

USING ONLINE INTERGROUP INTERACTIONS TO REDUCE NEGATIVE
ATTITUDES TOWARD LESBIANS AND GAY MEN

by

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A Thesis Submitted to the
Faculty of the Graduate School at
Middle Tennessee State University
in Partial Fulfillment
of the Requirements for the Degree of
Masters of Arts
in Industrial and Organizational Psychology

Middle Tennessee State University
August 2016

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ACKNOWLEDGEMENTS

First and foremost, I would like to thank my family for being the best source of support and encouragement I could have asked for during graduate school. Thank you for always inspiring me to be better, to continue learning, and to work hard. I'm forever grateful for you and I could have not done this without you. Thank you to my mom, Rocio Lopez, for making my days brighter with her fun spirit, kind heart, and humor. Thank you to my dad, Hugo Vacas, for bringing perspective and making me see things clearly during my most stressful moments. Thank you to my brother, Richard Vacas, for reminding me of my strengths, talents, and passions. Thank you to my fiancé, Heidi Beemer, for listening to me talk for hours about work, making all my heart's desires come true, and going with me on so many adventures.

Thank you to my advisor, Dr. Mark Frame, for unknowingly teaching me many educational, personal, and professional lessons. Thank you for all the insightful conversations, helping me acquire all the resources I needed to complete this study, and the continued support. Thank you to my committee members, Dr. Mike Hein and Dr. Rick Moffett for taking the time to give me valuable feedback throughout this thesis process. Thank you to Dr. Fuller for teaching me statistics, answering all my data questions, and guiding me through my thesis' statistical analyses. Lastly, thank you to all my research assistants for making data collection possible.

ABSTRACT

Extending previous research on the contact theory (Allport, 1954) and its effect on reducing negative attitudes toward lesbians and gay men (Grack and Richman, 1996; Graham, Frame, & Kenworthy, 2014), this study investigated online intergroup contact between homosexuals and heterosexuals to reduce negative attitudes toward lesbians and gay men, as measured by Herek's ATLG scale. Using structured scripts, confederates disclosed their sexual orientation as either homosexual or heterosexual during a 1-hour computer mediated interaction via a messaging platform with 86 participants at a large southeastern university. Overall, participants reported fairly favorable attitudes toward lesbians and gay men before and after the online intergroup contact. Results from hierarchical regression analysis indicated the online intergroup contact did not significantly reduce negative attitudes toward lesbians and gay men. Possible explanations for the findings and suggestions for future research are discussed.

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CHAPTER I: REVIEW OF LITERATURE

The organizational climate for lesbian, gay, bisexual, and transgender (LGBT) employees has changed dramatically over the past years. According to the 2016 Corporate Equality Index report, 93% of Fortune 500 organizations include sexual orientation in their non-discrimination policy and 75% include gender identity. In terms of health care benefits, 64% offer domestic partner benefits and 40% offer transgender-inclusive benefits (Human Rights Campaign, 2016a). Although much progress has been made in several organizations, LGBT employees still do not have fully-inclusive non-discrimination protection under federal law. Specifically sexual orientation and gender identity are not federally protected characteristics with regard to employment decisions. Indeed, even after the United States Supreme Court ruled that same-sex marriage is a constitutional right, two-thirds of LGBT Americans still reported facing workplace discrimination. Even worse, in more than half the states, it is legal to discriminate against job applicants and current employees based on sexual orientation and gender identity (Human Rights Campaign, 2016b).

LGBT Workplace Discrimination: Attitudes and Consequences

The effects of workplace discrimination are pervasive for LGBT employees' well-being. A recent study by Sabat, Lindsey, and King (2015) identified six stressors that particularly affect LGB employees (this study did not include transgender employees). The stressors included formal discrimination, interpersonal discrimination, stigma consciousness, internalized heterosexism, concealing, and social isolation. Formal discrimination refers to systematic and formal types of prejudice in regards to job

outcomes which, for example, may include denying promotions to LGBT employees. On the other hand, interpersonal discrimination deals with the negative social treatment that LGBT employees receive from their coworkers based on their sexual orientation or gender identity minority status. Stigma consciousness refers to the vigilance exerted by LGBT employees when interacting with coworkers. For example, an LGBT employee may be extremely cognizant of his or her stigmatized status when conversing with coworkers which may be cognitively taxing for the LGBT employee. Internalized heterosexism is when LGBT employees direct negative beliefs about their sexual orientation or gender identity toward the self. Concealing involves hiding one's sexual or gender identity whereas social isolation involves separating oneself from or being excluded from social interactions and meaningful relationships with coworkers. The detrimental effects of dealing with all these stressors include overall psychological distress, increased risk for mood and anxiety disorders, lower overall health, alcoholism and substance abuse, and increased risk of suicide (Carter, Mollen, & Smith, 2014; Sabat et al., 2015). Studies have shown that discriminated against LGBT employees do not tend to see decreases in discrimination over time (Kuyper, 2015).

Aside from negative consequences on an LGBT employee's well-being, negative work related outcomes are also an issue. A report by the Williams Institute on Sexual Orientation Law and Public Policy (2011) found that LGBT employees experienced discrimination (15-43%), reported losing a job opportunity or being fired (8-17%), received a negative performance evaluation or were passed over for a promotion (10-28%), and were verbally or physically abused (7-41%). Furthermore 12-30% of straight

coworkers reported being witnesses to workplace discrimination based on sexual orientation or gender identity (Burns & Krehely, 2011).

Those who suffer workplace discrimination tend to have negative job and career attitudes. Their decisions to pursue careers are based, in part, on the possibility of working in an industry or organization where prejudice and stereotyping is common. Studies have suggested that LGBT individuals choose careers based on prejudice-based segregation theories. That is, LGBT individuals pursue occupations, industries, and organizations that are forward thinking, inclusive, and fit their identities. Studies examining the relationship between sexual orientation and occupational segregation have postulated that gay men are more likely to work in female oriented and lower-ranked occupations when compared to other men. Whereas, lesbians are more likely to work in less female-oriented and higher-ranked occupations than other women (Plug, Webbink, & Martin, 2014). By focusing on aspects of the possibility of discrimination and harassment at work, LGBT individuals may even choose to conceal their identities.

LGBT employees engage in identity management at work in an effort to minimize or prevent workplace discrimination. Disclosure of sexual orientation and gender identity is a personal decision LGBT individuals have to make during their career (if not multiple times in their career). The degree to which an LGBT employee is “out” at work (i.e., disclosing one’s sexual orientation or gender identity) is related to higher levels of job satisfaction (Prati & Pietrantonio, 2014). Being out can signify having everyone or a few sub-groups of coworkers know about an LGBT employee’s sexual orientation or gender identity (Kaplan, 2014). However, depending on the organizational climate and the LGBT employee’s expectation of being discriminated against, being out at work may not

be an option. Concealing one's identity or staying "closeted" may involve switching pronouns when talking about significant others, altering dress attires to conform to gender norms, and even acting like ones' heterosexual coworkers. These types of behaviors lead to increased levels of stress (Kaplan, 2014). Moreover, LGBT individuals may worry about receiving lower pay rates, lacking benefits for partners, being fired for their sexual orientation or gender identity, and being passed over for promotions (Kaplan, 2014).

The negative consequences of discrimination not only affect LGBT employees but also organizations. The indirect benefits of diversity are missed when organizations tolerate or even promote discriminatory climates (Prati & Pietrantonio, 2014). Studies have shown that LGBT employees who are discriminated against engage in less productivity and have lower levels of job satisfaction. These effects also have negative consequences on organizations' financial measures. On the other hand, organizations with LGBT friendly policies and high scores on the Human Rights Campaign's Corporate Equality Index tend to see increases in stock market performance for the following year (Everly & Schwarz, 2014). The publicity of this results gives organizations a recruiting advantage to attract high quality talent, maintain an engaged workforce, and motivate productive performance.

Putting it all together, LGBT employees continue to suffer harassment, victimization, and discrimination at work based on their sexual orientation or gender identity. Studies have focused on the negative consequences of LGBT workplace discrimination on both the individuals and the organizations. Although it is important to assess the extent to which discrimination negatively impacts LGBT employees, a shift

toward examining strategies to change the workplace should be made. Interestingly, some researchers have examined ways to reduce negative attitudes toward LGBT employees.

Intergroup Contact Theory

Allport (1954) developed the intergroup contact theory as a means to reduce prejudice and stereotypes against racial and ethnic minorities. He formulated that intergroup contact, under optimal conditions, leads to a reduction in intergroup prejudice. The optimal conditions include: equal group status of both individuals, common goals requiring collaboration, intergroup cooperation void of interpersonal competition, and authoritative support (Allport, 1954; Pettigrew & Tropp, 2006). Over half a century of research on the intergroup contact theory have demonstrated that interpersonal contact, under these optimal conditions, effectively leads to reduction in negative attitudes toward various marginalized groups across different situations and societies (Allport, 1954; Pettigrew & Tropp, 2006; Pettigrew & Tropp, 2011). Additionally, different types of interventions including face-to-face contact (i.e., direct) and virtual contact (i.e., indirect) have been employed to test the effectiveness of intergroup contact theory (Lemmer & Wagner, 2015).

Face-to-face intergroup contact. Intergroup contact with a gay man or lesbian has emerged as a reliable antecedent to more favorable attitudes toward gay men and lesbians. Grack and Richman (1996) investigated the effects of intergroup contact in reducing negative attitudes toward lesbians and gay men. Using an experimental design, confederates acted as either homosexual or heterosexual and interacted face-to-face with participants in groups of four to six people working collaboratively to solve logic problems. Pre-encounter (8 weeks prior to the study) and post-encounter attitudes toward

lesbians and gay men were measured using the Gay and Lesbian Attitude Scale (GLAS). A total of 37 participants were divided between the experimental group (homosexual) and control group (heterosexual). At the conclusion of the intergroup interaction participants answered a questionnaire including measures of likeability, ability to work well with others, and ranking of members contribution to the group, as well as the GLAS. Results indicated a 17% reduction in negative attitudes toward gay men and lesbians in the experimental group whereas the control group showed a 2% decrease. The findings from this study showed support for the intergroup contact theory in reducing negative attitudes toward lesbians and gay men.

