he enjoyed "going to the movies with [their] girlfriend (boyfriend)." Although this statement might identify someone involved in a male–male relationship, it is unclear whether it would necessarily identify someone involved in a female–female relationship, given the common use of the word "girlfriend" to refer to a female friend. To address this limitation, future experimental research must ensure that the disclosure of sexual identity is less ambiguous. For example, the minority interaction partner could be scripted to communicate that she or he "is a proud lesbian woman (gay man)." Moreover, although the preprogrammed nature of the E-contact tool allowed for a more controlled and standardized test of the contact hypothesis, it may not accurately represent how often self-disclosure occurs in real, online environments, particularly among strangers. Nonetheless, Amichai-Hamburger and McKenna (2006) noted that one of the advantages of E-contact over direct contact is that it generally allows for greater disclosure and intimacy. On the Internet, feelings of anonymity, paired with decreased anxiety, may facilitate sexual identity disclosure during an intergroup exchange (White, Harvey, & Abu-Rayya, 2015). This hypothesis, however, requires empirical attention. Future research could examine when, with whom, and why sexual minorities disclose their sexual identity online in both inter- and intragroup contexts and evaluate its implications for the reduction of sexual prejudice and self-stigma.

Finally, the benefits of E-contact were observed after a single, brief online interaction with a member of the outgroup. Although an a priori power analysis determined that the study had sufficient power to test our hypotheses, we relied on a relatively small sample of university students who already endorsed quite positive attitudes and beliefs about lesbians and gay men. Moreover, based on the findings of previous E-contact research (e.g., White et al., in press), our power analysis assumed a medium effect size, which may have inadvertently failed to detect important associations with smaller effect sizes, which may potentially explain some of null effects. Having now established the basic sex-related boundary conditions for sexual minority contact, future research should consider investigating long-term benefits of E-contact among a larger, community sample. Moreover, past direct contact research has attested to the advantages of having multiple experiences with sexual

minority contact for prejudice reduction (Herek & Capitanio, 1996). In a similar vein, we contend that multiple sessions of E-contact (or E-contact as a prelude to a face-to-face interaction) with the outgroup would be most beneficial, particularly for prejudice-prone individuals. In the context of Christian–Muslim relations, White and her colleagues observed a significant reduction in prejudice at the conclusion of eight sessions of E-contact, which was maintained at six (White & Abu-Rayya, 2012) and 12 months (White, Abu-Rayya, & Weitzel, 2014) postintervention. This positive effect was significantly stronger for Muslims, who reported greater levels of preintervention prejudice compared to Christians (White & Abu-Rayya, 2012; White et al., 2014). Similar research is now needed to examine the longitudinal effects of multiple sessions of E-contact on sexual prejudice. As has been argued elsewhere (e.g., White, Harvey, & Verrelli, 2015), effective prejudice reduction requires a long-term approach to produce enduring attitude change among both individuals and institutions. Given the high accessibility, availability, and adaptability of computer-mediated technologies, E-contact appears to be a promising tool for improving the lives of sexual minorities.

Acknowledgments

We would like to thank Stephen Rogers for programming the E-contact program, and the associate editor and reviewers for their very helpful comments and suggestions on earlier drafts of this article.

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