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Imagine a Better World: Two Studies of Imagined Intergroup Contact

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IMAGINE A BETTER WORLD: TWO STUDIES OF IMAGINED

INTERGROUP CONTACT

by

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ABSTRACT

A growing body of evidence indicates that positive contact with outgroups improves attitudes towards those outgroups. Unfortunately, those with the most negative attitudes towards outgroups often have the fewest opportunities to meaningfully interact with members of those groups. These studies investigate the effects of imagining intergroup contact with a Muslim person on measures of explicit (Studies 1 and 2) and implicit (Study 2) anti-Muslim prejudice among the most ideologically intolerant individuals. Local and national participants were asked to complete a short imaginative exercise followed by a brief online questionnaire. Results indicate that imagined intergroup contact was effective in improving attitudes towards Muslims, even among those who were the most prejudiced and ideologically intolerant. We discuss the implications of these findings, as well as potential applications for imagined intergroup contact interventions, including international relations/diplomacy, and classroom diversity initiatives.

"Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world." – Albert Einstein

"A belief is not merely an idea the mind possesses. It's an idea that possesses the mind."

—Robert Oxton Bolton

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Promoting peaceful coexistence between different social groups may be one of the most important social issues of our time (Crisp & Turner, 2009); however, as a society, we don't seem to be very good at it. Indeed, in today's modernized, globalized, civilized, and nuclearized world, the notion of "world peace" has become something of a cliché, relegated to beauty pageants and campaign speeches. Nevertheless, the world today is interconnected like never before as thoughts, beliefs, opinions, and calls to action tear across the globe at the speed of light. Now, with ethnic and religious tensions reaching a critical mass, and an impending clash of civilizations (Huntington, 1993) looming just over the horizon, it is more important than ever for policymakers and educators to come equipped with practical and effective means for fostering tolerance and compassion.

Contact Theory

In 1954, Gordon Allport theorized that prejudice, which he defined as "feeling favorable or unfavorable, toward a person or thing, prior to, or not based on, actual experience" (p. 6), could be reduced through contact between members of opposing groups if participants (a) were of equal social status, (b) cooperatively interacted, (c) shared common goals, and (d) enjoyed institutional or social support (Allport, 1954). This notion, known now as the Contact Hypothesis, generated an explosion of interest and a wealth of supporting research, making it one of the most studied theories in psychology today (Oskamp & Jones, 2000). Since then, contact theory has proven effective in improving attitudes toward a wide range of outgroups, including the elderly (Caspi, 1984), homosexuals (Hodson, 2009), and AIDS victims (Batson et al., 1997), to name just a few. Equally diverse are the mechanisms thought to mediate contact's

prejudice-reducing effects: cognitive dissonance (Aronson & Patnoe, 1997; Miller & Brewer, 1986), anxiety reduction (Stephan & Stephan, 1985; Turner, Crisp, & Lambert, 2007), functional relations (Sherif et al., 1961), empathy enhancement (Batson et al., 1997; Finlay & Stephan, 2000), and reduced stereotyping (Kawakami, Dovidio, Moll, Hermsen, & Russin, 2000). Despite this wealth of empirical support, a number of practical limitations remain—most notably, issues of opportunity and efficacy.

Prejudice, Religion, and Politics

One of the most obvious drawbacks to using contact as an intervention is that all too often there are few, if any, opportunities for members of relevant racial, ethnic, or religious groups to interact (Dovidio et al., 2011). This challenge is particularly pronounced among ideologically intolerant, highly prejudiced individuals (Allport, 1954; Amir, 1969). Unfortunately, religion is both highly correlated with measures of ideological intolerance (Genia, 1996), and *pervasive* in American society: 85-90% of Americans report believing in God, nine out of ten report being religiously affiliated— 80% of which identify as Christian—and nearly 40% attend church once a week or more (Bader et al., 2005; Dougherty, Johnson, & Poulson, 2007). Despite these already staggering numbers however, American theism appears to be on the *rise*: according to a recent Pew Forum poll, Americans' self-reported belief in God has increased from 85-90% in 2005, to 92% in 2007 (Lugo et al., 2008).