Extending the previous findings, Graham, Frame, and Kenworthy (2014) examined the effects of intergroup contact by using a balanced experimental design involving a structured role-play and cooperative face-to-face 1-hour interactions between one confederate and one participant. Pre-encounter (1-2 months prior to the study) and post-encounter negative attitudes toward lesbians and gay men were measured using the Attitudes Toward Lesbians and Gay Men Scale – Short Form (ATLG; Herek, 1984). During the face-to-face interaction, confederates disclosed their sexual orientation as either homosexual (experimental group) or heterosexual (control group). Participants were randomly assigned to one of the two conditions independent of their ATLG scores and invited to work on a “paired group problem-solving game”. Both participants and confederates worked collaboratively on three tasks including a “get to know you” task and two problem-solving tasks adapted from “Lost at Sea” (Nemiroff & Pasmore, 1975) and “Survival Crash Scenario” (University of California at Davis, Human Services, 2008). At the conclusion of the intergroup interaction participants answered a follow-up

42-item survey including a partner likeability scale, research participation scale, and distractor items, as well as the ATLG (Time-Two). Results of this study showed that contact with a gay man or lesbian reduced participants' negative attitudes toward lesbians and gay men from their reported ATLG Time-One scores. Also, a moderating effect was found such that participants who had more negative attitudes toward lesbians and gay men showed greater reduction in negative attitudes compared to those with more favorable attitudes. The findings from this study showed additional support for the strength of the intergroup contact theory in reducing negative attitudes toward lesbians and gay men.

Online intergroup contact. Technological advancements in communication have made it possible for people to interact virtually with members of their outgroup. Indeed, online intergroup contact allows for higher accessibility, lower anxiety inducing interactions, lower implementation costs, and lower physical risks (Alvídrez, Piñeiro-Naval, Marcos-Ramos, & Rojas-Solís, 2015). Furthermore, online intergroup contact may bring additional benefits that face-to-face contact may not offer such as anonymity, equality (e.g., nonverbal cues are not salient through online messaging which allow for equal status of individuals), high accessibility and availability, control over physical exposure, control over the interaction, ease of finding similar others, and fun. The degree to which these factors contribute to online intergroup interactions differs on the level of structure of the interaction. For example, *the peace factory* is a non-political organization that promotes peace in the Middle East by making connections between people through Facebook where they can communicate about resolving conflict (Amichai-Hamburger, Hasler, & Shani-Sherman 2015). Thus the use of online communication platforms such as

email and social media may help overcome the challenges of creating face-to-face intergroup contact that meets Allport's (1954) optimal conditions.

Recent research has examined the role of online intergroup contact for reducing prejudice and stereotypes toward different outgroups. Alvídrez et al. (2015) investigated the effects of computer mediated communication in online intergroup interactions between an ethnic majority (i.e., Spanish-born living in Spain) and an ethnic minority group (i.e., Ecuadoreans living in Spain). Participants were invited to work in an online task session as part of a six member virtual team (five Spanish students including the participant and the Ecuadorean student or confederate). The study used PISCO software (Moral-Toranzo, Canto-Ortiz, & Gómez-Jacinto, 2007), a program that employs automatic scripts with pre-recorded answers shown after a short delay to mimic team members' interactions. Four of the six participants were not real and the PISCO software allowed for synchronous responses by team members with text communication. The only real team members were the experimental participant and the confederate portraying the Ecuadorean team member. The online task session consisted of three stages including a get to know you activity, solving a puzzle task in record times, and a discussion phase where team members were paired to discuss a controversial topic in order to come to an agreement. At the conclusion of the study, participants filled out a post-test questionnaire.

This study manipulated salient ethnic group identity by either displaying Spanish and Ecuadorean flags or showing profile pictures of the participants in the control or non-salient ethnic group identity condition. In addition, confirming or disconfirming stereotypical behaviors were manipulated by having confederates display positive attributes (cheerful, sociable) and negative attributes (male chauvinist, religious

conservative) of the Ecuadorean ethnic minority group. Participants were randomly assigned to one of these four conditions. Results suggested that when participants were aware of the ethnic identities, disconfirmed stereotypical behavior reduced prejudice mediated by attraction to the outgroup member (Alvídrez et al., 2015).

Walther, Hoter, Ganayem, and Shonfeld (2014) examined the use of computer mediated communication to reduce intergroup prejudice among three different Israeli religious/cultural subgroups (religious Jews, secular Jews, and Arab Muslims).

Participants were college students of nine Israeli teachers colleges working collaboratively online as part of their “Advanced Educational Environments” course during a full academic year. Participants worked in multicultural groups of six members, completing online assignments that included chats, messaging, face-to-face meetings, and a conference. Prejudice toward religious/cultural groups were measured pre-course (before the online multicultural groups were formed) and post-course (at the conclusion of the academic year).

This controlled longitudinal field quasi-experiment used a control group that did not participate in the online course to serve as a benchmark group in terms of attitudes toward the three different religious groups. The control group was used to test whether the effects of the treatment, or online intergroup contact, was responsible for the change in attitudes. Participants also completed measures of religious identification, social identification with their group (i.e., to the online multicultural group), relational communication, and two types of interpersonal attraction (social and task). Results showed online intergroup contact over one academic year reduced intergroup prejudice toward Arabs and Jewish cultural/religious groups (Walther et al., 2014). The results of

this study differ from previously mentioned intergroup contact theory studies because of its longitudinal quasi-experimental methodology. The reduction of prejudice could be partially attributed to participants getting to know each other better over the academic year and forming bonds that a laboratory experiment does not permit.

Although online intergroup contact studies have demonstrated initial support for reducing intergroup prejudice and stereotypes, to the knowledge of the author, no study has investigated online intergroup contact between heterosexuals and homosexuals to reduce negative attitudes toward lesbians and gay men. The present study will investigate the effect that online intergroup contact between confederates playing the role of heterosexuals and homosexuals might have on reducing negative attitudes toward lesbians and gay men. The present study aims to extend the findings by Grack and Richman (1996) and Graham et al. (2014) in a controlled experimental setting, using structured role-plays, and online intergroup interactions via computer mediated communication (Google Hangouts Messenger) between one confederate and one participant. Thus, this study will examine whether 1-hour online intergroup contact between participants and confederates acting as self-disclosed homosexuals reduces negative attitudes toward lesbians and gay men. Online intergroup contact could allow for broader implementation across organizations seeking to reduce negative attitudes toward lesbians and gay men in the workplace.

Hypothesis 1. Online intergroup contact via computer mediated communication with a self-disclosed lesbian or gay man will reduce negative attitudes toward lesbians and gay men.

Pre and post measures of negative attitudes toward lesbians and gay men have been used in previous research to determine whether the intergroup contact had an effect in changing negative attitudes (Grack & Richman, 1996). Graham et al. (2014), in particular, showed a moderating effect such that participants with strong previously held negative attitudes toward lesbians and gay men showed more favorable attitudes toward the outgroup after the interaction.

Hypothesis 2. Prior attitudes toward lesbians and gay men will moderate the effects of online intergroup contact via computer mediated communication with a self-disclosed lesbian or gay man such that those with more negative attitudes will show a greater reduction in negative stereotypes than those with more favorable attitudes.

CHAPTER II: METHODS

Participants

Undergraduate students at a large southeastern university were recruited to participate in this two-part study (i.e., Time-One and Time-Two) through the university's *Psychology Research Pool Sona System* and by offering extra credit opportunities for advanced Psychology courses. In total, 197 participants completed the Time-One survey from which 3 participants were excluded due to inattentive responding. The final sample size for Time-One was 194. Of the remaining participants, 94 completed the Time-Two laboratory portion of the study yielding a 49% completion rate. Eight participants were then excluded because they reported being suspicious of the study/confederates. The final sample size for Time-Two was 86 and was based on 80% probability of detecting a partial R^2 of .1 for the independent variable.

Of the final 86 participants, 60 were female (69.8%) and 26 were male (30.2%); 25 reported their ethnicity as African American/Black (29.1%), 2 reported their ethnicity as Arab/Middle Eastern (2.3%), 4 reported their ethnicity as Asian/Asian American (4.7%), 43 reported their ethnicity as Caucasian/White (50%), 1 reported their ethnicity as Hawaiian/Pacific Islander (1.2%), and 8 reported their ethnicity as Multi-Racial (9.3%); and 71 expressed their sexual orientation as heterosexual (82.6%), 4 expressed their sexual orientation as gay (4.7%), 5 expressed their sexual orientation as lesbian (5.8%), 2 expressed their sexual orientation as bisexual (2.3%), and 4 expressed their sexual orientation as other (4.7%). Participants ranged in age from 18 to 56, with a mean age of 23 and median age of 21.

Measures

Attitudes Toward Lesbians and Gay Men scale (ATLG). Negative attitudes toward lesbians and gay men was measured using the Attitudes Toward Lesbians and Gay Men scale – Short form (ATLG; Herek, 1984). Questions used a 5-point Likert-type agreement scale (1 = strongly disagree and 5 = strongly agree). Higher scores on this scale indicated more negative attitudes toward lesbians and gay men. Overall attitude scores were calculated by adding all 10 items of this scale in order to create a continuous variable. An example item assessing negative attitudes toward gay men is, “I think male homosexuals are disgusting”. An example item assessing negative attitudes toward lesbians is, “Female homosexuality is a perversion”. Reliability for Time-One ATLG ($\alpha = .94$) was consistent with previous research which employed a two-part design, and higher for previously reported Time-Two ATLG (Graham et al., 2014; Time-One $\alpha = .91$, Time-Two $\alpha = .89$).

Design

This study was a two-part balanced experimental design. Attitudes toward lesbians and gay men were assessed at two times using the ATLG scale. Time-One was assessed as part of an online survey at the beginning of the semester. Participants accessed the survey through the *Psychology Research Pool Sona System* or through a link sent directly to their emails. Time-Two ATLG was assessed immediately after completion of the online intergroup contact in the form of an online survey. Both surveys were administered through Qualtrics, an online survey platform. On average, the time difference between both assessments was five weeks. Participants signed up for each part

of the study separately. After completion of Time-One assessment, participants were eligible and invited to participate in Time-Two.

The experimental design included two conditions: experimental group (homosexual condition) and control group (heterosexual condition) where confederates manipulated the disclosure of sexual orientation and gender. Participants were randomly assigned to either the experimental or control condition independent of their Time-One ATLG scores. The principal investigator, confederates, and the co-investigator were blind as to the Time-One ATLG scores because these were not computed until conclusion of the study after Time-Two ATLG scores were collected. This study used computer mediated communication in the form of Google Hangouts Messenger (GHM) to establish online intergroup contact between participants and confederates.