These relationships between intergroup attitudes, intergroup contact, ideological intolerance, and religion don't just play out in temples and churches, either; as Ronald Reagan astutely pointed out, Americans often bring their religion with them to the polls (Reagan, 1984). Indeed, examining the effects of church attendance on attitudes towards

same-sex marriage, Lugo et al. (2006) found that churchgoing frequency predicts opposition to same-sex marriage: 82% of those who attend church weekly were opposed, compared to only 45% who seldom or never attend. Unsurprisingly, frequency of attendance has also been identified as a strong predictor of conservative ideologies; in fact, according to the Baylor Religion Survey (Bader et al., 2005), frequency of attendance was significantly and positively correlated with every measured item from the *Conservative Agenda* ("Spend more on the military," "Advocate Christian values," "Punish criminals more harshly," "Fund faith-based organizations," and "Allow prayer in schools") and significantly and negatively correlated with four of five measured items from the *Liberal Agenda* ("Abolish the death penalty," "Distribute wealth more evenly," "Regulate business more closely," and "Protect the environment more").

Indeed, Americans' religious prejudices are reflected quite clearly in their voting habits as well: according to a 2008 Gallup poll, 53% of Americans surveyed reported being unwilling to vote for a generally well qualified presidential candidate, nominated by their own party, if that candidate also happened to be an Atheist; 43% felt the same way about voting for a homosexual. Other deal breakers were third spouses (30%), Mormon faith (24%), and being a woman (11%) (Jones, 2008). Though prejudice against homosexuals and women has decline substantially in recent years, with unwilling rates dropping to 32% and 6% respectively, *religious* prejudices in the voting booth have gone unchanged as unwilling rates for Atheists and Mormons remained static at 49% and 22% respectively (Saad, 2011).

Clearly, there is something unique about the relationship between religion and prejudice. Moreover, there seems to be something unique about religion in general, given

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its remarkable ubiquity: "Any characteristic that is this common in a species cries out for explanation. Why do so many people believe in God?" (Shermer, 2011, p. 165). The answer, ironically, appears to be *evolution*, and it may also explain why religion is so closely related to intergroup prejudice.

The Origins of Religion

Prior to the development of religion, large-scale group cooperation was severely limited. Though the payoff for such cooperation can certainly be substantial, it requires considerable self-sacrifice from each individual. Unfortunately, the tendency to free ride—that is, to reap the benefits of group cooperation without actually contributing to the effort—is practically irresistible given the tremendous fitness advantages one can gain from cheating the system (Gervais, Shariff, & Norenzayan, 2011). Methods for deterring and discriminating against untrustworthy free riders were thus essential for large groups to develop and operate successfully.

Formally and harshly punishing transgressors is an effective method of deterrence, if done in a reliable and consistent manner; however, monitoring and punishing free riders is itself a costly endeavor, and once a majority of the population is genuinely honest, monitoring for honesty becomes a waste of time (Gervais et al., 2011; Irons, 1996; Johnson & Bering, 2006). Instead, *not* monitoring becomes advantageous, leading to the development of a second-order level of free riding where the problem begins anew: some individuals contribute to the public good, but skip out on administering punishment (Irons, 1996; Johnson & Bering, 2006).

While third-party punishment administrators such as court systems and police forces are popular solutions for enforcing social norms today, Henrich and Boyd (2001)

point out that large-scale group cooperation existed long before such institutions developed. Nevertheless, recent investigations into the evolutionary origins of altruism and group cooperation suggest that punishment may have been outsourced after all. Indeed, emerging evidence from a number of disciplines supports the notion that the evolution of *religion* may have may have been the critical development that first opened the door for large-scale cooperative efforts (i.e. civilization) by ensuring universal compliance with prevailing social rules and regulations (Alexander, 1987; Atran & Norenzayan, 2004; Irons, 1996; Norenzayan & Shariff, 2008).

Two Frameworks for Social Regulation

Two social evolutionary advancements are thought to be primarily responsible for religion's development as a solution to the free rider problem. The first is a heightened tendency to detect agency in nature, which resulted in a pervasive belief in the supernatural (Johnson & Bering, 2006; Norenzayan & Shariff, 2008). This predisposition to believe in otherworldly agents ostensibly developed as a means for encouraging religious affiliation and adherence to a common set of rules and values. To be sure, social regulations enforced via threats of supernatural or divine punishment have a number of distinct advantages: there's no second-order free rider problem, since the agents do the punishing; because group members do not dole out punishment, reprisals that might otherwise compromise group integrity are not a concern; and finally, transgressors can expect to be automatically caught and punished since they are constantly under watch (Johnson & Bering, 2006). As a result, the social pressures for individuals to not lie, cheat, or steal became internalized, and self-regulation became the norm.

Considerable evidence has been found to support this theory: Roes and Raymond (2002) have found that, across cultures, the belief in morally concerned supernatural watchers is positively correlated with group size and cooperation. People also tend to behave more prosocially (i.e. adhere to social rules and expectations) when reminded of supernatural agents (Bering, McLeod, & Shackleford, 2005; Shariff & Norenzayan, 2007) just as they behave more prosocially when they suspect being monitored by other humans (Bateson, Nettle, & Roberts, 2006). Indeed, this notion that we as a species are predisposed to believe in the supernatural is also supported by a number of twin studies which indicate that anywhere from 41-55% of variance in religious attitudes are attributable to genetic factors (Waller, Kojetin, Bouchard, Lykken, & Tellegen, 1990; Eaves, Eysenck, & Martin, 1989). Perhaps most impressively, Shariff and Norenzayan (2007) have demonstrated that the prosocial priming effects of supernatural stimuli are found even among self-professed atheists; that is, even those who do not believe in supernatural watchers respond to thinking about their presence.

The second social evolutionary advancement—an acute sensitivity to reputational concerns—serves a very different purpose (Johnson & Bering, 2006; Norenzayan & Shariff, 2008). Having developed prior to—and separately from—religion (Gervais et al., 2011; Norenzayan & Shariff, 2008), the functional role of this cognitive framework is just the opposite of the *supernatural* aspect: active enforcement of social regulations via informal sanctions (e.g. gossip and shunning). Prior to the development of religion, as group sizes began to increase and informal methods of sanctioning free loaders became obsolete, a virtual arms race broke out between honest members of the ingroup, and mendacious, free loading interlopers: as honest members of society got better at spotting

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liars, liars got better at deceiving others. Thus, for deterrence to remain an effective strategy in ensuring strong reciprocal bonds within group, it was imperative that these untrustworthy transgressors be quickly and reliably detected, excluded, and punished for their deceit (Henrich, 2006; Irons, 1996; Norenzayan & Shariff, 2008).

Muslim Prejudice and The Modern Model

The modern product of this evolutionary process is perhaps best described as systemic religious intergroup bias (Hewstone, Rubin, & Willis, 2002); that is, favorable attitudes towards those who share our beliefs, and biases against those who don't. This can be further resolved into two distinct components: 1) the supernatural component, which is principally prosocial, *self-regulatory*, and associated with morality and ethics, and 2) the categorical component, which is comparatively asocial—at times even antisocial—and principally concerned with the instinctive desire to *enforce* the prevailing belief system by detecting, labeling, and excluding value-violators (i.e. religious outgroup members) due to their perceived untrustworthiness (Rosik, 2007). Ultimately, however, the cognitive framework underpinning this second component—which initially evolved to facilitate and track heuristic assessments of "trustworthiness"—proves to be ill suited for making more complex "value compliance" judgments—a fact which becomes abundantly clear when one considers the practical application of such a model.

Take, for instance, an average evangelical's evaluation of an average Muslim. Functionally, the primary goal of the evaluation should be the determination of trustworthiness: recognizing that Islam is a religion, and that religious beliefs equate with supernatural watchers (which in turn predict prosocial behavior), the *logical* conclusion—all things being equal—would be that the Muslim is trustworthy. If,

however, the values of the supernatural component are allowed to inform the evaluation, errors are almost certain to ensue: "Because Muslims do not accept Jesus Christ as their savior, and doing so is the only true way to ensure salvation, Muslims do not share my value system or fear of God, and are thus untrustworthy."

Intuitively, were the evangelical to have had previous, positive contact with a Muslim, his or her outgroup evaluation may not have been quite so ideological or dogmatic. Absent positive, prior contact with which to inform the heuristic analysis however, the default standard is quite often the one provided by ideology. This logic is clearly reflected in a 2006 Gallup poll, which found that personally knowing someone who is Muslim corresponds with more favorable attitudes: 50% of respondents who were not acquainted with a Muslim responded favorably to the notion of requiring Muslims to carry special IDs, compared to 24% of respondents who knew a Muslim—a 26 point difference. Similarly, while 38% of respondents who were unacquainted with a Muslim said they would feel nervous being on the same flight as a Muslim, that number dropped to 20% among those who did know at least one Muslim—an 18 point difference (Saad, 2006).