Procedure

Confederates were recruited and trained to portray different roles including sexual orientation, gender, and relationship status during the online intergroup interaction (i.e., online intergroup contact). Confederates received detailed instructions about the theory underlying this research study, the optimal conditions, the structured scripts, and the tasks to be completed during the online intergroup interaction to maximize consistency across conditions. The principal investigator tested training effectiveness by having confederates complete one mock online intergroup interaction using GHM prior to the beginning of the study. All confederates that followed the scripts correctly and portrayed conditions accurately were used for the study. Confederates were instructed to conduct the online intergroup interactions from a location of their choosing. That is, they were not located in the same room as participants.

A total of ten confederates assisted in the study and they were randomly assigned to all four conditions. Confederates were equally balanced in terms of gender (50% male and 50% female). The majority of confederates were Caucasian/White (60%) while other ethnicities included Asian (30%) and African American (10%). All confederates expressed their sexual orientation as heterosexual. Confederates ranged in age from 23 to 28.

As part of the balanced design, confederates varied their character's sexual orientation and gender through GHM during their online intergroup interaction. This resulted in a similar number of confederates portraying gay and lesbian sexual orientations and male and female genders. Participants either accessed Time-One assessment through the *Psychology Research Pool Sona System* or through a link sent directly to their emails. Participants read and indicated their informed consent electronically prior to beginning the assessment. As a qualifier, participants had to indicate they were eighteen years or older in order to participate in the study. After obtaining informed consent and meeting the age qualifier, participants were presented Time-One assessment which included Time-One ATLG scale, Time-One teamwork efficacy scale, HEXACO personality measure, and demographic questions (See Appendix A). Time-One assessment lasted approximately 30 minutes and counted toward 1 credit hour for research participation or extra credit for advanced Psychology courses.

Participants who completed Time-One assessment were eligible and invited, one to six at a time, to come to a laboratory and participate in a 1-hour "Virtual Team Study" (i.e., Time-Two assessment). The Time-Two assessment consisted of a 45-minute online intergroup interaction between participants and confederates as well as an online survey

that lasted approximately 15 minutes. An experimenter was present at the laboratory during all online intergroup interactions to facilitate the online contact, answer questions, direct participants to the link for the online survey, and debrief them at the conclusion of the 1-hour. As soon as participants entered the laboratory, the experimenter explained that their “virtual teammate” (i.e., confederate) was another university student located at a different laboratory. Computer mediated communication in the form of GHM was used to facilitate the “virtual teamwork” (i.e., online intergroup interaction). All participants were randomly assigned to conditions, confederates, and computers at the laboratory.

For the online intergroup contact, participants and confederates worked together on three tasks including a “get to know you task” and two problem solving tasks (See Appendix B). Based on the assigned condition, confederates overtly declared their character’s gender, sexual orientation, and relationship status during the “get to know you” task using structured scripts provided during training (See Appendix C). The purpose of expressing relationship status was to ensure the participants picked up on the sexual orientation disclosure. For example, confederates disclosed their sexual orientation through answering the question “If you were a color or a group of colors, what would you be and why?” Confederates in the homosexual condition responded by saying “I chose a rainbow because I’m gay/lesbian so I kind of identify with it”. Using relationship status, confederates in the homosexual condition answered the question “Are you in a romantic relationship?” by saying “yes” and indicating the name of their significant other indicating a homosexual relationship. Once all the “get to know you” questions were answered, participants started working together on the problem solving tasks.

The two problem solving tasks were adapted from “Lost at Sea” (Nemiroff & Pasmore, 1975) and “Survival Crash Scenario” (University of California at Davis, Human Services, 2008) to ensure participants engaged in an online intergroup interaction that featured the optimal conditions developed by Allport (1954). In particular, participants were given a context story explaining that their university wanted to expand their online course offerings and wanted to test whether students worked well together as virtual teams. This context story and the experimenter present in the laboratory during the online intergroup interaction were used as an effort to satisfy *institutional or authoritative support*. Prior to answering the “get to know you” questions, confederates started the interaction by asking questions regarding the participants’ major and school year. Using the participants’ answers, confederates mentioned being in the same major and year prompting the participants to believe the teammate pairing was based on similarities. This was used to create the impressions of *equal group status of both individuals*. The experimenter explained to the participants that the two problem solving tasks required them to work collaboratively, interdependently, and together to achieve common goals. This was also written on the packet the participants received for the online intergroup interaction. The purpose of this statement and set of instructions was to meet the optimal condition of *common goals requiring collaborative efforts and intergroup cooperation void of interpersonal competition*. Overall, the researcher believes three out of the four optimal conditions were satisfied. While *institutional support* did not communicate diversity and inclusion per se, *institutional support* was communicated for the task in which the participants engaged.

As part of Time-Two assessment, participants that finished the three tasks were instructed to complete an online survey to assess their virtual team experience.

Participants read and indicated their informed consent electronically prior to beginning the online survey. After obtaining informed consent, participants completed the online survey which included Time-Two ATLG scale, Time-Two teamwork efficacy scale, partner likeability scale, research participation scale, and demographic questions (See Appendix D). Time-Two assessment lasted approximately 60 minutes and counted toward 2 credit hours for research participation or extra credit for advanced Psychology courses.

At the conclusion of Time-Two assessment, participants were walked outside of the lab and debriefed by the experimenter as to the real nature of the study and the confederates' involvement (See Appendix E). In order to avoid demand characteristics, participants were asked questions regarding suspicion of the nature of the study or the confederates' involvement. Eight participants expressed feeling suspicion as to whether virtual teammates (i.e., confederates) were real people or computer created characters, suspected deception was used to hide the real nature of the study, or thought the study was about lesbians and gay men. These participants' data were flagged and excluded from the main analyses.

CHAPTER III: RESULTS

Hierarchical regression analysis was used to test the study hypotheses which stated: (1) online intergroup contact via computer mediated communication with a self-disclosed lesbian or gay man will reduce negative attitudes toward lesbians and gay men and (2) prior attitudes toward lesbians and gay men will moderate the effects of online intergroup contact via computer mediated communication with a self-disclosed lesbian or gay man such that those with more negative attitudes will show a greater reduction in negative stereotypes than those with more favorable attitudes. Overall ATLG scores were calculated for Time-One and Time-Two participants across all four conditions (Table 1).

Table 1
Descriptive Statistics for ATLG

Time-One ATLG	<i>M</i>	<i>SD</i>	Range	<i>n</i>
Heterosexual	2.42	1.11	1 – 5	45
Homosexual	2.61	1.16	1 – 5	41
Time-Two ATLG			1 – 5	
Heterosexual	2.36	1.10	1 – 5	45
Homosexual	2.41	1.06	1 – 5	41

Note. Higher ATLG scores indicate more negative attitudes.

ATLG = Attitudes Toward Lesbians and Gay Men - Short Form.

A three-step hierarchical regression was conducted to test the study hypotheses. The first step of the model included Time-One ATLG scores as well as confederate displayed gender during the interaction and participant gender as control variables. The confederate displayed sexual orientation during the interaction (heterosexual/homosexual) was regressed on Time-Two ATLG scores as the second step of the model. Results indicated the first step of the model with the control variables was

significant, predicting 88% of the variance in Time-Two ATLG scores, $F(3, 82) = 206.28, p < .001$. However, the addition of the displayed sexual orientation (heterosexual/homosexual) for step two of the model was not significant, $R^2 = .89$. Thus, the first hypothesis was not supported. That is, online intergroup contact via computer mediated communication with a self-disclosed lesbian or gay man did not reduce negative attitudes toward lesbians and gay men.

In order to test the second hypothesis, the product of Time-One ATLG scores and the displayed sexual orientation (heterosexual/homosexual) were entered in the third step of the regression model. Results were not significant, $R^2 = .89$, indicating no significant increase in variance accounted for in Time-Two ATLG scores. Thus, hypothesis 2 was also not supported. That is, Time-One ATLG scores did not moderate the effect of online intergroup contact via computer mediated communication with a self-disclosed lesbian or gay man such that participants with more negative attitudes showed a greater reduction in Time-Two ATLG scores.

In an effort to better understand the results, further analyses were conducted using a median split based on ATLG scores ($N = 48$). Specifically, participants' data with scores above the median for the ATL and ATG subscales were used to conduct hierarchical regressions and test the study hypotheses. Results showed no significant increase in variance accounted for in Time-Two ATLG scores when using the sample of participants with ATLG scores above the median. Thus, both study hypotheses were not supported. Overall, results indicated that participants with favorable and unfavorable ATLG scores prior to the online intergroup interaction showed no significant changes in Time-Two ATLG scores regardless of the condition they were randomly assigned to.

Even though the findings reported here were not significant, it is worth noting that over half of participants only completed Time-One ($N = 100$). In order to evaluate whether ATLG scores of these participants differed from those that returned to participate in Time-Two, their ATLG mean scores were compared. Time-One ATLG scores for this sample ($M = 2.62$) were slightly above the sample of participants who also completed Time-Two ($M = 2.51$), but the mean difference was marginal.

CHAPTER IV: DISCUSSION

This study sought to extend previous research to investigate online intergroup contact between homosexuals and heterosexuals to reduce negative attitudes toward lesbians and gay men. Although this study's hypotheses were not supported, results still add value to the investigation of online intergroup contact in reducing negative attitudes toward lesbians and gay men. It is possible that an effect was not found due to our exclusive reliance on computer mediated communication via a messaging platform (Google Hangouts Messenger; GHM). For this study, participants communicated with confederates by typing out their answers through GHM during the online intergroup contact.

Previous studies have demonstrated support for reducing negative attitudes toward ethnic and religious minorities between confederates and participants by using different components of computer mediated communication. In particular, Walther et al. (2014) had participants complete online assignments, chats, messaging, face-to-face meetings, and a conference. Alvidrez et al. (2015) used an online software that allowed for synchronous responses among six team members via text communication where the participant and confederate were real while the other four team members were computer generated. They also displayed flags or showed profile pictures of the team members to highlight ethnic group identity. Thus, it could be argued that in order for an effect to be found, face-to-face factors must be included in computer mediated communication.

Another explanation for our results involves our sample being uniquely different than other samples used in previous research. That is, our sample reported fairly favorable attitudes toward lesbians and gay men prior to the online intergroup contact.