Consistent with these data are the results of a 2007 Pew Forum Survey, which reveals that Islam is the most disliked religion in the United States, with 43% of participants reporting favorable attitudes, 35% reporting unfavorable attitudes, and 22% expressing no opinion (Lugo, Stencel, Green, & Smith, 2007). The same survey also found substantial age, education, and political affiliation differences in attitudes towards Muslims: older, less educated, and more conservative respondents all reported considerably higher levels of anti-Muslim prejudice than did younger, more educated, or

more liberal respondents. Moreover, like the Gallup poll, the Pew survey also found that knowing a Muslim matters: respondents who reported knowing at least one Muslim responded more favorably to questions about general opinions towards Muslims, likelihood of voting for a Muslim president, degrees of commonality between respondents' religion and Islam, and perceptions of Islam as a violent religion.

Ideological Intolerance

Characterized by value-rigidity, social-rigidity, and need for hierarchy, ideologically intolerant individuals typically exhibit a simplistic and formulaic worldview. Religious fundamentalists—characterized by the belief that theirs is the one true religion, that they have a special relationship with their deity, and that they are constantly embattled with the forces of evil (Altemeyer & Hunsberger, 1992)—exemplify this type of thinking. According to Rosik (2007), prejudice expressed by fundamentalists is often heavily influenced by the "party line" espoused by the religious group they affiliate with. This finding is consistent with the idea that religiously motivated prejudices are principally concerned with value violations—a concept which finds further support in research conducted by Johnson et al. (2011) indicating that religious fundamentalism (RF) mediates the relationship between religion and homosexual prejudice, while right-wing authoritarianism mediates the relationship between religion and racial prejudice.

Indeed, the second measure used here to evaluate ideological intolerance is right-wing authoritarianism (RWA; Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Altemeyer, 2003), which, in contrast to RF, is generally more concerned with securing against socially threatening outgroups, and ensuring ingroup cohesion and social order

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(Duckitt, Wagner, du Plessis, & Birum, 2002). A third construct, distinguished here yet nonetheless included in these studies is social dominance orientation (SDO; Pratto, Sidanius, Stallworth, & Malle, 1994), which, along with both RF and especially RWA, is a well-known prejudice predictor (Duckitt et al., 2002; Duckitt & Sibley, 2007). SDO is differentiated here however, because unlike RF & RWA (Genia, 1996), SDO represents non-religious ideological rigidity. Social dominators are driven by a competitive and aggressive need for dominance and superiority over other groups, and to that end, they make strategic use of ideologies that most effectively legitimate their superiority (Sidanius & Pratto, 1999). Just the opposite, RF and RWA are characterized as dogmatic and inflexible with regards to their religious beliefs (LaBouff, 2011), and they functionally express prejudice not for aggressive, confrontational purposes, but rather as an avoidance-oriented threat response to groups they perceive as socially dangerous (Asbrock, Christ, Duckitt, & Sibley, 2012; Pettigrew & Tropp, 2011). Nevertheless, SDO was included both for exploratory purposes, and due to its high degree of association with RF and RWA.

Ideologically intolerant persons present a unique challenge for contact theory given their highly avoidant and highly prejudicial natures: "When groups are highly segregated, physically or socially, or when there is little motivation to engage in contact, the benefits of contact may remain unrealized" (Crisp & Turner, 2009, p. 232). Fortunately, several methods of *indirect* contact appear to influence intergroup attitudes as well. According to the *extended contact hypothesis*, for example, simply knowing that an ingroup member has a close and positive relationship with an outgroup member is enough to reduce outgroup prejudice and improve intergroup attitudes (Dovidio, Eller, &

Hewstone, 2011; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). Likewise, *imagined intergroup contact* (Turner et al., 2007)—the mental simulation of a positive social interaction with a member of an outgroup—has also proven to be a viable method for reducing outgroup bias and improving intergroup relations (Crisp & Turner, 2009). In fact, since its introduction in 2007, imagined intergroup contact has been consistently effective at reducing ingroup favoritism (Turner et al., 2007), reducing intergroup anxiety (Abrams et al., 2008; Husnu & Crisp, 2010a; Turner et al., 2007, Experiments 2 & 3), improving outgroup evaluations (Husnu & Crisp, 2010a; Turner et al., 2007; Experiments 2 & 3), improving implicit attitudes (Turner & Crisp, 2010), increasing the liklihood of future contact (Husnu & Crisp, 2010a; Husnu & Crisp, 2010b; Husnu & Crisp, 2011), and more (cf. Crisp, Husnu, Meleady, Stathi, & Turner, 2010).

The practical implications of these indirect contact theories are tremendous, as they allow researchers, policymakers, and educators to initiate contact between groups like religious fundamentalists and right-wing authoritarians, who are not only predisposed to hate religious and socially threatening outgroups, but also highly unlikely to otherwise make contact or benefit from it. Given that scholars have harbored concerns about the efficacy of contact interventions since they were first proposed however, one has to wonder: just how effective can we expect contact to be among ideologically intolerance individuals? While this question has only recently begun to receive empirical investigation, initial results appear promising: a recent literature review considering contemporary studies of contact on individuals scoring high in measures of cognitive rigidity revealed that intergroup contact (direct and extended) not only works well—but often best—among ideologically intolerant and cognitively rigid individuals (Hodson,

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2011). How effective *imagined* intergroup contact might be in such inimical situations however is a question that, until now, has yet to be explored.

Here, we hypothesize that imagined intergroup contact will improve both explicit and implicit attitudes, even among ideologically intolerant individuals.

Study One

Our initial study was designed to replicate and extend previous investigations of imagined intergroup contact (e.g. Turner et al., 2007). Using a between-groups design, participants were instructed either to imagine interacting with a Muslim man, or to simply think about Muslims. Dependent variables focused on explicit intergroup attitudes and ideological intolerance. We predicted that positive imagined interaction with an outgroup member would improve intergroup attitudes, even among highly fundamentalist and/or authoritarian participants.

Methods

Participants

Seventy-five participants diverse in age (39 men, 46 women, M_{age} = 30.53 years, SD = 10.239, ages 18 to 60) were recruited using Amazon's Mechanical Turk[1] (MTurk), an online crowdsourcing marketplace for human intelligence tasks. Participants were somewhat diverse in both religious affiliation (40% no affiliation, 24% Protestant, 17.3% Catholic, 6.7% Buddhist, 2.7% Hindu, 1.3% Jewish, and 8% selected "other") and political orientation (57.3% Liberal, 25.3% Moderate, and 17.3% Conservative) but predominantly White (77.3%); other racial and ethnic groups comprised only a minority of the sample (9.3% Black, 6.7% Asian / Pacific Islander, 2.7% Hispanic, 2.7% Native American, and 1.3% selected "other"). Eligibility was restricted to MTurk users 18 years of age or older with United States-based IP addresses, and respondents were each compensated 25¢ for their participation. Because the target outgroup in the experiment

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[1] https://www.mturk.com/mturk/welcome (For a review of MTurk's validity, see Buhrmester, Kwang, & Gossling, 2011).

was Muslims, data from participants who self-identified as Muslim were eliminated prior to analysis.[2]

Materials and Procedure

The present study was conducted using an online survey, powered by Qualtrics,[3] which randomly assigned participants to either an *imagined contact condition* or a *control condition*. Participants assigned to the imagined contact condition were asked to: "Please spend the next three minutes imagining that you are talking to a Muslim man who has sat next to you. You spend about thirty minutes chatting until you have to leave for class. During the conversation you find out some interesting and unexpected things about him." Participants were then given three minutes to list as many things as they could about their imagined interaction. Participants assigned to the control condition were asked to: "Please spend the next three minutes thinking about Muslims," and were afterwards given three minutes to list as many thoughts as they could recall having during the imagination exercise. This task allowed us to verify that participants had completed the imagery exercise, and at the same time, reinforced its effect (Turner et al., 2007). Each page automatically advanced after three minutes elapsed.

Following the manipulation, participants were asked to complete several dependent measures assessing intergroup attitudes and ideological intolerance, as well as a series of demographic questions (Please see Appendix A for the complete questionnaire).