Previous studies have demonstrated a reduction in negative attitudes among participants with strong negative attitudes prior to the intergroup interaction, while those reporting more favorable attitudes did not show a similar reduction (Graham et al., 2014). In an effort to further explore this reasoning, ATLG mean scores were compared across studies where the average score is 2.5 and high scores indicate more negative attitudes.

For this study, ATLG mean scores were close to the average and not significantly different across conditions (heterosexual condition, $M = 2.42$; homosexual condition, $M = 2.61$). However, Graham et al. (2014) reported higher initial ATLG mean scores across conditions (heterosexual condition, $M = 3.15$; homosexual condition, $M = 2.97$). Other studies calculated overall ATLG mean scores for their samples since they did not have experimental conditions. Kissinger, Lee, Twitty, and Kisner (2009) reported high ATLG mean scores among future mental health professionals ($M = 3.41$). Whereas Papadaki, Plotnikof, Gioumidou, Zisimou, and Papadaki (2015) reported favorable ATLG mean scores among psychology, social work, medical, and nursing students in Greece ($M = 2.04$, $M = 2.24$, $M = 2.29$, and $M = 2.61$, respectively). Thus, it could be argued that differences in ATLG mean scores are a product of the sample being used and that our sample was unique in their overall attitudes (or at least their reporting of their attitudes).

Lastly, it is possible that the present results are indicative of a floor/ceiling effect on explicit attitudes in today's university students. This could be a reason for not detecting an attitude change to the sexual orientation manipulation. Perhaps, samples from previous studies may have included participants with extreme negative attitudes whose attitude change created a significant difference. If this is true, then implicit attitude

measures may be sensitive to the sexual orientation manipulation and may aid in finding a true effect.

Limitations

Similar to previous studies, this study has some limitations. First, the participants recruited for this study were undergraduate students from one university and their attitudes toward lesbians and gay men may not be representative of the population at large. Additionally, even though we measured attitudes toward lesbians and gay men at two points in time (average time lapse = five weeks), more conclusive and significant findings may be achieved by using a longer term longitudinal design that might examine changing attitudes across a longer period of time. Second, our study did not incorporate face-to-face factors during the online intergroup contact via GHM. The exclusive reliance on communication via this messaging platform may have hindered our efforts in finding a true effect. Lastly, our final sample size ($N = 86$) was slightly above the minimum required based on 80% probability of detecting a partial R^2 of .1. A larger sample size in conjunction with a longitudinal design could have increased our efforts to detect a reduction in negative attitudes toward lesbians and gay men.

Future Research

The present study was an initial investigation of online intergroup contact between homosexuals and heterosexuals to reduce negative attitudes toward lesbians and gay men using computer mediated communication via a messaging platform. Future research could replicate and extend this study by incorporating face-to-face factors to the computer mediated communication design. Specifically, the use of video communication platforms such as Skype could increase the saliency of the intergroup contact. Previous

findings have provided support for the effectiveness of this approach with ethnic and religious minorities (Alvídrez et al., 2015; Walther et al., 2014) and could be worth exploring with lesbians and gay men as the out group members.

Additional research could extend this study design by including other LGBT marginalized groups such as transgender, bisexual, or gender non-confirming individuals. It may be interesting to investigate whether contact theory interventions of this type are effective at reducing negative attitudes toward these out group members.

Conclusion

As the workplace is becoming increasingly more diverse, organizations need to adapt their diversity training efforts to ensure a fully-inclusive and productive climate for their employees. The present study suggests that interventions seeking to reduce negative attitudes toward lesbians and gay men using computer mediated communication should incorporate face-to-face factors. For example, web-based training programs should include videos and/or pictures in addition to narratives and learning exercises. Therefore, organizations may use these findings to design intervention strategies for reducing negative attitudes and prejudice toward lesbian and gay employees. In addition, organizations may even extend their intervention strategies to include other marginalized LGBT employees such as bisexual and transgender individuals. Doing so will allow for broader implementation across organizations seeking to reduce negative attitudes and prejudice toward different groups of employees.

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APPENDICES

APPENDIX A: Time-One: Informed Consent and Online Survey

Middle Tennessee State University Institutional Review Board
Informed Consent Document for Research

Principal Investigators: Sofia Vacas and Dr. Mark Frame

Study Title: Virtual Team Study

Institution: Middle Tennessee State University

Technology and Communication: How Do You Rate Performance?

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below. You will be given an opportunity to ask questions, and your questions will be answered.

Your participation in this research study is voluntary. You are also free to withdraw from this study at any time. In the event new information becomes available that may affect the risks or benefits associated with this research study or your willingness to participate in it, you will be notified so that you can make an informed decision whether or not to continue your participation in this study.

For additional information about giving consent or your rights as a participant in this study, please feel free to contact the MTSU Office of Compliance at (615) 494-8918.

Purpose of the study:

The purpose of this study is to investigate virtual team interaction via messaging, how virtual team members come to an agreement, and attitudes toward virtual team members.

This is an online study that will award 1 credit hour of research participation. The study involves taking an online survey that will provide us with information regarding your preferences, background, and experience regarding working virtually.

Description of procedures to be followed and approximate duration of the study:

As a voluntary participant in this study, you will be asked to take an online survey that will take approximately 30 minutes to complete.

Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:

There are little to no known or expected risks/discomforts for participants volunteering in this study.

Anticipated benefits from this study:

All participants will benefit from the experience of helping develop scientific research in the field of Industrial/Organizational Psychology at Middle Tennessee State University.

Alternative treatments available:

Participants who wish to receive required research credits, but do not choose to participate in this study, may read and summarize an article found in the Science Learning Center per their course requirements and the Middle Tennessee State Department of Psychology policy. The time required to write the article summary will be proportionate with the time required to participate in the proposed study.

Compensation for participation:

Participants who are required to complete research as part of course requirements will receive one (1) research credit for participating in the proposed study. Other adults (non-students) will be invited to participate in the study, but no direct compensation will be offered for participation.

What happens if you choose to withdraw from study participation:

You may refuse to participate or quit at any time. If you quit or refuse to participate, the benefits to which you are otherwise entitled will not be affected.

Contact Information

If you should have any questions about this research study or possible injury, please feel free to contact Dr. Mark C. Frame at (615) 898-2565 or Sofia Vacas at (703) 763-9652. You may call the MTSU IRB Compliance Officer at (615) 898-8918 for any questions you may have about your rights as a research participant.

Confidentiality

Every attempt will be made to see that your study results are kept confidential. A copy of the records from this study will be securely stored in the Department of Psychology for at least three (3) years after the end of this research. The results of this study may be published and/or presented at meetings without naming you as a subject. Although your rights and privacy will be maintained, the Secretary of the Department of Health and Human Services, the MTSU IRB, and personnel particular to this research (Dr. Mark C. Frame and Sofia Vacas) have access to the study records. Your responses, informed consent document, and records will be kept completely confidential according to current legal requirements. They will not be revealed unless required by law, or as noted above.

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY

I have read and understand the above consent form. By choosing the "I wish to participate in this study" option, I indicate my willingness to voluntarily take part in the study.

(If you do not wish to participate in the research study, please decline participation by choosing the "I do not wish to participate in this study" option.)

- I wish to participate in this study
- I do not wish to participate in this study

QUALIFIER QUESTION

Are you over 18 years of age?

- Yes
- No

BEGINNING OF SURVEY

Please answer the following questions openly and honestly, there are no right or wrong answers.

1. How familiar are you with instant messengers such as Google Hangouts Messenger?
 - a. Not at all familiar
 - b. Slightly familiar
 - c. Somewhat familiar
 - d. Moderately familiar
 - e. Extremely familiar

2. How often do you use instant messengers such as Google Hangouts Messenger?
 - a. Never
 - b. Rarely
 - c. Occasionally/Sometimes
 - d. Almost every time

Please answer the following questions openly and honestly, there are no right or wrong answers. Use the following scale when answering the questions (1 = *strongly disagree* and 5 = *strongly agree*).

ATLG		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I think male homosexuals are disgusting	<input type="checkbox"/>				
2.	Male homosexuality is a perversion.	<input type="checkbox"/>				
3.	Male homosexuality is a natural expression of sexuality in men.	<input type="checkbox"/>				
4.	Sex between two men is just plain wrong	<input type="checkbox"/>				
5.	Male homosexuality is merely a different kind of lifestyle that should not be condemned.	<input type="checkbox"/>				
6.	I think lesbians are disgusting.	<input type="checkbox"/>				
7.	Female homosexuality is a perversion.	<input type="checkbox"/>				
8.	Female homosexuality is a natural expression of sexuality in women	<input type="checkbox"/>				
9.	Sex between two women is just plain wrong.	<input type="checkbox"/>				
10.	Female homosexuality is merely a different kind of lifestyle that should not be condemned.	<input type="checkbox"/>				

TEAMWORK EFFICACY		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11.	I feel confident in my team's ability to perform well as a virtual team.	<input type="checkbox"/>				
12.	I think my team can eventually reach a high level of performance as a virtual team.	<input type="checkbox"/>				
13.	I am sure my team can learn how to perform as a virtual team effectively in a relatively short period of time.	<input type="checkbox"/>				
14.	I don't feel that my team is as capable of performing as a virtual team.	<input type="checkbox"/>				
15.	On the average, other teams are probably much more capable of performing as a virtual team than my team.	<input type="checkbox"/>				
16.	My team will learn to work as a virtual team quickly, in comparison to other teams.	<input type="checkbox"/>				
17.	I am not sure my team can ever reach a high level of performance as a virtual team.	<input type="checkbox"/>				
18.	It would take my team a long time to learn how to perform as a virtual team effectively.	<input type="checkbox"/>				
19.	I am not confident that my team can perform as a virtual team effectively.	<input type="checkbox"/>				
20.	I doubt that my virtual team's performance will be very adequate.	<input type="checkbox"/>				

HEXACO		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I would be quite bored by a visit to an art gallery.	<input type="checkbox"/>				
2.	I plan ahead and organize things, to avoid scrambling at the last minute.	<input type="checkbox"/>				
3.	I rarely hold a grudge, even against people who have badly wronged me.	<input type="checkbox"/>				
4.	I feel reasonably satisfied with myself overall.	<input type="checkbox"/>				
5.	I would feel afraid if I had to travel in bad weather conditions.	<input type="checkbox"/>				
6.	I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.	<input type="checkbox"/>				