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[2] Although 91 participants completed the survey, 16 were removed during data cleanup. Fourteen participants failed to complete the manipulation, one was removed as a statistical outlier (>3 SDs from the mean anxiety score), and one participant self-identified as Muslim.
[3] http://www.qualtrics.com/

Intergroup Attitudes. To assess general outgroup attitudes, participants were asked to "Please rate how warm or cold you feel toward the following groups" (Muslims, Christians, Hindus, Arabic Persons, White Persons, and Black or African American Persons) using a single-item thermometer for each group (0° = *coldest feelings*, 100° = *warmest feelings*). To evaluate *intergroup anxiety*, participants were instructed to imagine they were being asked to complete a group project with a Muslim partner, and to report how "Confident" (reversed), "Irritated," "Awkward," "Impatient," "Frustrated," "Stressed," "Happy" (reversed), "Self-conscious," and "Defensive" they felt about the upcoming interaction on a 5-point scale (1 = *Clearly does not describe my feelings*, 5 = *Clearly describes my feelings*; Stephan & Stephan, 1985). Finally, to assess anti-Muslim prejudice, a modified version of Pratto et al.'s (1994) Anti-Arab Racism scale was also included. Participants were asked to rate, on a 7-point scale, how positive or negative (1 = *Very Negative*, 7 = *Very Positive*) they felt towards the following statements: "Most of the terrorists in the world today are Muslim," "Historically, Muslims have made important contributions to the world culture" (reversed), "Muslims have little appreciation for democratic values," "People of the Muslim religion tend to be fanatical," and "Muslims value peace and love" (reversed). Order of the explicit attitude measures was randomized for each participant.

Ideological Intolerance. Participants then completed three measures of various facets of ideological intolerance. Religious fundamentalism (RF) is the belief that one's religious teaching is uniquely true and inerrant, that the followers of this teaching have a special relationship with a deity, and that they are constantly embattled with the forces of evil (Altemeyer & Hunsberger, 1992). It was assessed with the 12-item revised religious

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fundamentalism scale (Altemeyer & Hunsberger, 1992), which is not specific to any single world religion. Participants were asked to rate, on a 9-point scale, how much they agreed or disagreed (-4 = *Very strongly disagree*, 4 = *Very strongly agree*) with each statement (e.g., "To lead the best, most meaningful life, one must belong to the one, fundamentally true religion"; "*All* of the religions in the world have flaws and wrong teachings. There is *no* perfectly true, right religion" [reversed]; "The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs").

Right-wing authoritarianism (RWA) is composed of three interrelated elements—submissiveness to legitimate authority, conventionalism, and authoritarian aggressiveness—and was measured using Smith and Winter's (2002) 10-item authoritarianism scale. Participants were asked to rate, on a 7-point scale, how much they agreed or disagreed (1 = *Strongly disagree,* 7 = *Strongly Agree)* with each statement (e.g., "There are many radical, immoral people in our country today, who are trying to ruin it for their godless purposes, whom the authorities should put out of action"; "It's better to have trashy magazines and radical pamphlets in our communities than to let the government have the power to censor them" [reversed]; "What our country needs most is discipline, with everyone following our leader in unity"). Recent studies conducted by Mavor, Macleod, Boal, and Louis (2009) however, indicate that the correlation between religious fundamentalism and the conventionalism component of authoritarianism create a statistical artifact that distorts the results of multiple regression analyses by suppressing the effect of fundamentalism. To remove this artifact, we used only the aggression and submission components in our analyses.

For exploratory purposes, we also included a measure of social dominance orientation (SDO), an indicator of a personal preference for hierarchy within social systems, which was measured using the Social Dominance Orientation Scale (Prato et al., 1994). Participants were asked to rate, on a 7-point scale, how positive or negative (1 = *Very negative*, 7 = *Very positive*) they felt toward 14 items (e.g. "Some people are just inferior to others," "Increased social equality" [reversed], "This country would be better off if we cared less about how equal all people were").

Presentation of the ideological intolerance measures was randomized for each participant.

Results

As expected, ideological intolerance positively correlated with self-reported measures of anti-Muslim prejudice, intergroup anxiety, religiosity, and conservative political orientation (Please see Table 1 for descriptives and correlations).