7.	I'm interested in learning about the history and politics of other countries.	<input type="checkbox"/>				
8.	I often push myself very hard when trying to achieve a goal.	<input type="checkbox"/>				
9.	People sometimes tell me that I am too critical of others.	<input type="checkbox"/>				
10.	I rarely express my opinions in group meetings.	<input type="checkbox"/>				
11.	I sometimes can't help worrying about little things.	<input type="checkbox"/>				
12.	If I knew that I could never get caught, I would be willing to steal a million dollars.	<input type="checkbox"/>				
13.	I would enjoy creating a work of art, such as a novel, a song, or a painting.	<input type="checkbox"/>				
14.	When working on something, I don't pay much attention to small details.	<input type="checkbox"/>				
15.	People sometimes tell me that I'm too stubborn.	<input type="checkbox"/>				
16.	I prefer jobs that involve active social interaction to those that involve working alone.	<input type="checkbox"/>				
17.	When I suffer from a painful experience, I need someone to make me feel comfortable.	<input type="checkbox"/>				
18.	Having a lot of money is not especially important to me.	<input type="checkbox"/>				
19.	I think that paying attention to radical ideas is a waste of time.	<input type="checkbox"/>				
20.	I make decisions based on the feeling of the moment rather than on careful thought.	<input type="checkbox"/>				
21.	People think of me as someone who has a quick temper.	<input type="checkbox"/>				
22.	On most days, I feel cheerful and optimistic.	<input type="checkbox"/>				
23.	I feel like crying when I see other people crying.	<input type="checkbox"/>				
24.	I think that I am entitled to more respect than the average person is.	<input type="checkbox"/>				
25.	If I had the opportunity, I would like to attend a classical music concert.	<input type="checkbox"/>				
26.	When working, I sometimes have difficulties due to being disorganized.	<input type="checkbox"/>				
27.	My attitude toward people who have treated me badly is "forgive and forget".	<input type="checkbox"/>				
28.	I feel that I am an unpopular person.	<input type="checkbox"/>				
29.	When it comes to physical danger, I am very fearful.	<input type="checkbox"/>				
30.	If I want something from someone, I will laugh at that person's worst jokes.	<input type="checkbox"/>				

31.	I've never really enjoyed looking through an encyclopedia.	<input type="checkbox"/>				
32.	I do only the minimum amount of work needed to get by.	<input type="checkbox"/>				
33.	I tend to be lenient in judging other people.	<input type="checkbox"/>				
34.	In social situations, I'm usually the one who makes the first move.	<input type="checkbox"/>				
35.	I worry a lot less than most people do.	<input type="checkbox"/>				
36.	I would never accept a bribe, even if it were very large.	<input type="checkbox"/>				
37.	People have often told me that I have a good imagination.	<input type="checkbox"/>				
38.	I always try to be accurate in my work, even at the expense of time.	<input type="checkbox"/>				
39.	I am usually quite flexible in my opinions when people disagree with me.	<input type="checkbox"/>				
40.	The first thing that I always do in a new place is to make friends.	<input type="checkbox"/>				
41.	I can handle difficult situations without needing emotional support from anyone else.	<input type="checkbox"/>				
42.	I would get a lot of pleasure from owning expensive luxury goods.	<input type="checkbox"/>				
43.	I like people who have unconventional views.	<input type="checkbox"/>				
44.	I make a lot of mistakes because I don't think before I act.	<input type="checkbox"/>				
45.	Most people tend to get angry more quickly than I do.	<input type="checkbox"/>				
46.	Most people are more upbeat and dynamic than I generally am.	<input type="checkbox"/>				
47.	I feel strong emotions when someone close to me is going away for a long time.	<input type="checkbox"/>				
48.	I want people to know that I am an important person of high status.	<input type="checkbox"/>				
49.	I don't think of myself as the artistic or creative type.	<input type="checkbox"/>				
50.	People often call me a perfectionist.	<input type="checkbox"/>				
51.	Even when people make a lot of mistakes, I rarely say anything negative.	<input type="checkbox"/>				
52.	I sometimes feel that I am a worthless person.	<input type="checkbox"/>				
53.	Even in an emergency I wouldn't feel like panicking.	<input type="checkbox"/>				
54.	I wouldn't pretend to like someone just to get that person to do favors for me.	<input type="checkbox"/>				
55.	I find it boring to discuss philosophy.	<input type="checkbox"/>				

56.	I prefer to do whatever comes to mind, rather than stick to a plan.	<input type="checkbox"/>				
57.	When people tell me that I'm wrong, my first reaction is to argue with them.	<input type="checkbox"/>				
58.	When I'm in a group of people, I'm often the one who speaks on behalf of the group.	<input type="checkbox"/>				
59.	I remain unemotional even in situations where most people get very sentimental.	<input type="checkbox"/>				
60.	I'd be tempted to use counterfeit money, if I were sure I could get away with it.	<input type="checkbox"/>				

DEMOGRAPHICS

Please answer the following questions openly and honestly, there are no right or wrong answers.

1. Please indicate which gender you identify most with:
 - a. Male
 - b. Female
 - c. Transgender male
 - d. Transgender female
 - e. Other: _____

2. Please indicate the ethnicity you identify most with:
 - a. African American/Black
 - b. American Indian/Alaskan Native
 - c. Arab/Middle Eastern
 - d. Asian/Asian American
 - e. Caucasian/White
 - f. Hawaiian/Pacific Islander
 - g. Hispanic/Latino
 - h. Multi-Racial
 - i. Other: _____

3. Please indicate the sexual orientation you identify most with:
 - a. Heterosexual (or straight)
 - b. Gay
 - c. Lesbian
 - d. Bisexual
 - e. Other: _____

4. Please state your birth year: _____

5. What is your academic standing?
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
 - e. Graduate/Advanced
 - f. Other: _____

6. What is/are your current major(s): _____

CREDIT QUESTIONS

In order to make sure that you get credit for taking this survey, please provide the following information.

Name: _____

M Number: _____

MTSU Email address: _____

We thank you for your time taking this survey. Your response has been recorded.

END OF SURVEY

APPENDIX B: Virtual Team Study Tasks

PLEASE READ

Welcome to our virtual team study!

MTSU wants to expand its online courses. This will be very beneficial to students because more online courses mean more flexibility and options to choose from. Before these courses are offered, the university wants to know whether students will work well virtually as teams to complete projects. We're helping the university with this by having current MTSU students work as virtual teams on simple problem solving tasks.

Specifically, we want to investigate virtual team interaction via messaging, how virtual team members come to an agreement, and attitudes toward virtual team members. We believe that our two part study can accomplish these goals.

As you may remember, the online survey you took through *Sona System* helped us match you with a similar student who will be your virtual teammate today.

Instructions:

You and your virtual teammate will be working together for approximately 1 hour (45 minutes on this packet and 15 minutes taking a survey). You will be communicating with each other via Google Hangouts Messenger. That is, type all your answers as if you were talking to them in person. Your first task is to introduce yourself and start learning more about your teammate. In order to do this, answer the questions on the next page labeled "Get to your teammate – information sheet". Share your answers and ask about your teammate's answers one by one. This process should mimic a face-to-face conversation. Please be as truthful as possible.

If you have any questions, ask the experimenter in the room.

You have approximately 45 minutes to complete this packet (3 tasks). The experimenter will notify you if the time limit is approaching.

GET TO KNOW YOUR TEAMMATE
Information Sheet

Instructions:

Share your answers one by one.

1. What was your favorite subject in school when you were younger?

2. Who has been a mentor in your life? Why?

3. What is your favorite type of music or song?

4. If you were stranded on an island, what is one item that you would want to have?
Why?

5. If you were a color or group of colors, what would you be and why?

6. Are you in a romantic relationship?

When you are finished sharing, you can begin working on the first problem solving task.

PROBLEM SOLVING TASK #1

Instructions:

Make sure to read the scenario/problem and verify that both you and your virtual teammate understand the problem. You should take 5 minutes to individually solve the following problem. Then, take another 10 minutes to work together to solve the problem in a way that you both agree. Please be sure to explain your reasoning as you work with your virtual teammate to come to a consensus. Make sure to type out all your answers in order to mimic a face-to-face conversation.

The Problem:

You and your teammate are guests on a private yacht in the Pacific Ocean. After a full day of fun in the sun, you both retire to get a good night's rest. In the middle of the night, you are abruptly woken by shouts of "FIRE!" You jump out of bed, throw some jeans on, and run to the deck of the ship.

You are instructed by a crew member to grab as many helpful items as you can and report to the life raft in the back of the boat immediately. Without delay, you look around to see what items you can grab that will be beneficial to your survival. Remember, it is the middle of the night and your best estimate as to your whereabouts is one thousand miles south of the nearest land.

You are aware that you have a package of cigarettes and some matches in your pocket. Aside from that, you see the following items within reach. **It is your job to rank these items with "1" for the most important item through "7" for the least important item. Please rank the entire list.**

Instructions:

Take 5 minutes to rank the items individually. Check if your teammate is done with their rankings before sharing. When you're both finished, take 10 minutes to share your rankings one by one by going down the list. The goal is to come to an agreement on the final team ranking. Record the answers on this packet.

ITEMS

ITEM	YOUR RANKING	TEAM RANKING
Fishing kit		
Five-gallon can of water		
Maps of the Pacific Ocean		
One case of U.S. Army C rations		
Shaving mirror		
Twenty square feet of opaque plastic		
Two-gallon can of oil-gasoline mixture		

Adapted from “Lost at Sea,” Jones, J. J. & Pfeiffer, J. W. (Eds.). (1975). Handbook for Group Facilitators. University Associates Publishers, Inc. La Jolla, CA.

Important: Share your answers one by one by going down the list

After you have agreed on the team rankings, you can begin working on the second problem solving task.

PROBLEM SOLVING TASK #2

Instructions:

Make sure to read the scenario/problem and verify that both you and your virtual teammate understand the problem. Take 5 minutes to individually solve the following problem. Then, take another 10 minutes to work together to solve the problem in a way that you both agree. Please be sure to explain your reasoning as you work with your virtual teammate to come to a consensus. Make sure to type out all your answers in order to mimic a face-to-face conversation.

The Problem:

Once you have gathered your items, you run to the back of the boat and see that the life raft is only going to hold 6 people. If any more than 6 people use the raft, everyone will die. Knowing that you and your teammate will be on the raft, (you **cannot** give up your seat) **you must choose 4 of the remaining 9 passengers.**

The following are the details of the nine passengers:

1 **Jamie Browning.** Jamie was the captain of the boat and helped wake everyone up when the fire started. Jamie's father is an Air Vice-Marshall and a decorated Gulf veteran. Jamie is a keen golfer and collects theatre memorabilia. Recently, there has been some concern amongst Jamie's colleagues that Jamie is showing signs of a drinking problem. Jamie is one of a team of volunteer pilots who carry out mercy missions which drop food and medical aid in places of crises.