To further investigate the effects of imagined interaction on outgroup attitudes, we conducted an analysis of variance (ANOVA) which revealed a significant effect: participants reported significantly less anti-Muslim prejudice in the imagined interaction condition ($M = 2.46$, $SD = 1.24$) than participants in the control condition ($M = 3.38$, $SD = 1.47$), $F(1,72) = 8.07$, $p = .006$. Likewise, participants in the imagined interaction condition reported significantly less intergroup anxiety ($M = 1.80$, $SD = 0.621$) than those in the control condition ($M = 2.49$, $SD = 0.91$), $F(1,72) = 12.78$, $p = .001$ (Please see Table 2).

Table 1

Zero-Order Correlations Between Trait Characteristics and Explicit Attitudes

Variable	1	2	3	4	5	6	M	SD
1. Anti-Muslim Prejudice	--						2.99	1.44
2. Intergroup Anxiety	.65**	--					2.21	0.87
3. RWA	.22	.21	--				2.96	1.43
4. RF	.22	.14	.68**	--			-1.55	2.22
5. SDO	.54**	.60**	.22	.20	--		3.19	0.58
6. Religiosity	.21	.18	.54**	.80**	.04	--	3.03	2.03
7. Political Orientation	-.30*	-.18	-.42**	-.54**	-.17	-.45**	4.85	1.51

Note: Data represent posttest scores. RWA = Right-wing Authoritarianism, RF = Religious Fundamentalism, SDO = Social Dominance Orientation. ** $= p < .01$

Table 2

Means, Standard Deviations, and ANOVAs for Ideological Intolerance and Intergroup Attitudes by Condition

Attitude Variable	Imagined Intergroup Contact		Control Condition			
	M	*SD*	*M*	*SD*	*F*	*p*
Anti-Muslim Prejudice	2.46	1.24	3.38	1.47	8.07	.006**
Anxiety	1.80	.62	2.48	.91	12.78	.001**
RF	-2.11	2.06	-1.12	2.26	3.66	.060
RWA	2.72	1.30	3.13	1.51	1.49	.226
SDO	2.92	.38	3.38	.63	12.86	.001**

Note: RF = Religious Fundamentalism RWA = Right-wing Authoritarianism, and SDO = Social Dominance Orientation. * = $p < .05$, ** = $p < .01$.

To assess the unique contributions of both the dispositional personality predictors and the manipulation, we conducted an analysis of covariance (ANCOVA) for both anti-Muslim prejudice and intergroup anxiety. These analyses revealed that contact explains unique variability in both anxiety [$F(1,65) = 12.25$, $p = .001$] and anti-Muslim prejudice [$F(1,65) = 5.51$, $p = .022$] when simultaneously controlling for measures of ideological intolerance. Moreover, in a second set of ANCOVAs, imagined intergroup contact continued to account for unique variability in anxiety—though not anti-Muslim prejudice—even when simultaneously controlling for religious fundamentalism, right-wing authoritarianism, and social dominance orientation (Please see Tables 3 and 4).

Table 3

Analysis of Covariance for Intergroup Anxiety by Ideological Intolerance and Social Dominance Orientation

Source	SS	df	MS	F	p	Partial Eta^2
Imagined Interaction	2.48	1	2.48	5.29	.025*	.079
Religious Fundamentalism	.42	1	.42	.90	.348	.014
Right-wing Authoritarianism	.42	1	.42	.89	.348	.014
Social Dominance Orientation	10.56	1	10.56	22.52	.000**	.266
Error	29.06	62	.469			
Total	365.52	67				

Note: $* = p < .05$, $** = p < .01$ $R^2 = .427$

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Table 4

Analysis of Covariance for Anti-Muslim Prejudice by Ideological Intolerance and Social Dominance Orientation

Source	SS	df	MS	F	p	Partial Eta^2
Imagined Interaction	1.89	1	1.89	1.19	.280	.019
Religious Fundamentalism	.07	1	.07	.04	.837	.001
Right-wing Authoritarianism	.60	1	.60	.38	.542	.006
Social Dominance Orientation	27.34	1	27.34	17.14	.000**	.217
Error	98.90	62	1.60			
Total	727.12	67				

Note: $* = p < .05$, $** = p < .01$ $R^2 = .326$

A multiple regression analysis revealed that none of the ideological intolerance variables moderated the relationship between imagined contact and explicit attitudes towards Muslims (*F*s ranged from 0.57 to 1.37, *ns*).