2 **Jean McGraw.** Jean recently returned from presenting a paper on "Re-building Facial Features Following Accidents" at medical conference. Jean is a recent divorcee with four grown up children. At 57 Jean owns a plastic surgery clinic in California that has made a considerable fortune. Jean has established a charitable program which helps children with facial injuries. Jean's hobbies include collecting vintage cars, deep sea fishing.

The Butler family – Addison, Joey, and Chris

3 **Addison Butler** is a 40 year old church minister and has been a missionary in Papua New Guinea for the past 15 years. Addison is keen to take up the challenge of a new post in Haiti, but has not discussed the move with Chris, who is anxious to return to the UK. Addison is also torn by the wish to spend more time with the two older children. Addison's hobbies are bridge and fishing.

4 **Joey Butler** (35) did a lot of voluntary work whilst in Papua New Guinea. Joey established a youth club which developed skills such as orienteering and life-skills in young people. For many years Joey has wanted to start a career and also has a manuscript of a first book, intending to take to a publisher. Joey's book explores issues relating to helping indigenous peoples and their way of life survive the 21st century. Joey has three children.

5 **Chris Butler**, an epileptic, is the child of Addison and Joey. Chris is a very intelligent 10 year old and shows great talent at music and languages. Chris has two siblings, a fourteen year old brother and a 12 year old sister who are both at boarding school in the UK. Chris did not want to take time out of school for this trip but Joey and Addison felt that it was important that the children get to visit each other.

6 **Robin Heap** is a 45 year old and is married with two children. A Conservative member for Happiburgh, Robin currently resides on the back bench following a brief, but very public period as Junior Minister in the Department for Defense. Robin resigned from this position because of a scandal involving insider dealing. Robin happens to be an Olympic medalist in track events and has made a fortune in sports clothing. Robin's hobbies include sailing, squash and growing hothouse orchids.

7 **Sam Comfort**. Sam is a 29 year old nurse and a member of Greenpeace. Sam abandoned plans to marry three years ago and took up a post as Nursing Officer at an Antarctic research station carrying out work on hypothermia. Having a good experience with the rest of the team at the research station, Sam would like to renew a contract and return there. Sam is a very gifted musician, plays the violin and enjoys swimming and badminton.

8 **Professor Mu Chado**. Professor Chado has been Professor of Microbiology at the University of Barkington for the past 10 years. Mu has developed an antibody to the HIV virus that has proved successful in combating illness in experimental animals. Now 60 years old and single, Mu is physically disabled and is confined to a wheelchair because of a riding accident at the age of 30. Mu's hobbies include painting and reading.

9 **Alex Lowes-Harrington** is a Performance Director in the energy industry. Alex is a 35 year old gay person with no children and spent 12 years in the army and retired at the age of 30 at the rank of Captain. As a passionate art collector, Alex has been involved in negotiations where the Victoria and Albert Museum acquired a number of valuable pieces of British art from Japan and the United State. Currently, Alex is the Chair of a working group which is considering how art may be used to improve inner-city environments.

Adapted from Survival Crash Scenario. Retrieved February 4, 2007, from University of California Davis, Human Services Web site:
<http://humanservices.ucdavis.edu/resource/uploadfiles/survival%20crash%20Scenario.pdf>

Instructions:

Choose the 4 people by yourself first. Then check if your teammate is done choosing people before sharing. When you're both finished, take 10 minutes to discuss your answers. The goal is to agree on the **team choice of four people** to get on the life raft. Record the answers on this packet.

People to be on life raft:

	Your Choice	Team Choice
1		
2		
3		
4		

After you have come to a consensus, raise your hand and give this packet with all the completed answers to the experimenter. The experimenter will now show you the link to the survey about your virtual team experience.

APPENDIX C: Confederate Scripts

Option A = Control condition (heterosexual)

Option B = Experimental condition (homosexual)

Follow scripts as written.

Beginning of interaction and “get to know you task”

Note: this script will have to be partially improvised throughout the virtual team study to simulate a true experiment; however, the following script must be adhered to as much as possible. The confederate should not have any opinions or reveal any outside information that is not reported on this script. The script and all the options and reasons should be memorized by the confederate.

TOPIC	CONFEDERATE ANSWERS
Greeting	Hi my name is _____ and I'll be working with you today. What's your name?
Participant types name	Nice to meet you [participant's name]! What year are you in?
Participant types academic standing year	Me too. Can't wait to finish! What's your major?
Participant types major	That's weird, I'm a _____. I guess they did a good job in paring us together. We should get started filling out this information sheet.
GET TO KNOW YOUR TEAM MEMBER TASK	<i>Immediately start sharing your answers, one by one.</i>
Sharing answers from the information sheet	I think we are supposed to share our answers. What did you put for Number 1?
Response to Participant's # 1	That's interesting, Math was my favorite, for some reason I liked working with numbers instead of words. Who did you say was a mentor in your life?
Response to Participant's # 2	That certainly sounds like mentorship to me OR That sounds great. For me it was my Mom- She has had a lot to deal with over the years and she remains so positive. What did you say for the music question?
Response to Participant's # 3	I like that too, but then again, I like all kinds of music and really can't pick just one. What did you say for Number 4?
Response to Participant's # 4	That would be good to have on an island. I'd want matches because I know I wouldn't be able to start a fire with a rock and a stick! How about the color question?
Response to Participant's # 5	That is interesting, A – Male/Female Confed – I said green with purple polka dots lol, sounds weird but I like nature and I like to be original B - Male Confed – I chose a rainbow because I am gay so I kind of identify with it. B - Female Confed – I chose a rainbow because I am a lesbian so I kind of identify with it.

<p>Response to Participant's #6 <u>Romantic</u> <u>relationship?</u> Participant says: YES</p>	<p>I'm in a relationship too. A - Male Confed – My girlfriend's name is Lindsay A - Female Confed – My boyfriend's name is Mark B - Male Confed – My boyfriend's name is Steve B - Female Confed – My girlfriend's name is Sarah</p>
<p><u>Romantic</u> <u>relationship?</u> Participant says: NO</p>	<p>I'm in a relationship but sometimes miss the single life. A - Male Confed – My girlfriend's name is Lindsay A - Female Confed – My boyfriend's name is Mark B - Male Confed – My boyfriend's name is Steve B - Female Confed – My girlfriend's name is Sarah</p>

Problem solving task one

Note: Wait approximately 5 minutes until the participant is done with their rankings. At this point, the confederate should report his/her reasoning if there is more than a two degree discrepancy.

After stating the reason, if the participants insist on their ranking, agree or meet in the middle. However, if there is more than a five degree discrepancy, the confederate should be more hesitant and restate the reason again. The goal should be to compromise, not always agree. Use the following table listing most possible answers the participant may have and responses you can give.

ITEM	YOUR RANKING
Fishing kit	6
Five-gallon can of water	3
Maps of the Pacific Ocean	7
One case of U.S. Army C rations	4
Shaving mirror	1
Twenty square feet of opaque plastic	5
Two-gallon can of oil-gasoline mixture	2

PROBLEM SOLVING TASK 1	CONFEDERATE ANSWERS Same for A and B conditions
Participant response to fishing kit – same ranking 6	Great, we have the same ranking. Let's move on to the next item. What did you put down for water?
Participant response to fishing kit – different ranking 1-3	Our rankings are different here. I said the fishing kit would be a 6 because that is a means to food. Can we compromise here and choose a ranking between 4 and 6?
No, change of ranking	Alright, let's rank it similar to yours.
Yes, change of ranking	Awesome! What was your ranking for water?
Participant response to fishing kit – similar ranking 4-7	We're kind of similar here. I'm fine with keeping your ranking for the team. What was your ranking for the water?
Participant response to five-gallon can of water – same ranking 3	Same here! This can be our team ranking. What did you say for the maps?
Participant response to five-gallon can of water – different ranking 5-7	I actually gave it a ranking of 3 because people need water to survive and you can't drink ocean water. How about we make the team ranking similar to my response?
No, change of ranking	I see where you're coming from. Let's meet in the middle and rank it between 1 and 4.
Yes, change of ranking	Cool! Let's move on to the next item. What was your ranking for the maps?
Participant response to five-gallon can of water – similar ranking 1-4	We have similar rankings here. I'm fine with keeping your ranking! What did you say for the maps?
Participant response to maps of the Pacific Ocean – same ranking 7	Same ranking! Let's move on to the next one. What did you say for the Army C rations?
Participant response to maps of the Pacific Ocean – different ranking 1-4	Ok, we differ here. I gave the maps a 7 because it's worthless without navigation equipment. It really only matters where the rescuers are. Want to change your ranking and make it similar to mine?
No, change of ranking	That's fine, I'll agree with your ranking then.
Yes, change of ranking	Cool. Let's look at the next item, what did you say for the Army C rations?

Participant response to maps of the Pacific Ocean – similar ranking 5, 6	Our rankings are sort of close. Let's keep your ranking for the team! What was your response to the Army C rations?
Participant response to U.S. Army C rations – same ranking 4	Great, we have the same ranking. What did you rank the shaving mirror?
Participant response to U.S. Army C rations – different ranking 1, 7	So I thought the Army C rations should be a 4 because people also need food. Could we rank this item a 4 for the team ranking?
No, change of ranking	Got it, let's change it to your ranking.
Yes, change of ranking	Cool! What did you say for the shaving mirror?
Participant response to U.S. Army C rations – similar ranking 2-6	Our rankings are sort of close. I'm fine with putting down your ranking. What was your ranking for the shaving mirror?
Participant response to shaving mirror – same ranking 1	This item is the most important one, glad we agreed. What was your ranking for the opaque plastic?
Participant response to shaving mirror – different ranking 4-7	We differ here. I said the shaving mirror was number 1 because we can use it to signal any airplanes. Want to change it to mine?
No, change of ranking	Fine with me, let's change it to that then.
Yes, change of ranking	Cool, what did you say for the opaque plastic?
Participant response to shaving mirror – similar ranking 1-3	So close! We definitely have similar rankings here. I'm fine with choosing yours as the team one. What was your response to the opaque plastic?
Participant response to the twenty square feet of opaque plastic – same ranking 5	Same! Let's do the next one. What did you say for the gasoline?
Participant response to the twenty square feet of opaque plastic – different ranking 1, 2	I actually thought the opaque plastic should be 5 because it can be utilized to collect rain water and provide shelter. Want to make this our team ranking?
No, change of ranking	Right, I get that. Let's change it to your ranking then
Yes, change of ranking	Awesome! What did you say for the gasoline?
Participant response to the twenty square	Sort of close here. Let's keep your ranking for the team ranking! What did you say for the gasoline?

feet of opaque plastic – similar ranking 3-7	
Participant response to the two gallon can of oil-gasoline mixture – same ranking 2	Nice, same ranking! I guess we're done with this task. Let me know when you're done with task 2 so we can share answers.
Participant response to the two gallon can of oil-gasoline mixture – different ranking 5-7	I gave the gasoline a 2 because it can be used as a signal, we can set it on fire and it can float by the raft for an extended period of time. How about we change the ranking to 2?
No, change of ranking	That's fine, let's keep your ranking.
Yes, change of ranking	Great. I guess we're done with this task. Let me know when you're done with task 2 so we can share answers.
Participant response to the two gallon can of oil-gasoline mixture – similar ranking 1-4	We're kind of close. Let's keep your ranking as the team one and finish this task! Let me know when you're done with task 2 so we can share answers.

Problem solving task two

Note: Wait approximately 5 minutes until the participant is done.

At this point, the confederate should report his/her answers and the reasoning for all four of his/her choices. If there is disagreement, the confederate should insist upon the first choice and can compromise or agree with the participants on the others. The confederate must stand firm on Chris Butler and Sam Comfort for reasons stated below. The confederate can negotiate the other two as he/she sees fit. Use the following table listing most possible answers the participant may have and responses you can give. If necessary use the reasons listed below.

People and reasons for saving:

Chris Butler- She/he is young and deserves to live more of life. Chris is dedicated to education and will probably turn out to be a great asset to society.

Sam Comfort- has done quite a bit to help the medical field and has dedicated his/her life to helping people and should be rewarded. Plus, the medical background could come in useful.

Alex Lowes-Harrington- I thought he/she should be commended for their work in the military and he/she really hasn't had a chance to live much since they spent 12 years of their adult life in the military.

Addison Butler- I felt Chris should be left with at least one parent. I picked Addison because she/he already has a job prospect whereas Joey would have had to start looking for a job, which could be real hard after losing a spouse.

Other reasoning if needed for people you didn't choose to save:

Jamie Browning- didn't pick because not everything in his bio was commendable whereas some of the others had more.

Jean McGraw- didn't pick because he/she has probably lead a good (rich) life, has grown up kids and no spouse.

Joey Butler- I felt two of the Butler family was enough, there are only four spots left!

Robin Heap- I felt that Robin has had quite a bit of success and has probably been happy. Robin's bio really didn't report as much sacrificial service as the others.

Professor Mu Chado- didn't pick mostly because he/she is old and has lived a full and useful life already.

PROBLEM SOLVING TASK 2	CONFEDERATE ANSWERS Same for A and B conditions
Starting the task	I think we have to agree as a team again on 4 people to save. Here are my choices: I picked Chris, Sam, Alex, and Addison. Who did you pick?
Participant response – picked Chris and Sam as part of his/her 4 people	I'm glad we both picked Chris and Sam. I definitely wanted to save them. We can put down the other 2 people you chose to save as part of our team choice. That way we'll both get 2 people to save each. This was so easy!
Participant submits team choice. Wrapping up	Alright! Looks like we are finished. This wasn't as bad as I thought it was going to be. I guess we just have the survey and then we are finished.
Participant response – picked only Chris as part of his/her 4 people	It's great that you also picked Chris! That will be our first team choice. I understand your other 3 choices but I really want to save Sam. I think he/she has done quite a bit to help the medical field and has dedicated his/her life to helping people and should be rewarded. Plus, the medical background could come in useful. How about we put Sam as one of our team choices?
No, keep my three	Hmm. I understand where you're coming from but I really want to save Sam. That's my non-negotiable. I'm willing to compromise on the other 2 people we save as a team but Sam has to be one of the last 3 people we save. You can pick the other 2 people. So we'll have Chris (that we both picked initially), Sam, and 2 people of your choosing. I believe that's a fair compromise.
Yes, we'll keep Sam	Awesome! We can put down the other 2 people you chose in our team ranking. After that, I'm pretty sure we're done with this task since we'll have all 4 people that we saved.
Participant submits team choice. Wrapping up	Alright! Looks like we are finished. This wasn't as bad as I thought it was going to be. I guess we just have the survey and then we are finished.
Participant response – picked only Sam as part of his/her 4 people	It's great that you also picked Sam! That will be our first team choice. I understand your other 3 choices but I really want to save Chris. I think she/he is young and deserves to live more of life. Chris is dedicated to education and will probably turn out to be a great asset to society. Want to put Chris as one of our team choice?
No, keep my three	Hmm. I understand where you're coming from but I really want to save Chris. That's my non-negotiable. I'm willing to compromise on the other 2 people we save as a team but Chris has to be one of the last 3 people we save. That means that you

	can pick the other 2 people. So we'll have Sam (that we both picked initially), Chris, and 2 people of your choosing. I believe that's a fair compromise.
Yes, we'll keep Chris	Awesome! We can put down the other 2 people you chose in our team ranking. After that, I'm pretty sure we're done with this task since we'll have all 4 people that we saved.
Participant submits team choice. Wrapping up	Alright! Looks like we are finished. This wasn't as bad as I thought it was going to be. I guess we just have the survey and then we are finished.
Participant response – picked neither Chris nor Sam	Those are interesting choices! I actually really want to save Chris and Sam. I think Chris is young and deserves to live more of life. Chris is dedicated to education and will probably turn out to be a great asset to society. Also, Sam has done quite a bit to help the medical field and has dedicated his/her life to helping people and should be rewarded. Plus, the medical background could come in useful. These two people, Chris and Sam, are my non-negotiables. I'm willing to compromise with the other 2 people we save, meaning you can choose the other two completely but I definitely want Chris and Sam to be saved. Would you be willing to put Chris and Sam as 2 of our team choice?
No, keep my four	I think it's fair if we both pick two people to save each. I really want to save Chris and Sam. They're my non-negotiables. I'm willing to compromise on the other 2 people we save as a team but Chris and Sam have to be 2 of the people we save. That means that you can pick the other 2 people. So we'll have Chris and Sam (my choices), and 2 people of your choosing. I believe that's a fair compromise. Could we please save Chris and Sam?
Yes, we'll keep Chris and Sam	Thanks for understanding! We can put down the other 2 people of your choosing in our team ranking. After that, I'm pretty sure we're done with this task since we'll have all 4 people that we saved.
Participant submits team choice. Wrapping up	Alright! Looks like we are finished. This wasn't as bad as I thought it was going to be. I guess we just have the survey and then we are finished.

END OF ONLINE INTERACTION

APPENDIX D: Time-Two: Informed Consent and Post-Virtual Team Survey

Middle Tennessee State University Institutional Review Board
Informed Consent Document for Research

Principal Investigators: Sofia Vacas and Dr. Mark Frame

Study Title: Virtual Team Study

Institution: Middle Tennessee State University

Technology and Communication: How Do You Rate Performance?

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below. You will be given an opportunity to ask questions, and your questions will be answered.

Your participation in this research study is voluntary. You are also free to withdraw from this study at any time. In the event new information becomes available that may affect the risks or benefits associated with this research study or your willingness to participate in it, you will be notified so that you can make an informed decision whether or not to continue your participation in this study.

For additional information about giving consent or your rights as a participant in this study, please feel free to contact the MTSU Office of Compliance at (615) 494-8918.

Purpose of the study:

The purpose of this study is to investigate virtual team interaction via messaging, how virtual team members come to an agreement, and attitudes toward virtual team members.

This is a laboratory study that will award 2 credit hours of research participation. This study involves participating in a two person virtual team and solving problems in different situations. Your virtual team member will be another MTSU student that matches your major, class standing (e.g., junior), GPA, and other characteristics. We believe that pairing you with someone similar to you will make this online interaction more enjoyable. At the conclusion of the online interaction, you will take an online survey that will provide us with information regarding your preferences, background, and experience regarding working virtually.

Description of procedures to be followed and approximate duration of the study:

As a voluntary participant in this study, you will be asked to participate in a virtual team lab study where you will work on problem solving tasks and will interact through online messaging with another virtual team member. At the conclusion of the online interaction,

you will take an online survey. The virtual team lab study and survey will take approximately 1 hour.

Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:

There are little to no known or expected risks/discomforts for participants volunteering in this study.

Anticipated benefits from this study:

All participants will benefit from the experience of helping develop scientific research in the field of Industrial/Organizational Psychology at Middle Tennessee State University.

Alternative treatments available:

Participants who wish to receive required research credits, but do not choose to participate in this study, may read and summarize an article found in the Science Learning Center per their course requirements and the Middle Tennessee State Department of Psychology policy. The time required to write the article summary will be proportionate with the time required to participate in the proposed study.

Compensation for participation:

Participants who are required to complete research as part of course requirements will receive two (2) research credits for participating in the proposed study. Other adults (non-students) will be invited to participate in the study, but no direct compensation will be offered for participation.

What happens if you choose to withdraw from study participation:

You may refuse to participate or quit at any time. If you quit or refuse to participate, the benefits to which you are otherwise entitled will not be affected.

Contact Information

If you should have any questions about this research study or possible injury, please feel free to contact Dr. Mark C. Frame at (615) 898-2565 or Sofia Vacas at (703) 763-9652. You may call the MTSU IRB Compliance Officer at (615) 898-8918 for any questions you may have about your rights as a research participant.

Confidentiality

Every attempt will be made to see that your study results are kept confidential. A copy of the records from this study will be securely stored in the Department of Psychology for at

least three (3) years after the end of this research. The results of this study may be published and/or presented at meetings without naming you as a subject. Although your rights and privacy will be maintained, the Secretary of the Department of Health and Human Services, the MTSU IRB, and personnel particular to this research (Dr. Mark C. Frame and Sofia Vacas) have access to the study records. Your responses, informed consent document, and records will be kept completely confidential according to current legal requirements. They will not be revealed unless required by law, or as noted above.

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY

I have read and understand the above consent form. By choosing the “I wish to participate in this study” option, I indicate my willingness to voluntarily take part in the study.

(If you do not wish to participate in the research study, please decline participation by choosing the "I do not wish to participate in this study" option.)

- I wish to participate in this study
- I do not wish to participate in this study

QUALIFIER QUESTION

Are you over 18 years of age?

- Yes
- No

BEGINNING OF SURVEY

Please answer the following questions openly and honestly, there are no right or wrong answers. Use the following scale when answering the questions (1 = *strongly disagree* and 5 = *strongly agree*).

ATLG		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I think male homosexuals are disgusting	<input type="checkbox"/>				
2.	Male homosexuality is a perversion.	<input type="checkbox"/>				
3.	Male homosexuality is a natural expression of sexuality in men.	<input type="checkbox"/>				
4.	Sex between two men is just plain wrong	<input type="checkbox"/>				
5.	Male homosexuality is merely a different kind of lifestyle that should not be condemned.	<input type="checkbox"/>				
6.	I think lesbians are disgusting.	<input type="checkbox"/>				
7.	Female homosexuality is a perversion.	<input type="checkbox"/>				
8.	Female homosexuality is a natural expression of sexuality in women	<input type="checkbox"/>				
9.	Sex between two women is just plain wrong.	<input type="checkbox"/>				
10.	Female homosexuality is merely a different kind of lifestyle that should not be condemned.	<input type="checkbox"/>				

TEAMWORK EFFICACY		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11.	I feel confident in my team's ability to perform well as a virtual team.	<input type="checkbox"/>				
12.	I think my team can eventually reach a high level of performance as a virtual team.	<input type="checkbox"/>				
13.	I am sure my team can learn how to perform as a virtual team effectively in a relatively short period of time.	<input type="checkbox"/>				
14.	I don't feel that my team is as capable of performing as a virtual team.	<input type="checkbox"/>				
15.	On the average, other teams are probably much more capable of performing as a virtual team than my team.	<input type="checkbox"/>				
16.	My team will learn to work as a virtual team quickly, in comparison to other teams.	<input type="checkbox"/>				

17.	I am not sure my team can ever reach a high level of performance as a virtual team.	<input type="checkbox"/>				
18.	It would take my team a long time to learn how to perform as a virtual team effectively.	<input type="checkbox"/>				
19.	I am not confident that my team can perform as a virtual team effectively.	<input type="checkbox"/>				
20.	I doubt that my virtual team's performance will be very adequate.	<input type="checkbox"/>				

PARTNER LIKEABILITY		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21.	My partner seemed likeable before the task.	<input type="checkbox"/>				
22.	My partner seemed likeable throughout the task.	<input type="checkbox"/>				
23.	My partner seemed likeable at the end of the task.	<input type="checkbox"/>				
24.	I felt my partner and I had a positive experience throughout the task.	<input type="checkbox"/>				
25.	My partner contributed to the task.	<input type="checkbox"/>				
26.	My partner's contribution to the task was not helpful.	<input type="checkbox"/>				
27.	My partner did not listen to my point of view.	<input type="checkbox"/>				
28.	My partner compromised with my points of view.	<input type="checkbox"/>				
29.	I would work with this partner on a similar task in the future.	<input type="checkbox"/>				
30.	I would work with this partner in an employment setting	<input type="checkbox"/>				

RESEARCH PARTICIPATION AND DISTRACTOR ITEMS		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
31.	I enjoy participating in group projects.	<input type="checkbox"/>				
32.	Persons with disabilities can teach me things I could not learn elsewhere.	<input type="checkbox"/>				
33.	I can best understand someone after I verify he/she is similar to me.	<input type="checkbox"/>				
34.	Getting to know someone of another race is generally an uncomfortable experience for me.	<input type="checkbox"/>				

35.	It is really hard for me to feel close to a person from another race.	<input type="checkbox"/>				
36.	I cannot work with someone of lower intelligence.	<input type="checkbox"/>				
37.	Group projects bring out the best of my personality.	<input type="checkbox"/>				
38.	Forced group activities are for the birds.	<input type="checkbox"/>				
39.	I am often embarrassed when I see a physically disabled person.	<input type="checkbox"/>				
40.	I mostly surround myself with female companions.	<input type="checkbox"/>				
41.	Different races should not mix.	<input type="checkbox"/>				
42.	If two people don't agree, they never will agree.	<input type="checkbox"/>				
43.	I only surround myself with male companions.	<input type="checkbox"/>				
44.	It is hard for me to compromise with others' views.	<input type="checkbox"/>				
45.	I like being the leader in group activities.	<input type="checkbox"/>				
46.	I am sometimes annoyed at people who call attention to racism in this country.	<input type="checkbox"/>				
47.	I have a homosexual friend or relative.	<input type="checkbox"/>				
48.	In group activities, I try my best to understand the other person's point of view.	<input type="checkbox"/>				
49.	I prefer to surround myself with people that have similar religious beliefs.	<input type="checkbox"/>				
50.	It is important to marry someone that looks and acts just like me.	<input type="checkbox"/>				
51.	People that are mentally slower than me are frustrating.	<input type="checkbox"/>				
52.	As a group member, I feel I can be counted on to do a good job.	<input type="checkbox"/>				
53.	I appreciate events where I might get to know people from different racial backgrounds.	<input type="checkbox"/>				
54.	I am offended when people act against my morals.	<input type="checkbox"/>				
55.	It is harder to compromise when two people have different morals.	<input type="checkbox"/>				
56.	Large groups of people mean more brain power.	<input type="checkbox"/>				

DEMOGRAPHICS

Please answer the following questions openly and honestly, there are no right or wrong answers.

1. Other than today, how familiar are you with instant messengers such as Google Hangouts Messenger?
 - a. Not at all familiar
 - b. Slightly familiar
 - c. Somewhat familiar
 - d. Moderately familiar
 - e. Extremely familiar

2. Other than today's use, how often do you use instant messengers such as Google Hangouts Messenger?
 - a. Never
 - b. Rarely
 - c. Occasionally/Sometimes
 - d. Almost every time
 - e. Every time

3. Please indicate which gender you identify most with:
 - a. Male
 - b. Female
 - c. Transgender male
 - d. Transgender female
 - e. Other: _____

4. Please indicate the ethnicity you identify most with:
 - a. African American/Black
 - b. American Indian/Alaskan Native
 - c. Arab/Middle Eastern
 - d. Asian/Asian American
 - e. Caucasian/White
 - f. Hawaiian/Pacific Islander
 - g. Hispanic/Latino
 - h. Multi-Racial
 - i. Other: _____

5. Please indicate the sexual orientation you identify most with:
 - a. Heterosexual (or straight)
 - b. Gay
 - c. Lesbian
 - d. Bisexual
 - e. Other: _____

6. Please state your birth year: _____
7. What is your academic standing?
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
 - e. Graduate/Advanced
 - f. Other: _____
8. What is/are your current major(s): _____

CREDIT QUESTIONS

In order to make sure that you get credit for completing this lab and survey, please provide the following information.

Name: _____

M Number: _____

MTSU Email address: _____

We thank you for your time taking this survey. Your response has been recorded.

END OF SURVEY

APPENDIX E: Debrief

Thank you for your participation in this study. Now that you have completed the study there are several things I would like to briefly explain to you. The study was based on how people's opinions change after working with members of stigmatized groups such as homosexuals. Each of you participated in the virtual team problem solving task with a confederate that either disclosed his/her sexual orientation at some point throughout the task, or did not disclose at all.

In general, the results will probably indicate that there are differences between how some groups of people view homosexuals. At this point, we are not certain about what the results will show, but other research suggests that those that know a member of a stigmatized group are less discriminatory towards the group as a whole.

All information collected in the questionnaires will be put together according to the application packet and analyzed for differences. Because your responses will not be analyzed individually, I cannot provide individual results for any of the questionnaires. If you are interested you can contact me, and I will share the combined results with you when they are available.

Now that you know the real purpose of this study, there are some potential risks you may encounter. These risks include experiencing difficult feelings by learning that deception was used to facilitate your interaction with a confederate that may have disclosed his/her sexual orientation. This may be the case if you feel strongly against lesbians and gay men.

If, for any reason, you do not wish for your results to become part of this study, please let me know and I will discard any information collected from you.

If you have any questions, comments, concerns about this study, you may bring them up now or contact us later. You can contact me, Sofia Vacas at smr5q@mtmail.mtsu.edu, or my faculty supervisor, Dr. Mark Frame at Mark.Frame@mtsu.edu, with any issues regarding this study. Contact information is also on your copy of the consent document.

Now that you are aware of the details of this study, it is important that you do not share any of these details with any possible future participants. I will ask that you refrain from discussing this study so that future participants do not learn these details because it would likely affect their results and jeopardize the study. Once again, thank you for participation.

APPENDIX F: IRB Approval



10/26/2015

Investigator(s): Sofia Vacas, Mark Frame
Department: Psychology
Investigator(s) Email: smr5q@mtmail.mtsu.edu; mark.frame@mtsu.edu

Protocol Title: "Virtual Team Study "

Protocol Number: 16-2067

Dear Investigator(s),

The MTSU Institutional Review Board, or a representative of the IRB, has reviewed the research proposal identified above. The MTSU IRB or its representative has determined that the study poses minimal risk to participants and qualifies for an expedited review under 45 CFR 46.110 and 21 CFR 56.110, and you have satisfactorily addressed all of the points brought up during the review.

Approval is granted for one (1) year from the date of this letter for 300 participants:

Please note that any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918. Any change to the protocol must be submitted to the IRB before implementing this change.

You will need to submit an end-of-project form to the Office of Compliance upon completion of your research located on the IRB website. Complete research means that you have finished collecting and analyzing data. **Should you not finish your research within the one (1) year period, you must submit a Progress Report and request a continuation prior to the expiration date.** Please allow time for review and requested revisions. Failure to submit a Progress Report and request for continuation will automatically result in cancellation of your research study. Therefore, you will not be able to use any data and/or collect any data. Your study expires **Expiration date- 1 year from approval.**

According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to complete the required training. **If you add researchers to an approved project, please forward an updated list of researchers to the Office of Compliance before they begin to work on the project.**

All research materials must be retained by the PI or faculty advisor (if the PI is a student) for at least three (3) years after study completion and then destroyed in a manner that maintains confidentiality and anonymity.

Sincerely,

Michelle Stevens, PhD
Institutional Review Board
Middle Tennessee State University