Discussion

The data presented here clearly support our hypotheses that positive imagined interactions with outgroup members may reduce outgroup prejudices and intergroup anxiety, even among the ideologically intolerant. While these results are certainly compelling, the failure of the manipulation to explain unique variability in anti-Muslim prejudice (when also controlling for SDO) raises an interesting question: Was imagined intergroup contact simply ineffective at reducing outgroup prejudice, or is some other factor responsible for the inconsistency? While this is certainly a possibility, an alternative explanation—given that values approached the floor in the experimental group—could be that anti-Muslim prejudice was already so low prior to the manipulation that there was little room left for improvement (Hodson, 2011). On the other hand, changes in attitude may have been significant, but undetectable due to the between-groups design. To address this limitation and observe changes in attitudes within participants, a repeated measures design was required.

Study Two

In Study 1 we demonstrated that imagined intergroup contact reduces outgroup prejudice and intergroup anxiety—relative to a control condition—even among ideologically intolerant individuals. Lacking pretest scores however, we could not definitively conclude that imagined contact improved individuals' attitudes towards Muslims. Thus, in Study 2 we aimed to replicate and extend these findings using a repeated measures within subjects design. By entering pre-existing attitudes as covariates in the analyses, we were better able to examine the hypothesis that imagining a positive interaction with an outgroup member reduces intergroup anxiety and outgroup prejudice.

Study 2 also investigated the relationship between imagined contact and *implicit* attitudes. Unlike explicit attitudes—which are conscious, overt, deliberative, and commonly assessed with self-report measures—implicit attitudes are relatively more difficult to evaluate due to their covert, involuntary, non-verbal nature (Turner & Crisp, 2010; McConnell & Leibold, 2001). Given that implicit attitudes are not only more difficult to mask (Turner & Crisp, 2010), but also more resistant to change (Wilson, Lindsey, & Schooler, 2000), a significant effect of imagined contact on implicit outgroup prejudice among ideologically intolerant individuals would substantially enhance its appeal as a prejudice-reduction technique. Encouraged by Turner and Crisp's (2010) recent findings demonstrating imagined contact's efficacy in improving intergroup attitudes, we included a measure of implicit prejudice in hopes of replicating their results among ideologically intolerant participants.

Participants

Eighty-nine undergraduate students (29 men, 60 women, M_{age} = 19.51 years, SD = 2.638) were recruited from the psychology department's participant pool at the University of Maine. Thirty-eight additional students (16 men, 22 women, M_{age} = 19.24 years, SD = 1.149) who scored in the top tertile on aggregate measures of right-wing authoritarianism or religious fundamentalism in the participant pool pre-screen were also recruited by email. Participants were somewhat diverse with regards to religious affiliation (29.1% Catholic, 28.3% no affiliation, 28.3% Protestant, 3.1% Buddhist, 2.4% Jewish, 0.8% Hindu, and 7.9% selected "other") but predominantly White (86.6%); other racial and ethnic groups comprised only a minority of the sample (5.5% Asian / Pacific Islander, 3.9% Native American, 1.6% Black, 0.8% Hispanic, and 0.8% selected "other"). The prescreen was administered by the University of Maine's Department of Psychology in January 2012. Participants were recruited and completed posttest measures between January 1 and March 15, 2012. Participants received one hour of research credit for their participation. As in the first study, data from participants who self-identified as Muslim were eliminated prior to analysis.[4]

Materials and Procedure

The procedure was identical to Study 1 except in the following ways. Participants completed a prescreen prior to the study, which allowed us to control for preexisting attitudes by using their prescreen scores as covariates during data analysis. In addition to

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[4] Although 133 participants completed the survey, six were removed during data cleanup. Four participants failed to complete the manipulation, one was removed as a statistical outlier (>3 SDs from the mean anxiety score), and one participant self-identified as Muslim.

explicit attitudes and ideological intolerance measures, we also included a measure of implicit attitudes.

Implicit Attitudes. To investigate *implicit attitudes* towards Muslims we used a modified version of the Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998), adapted to evaluate attitudes towards Muslims relative to Christians, utilizing the relatively low-tech IAT approach suggested by Lemm, Lane, Sattler, Kahn, and Nosek (2008).

While both methods operate on the fundamental assumption that faster responses reflect closer associations between concepts, the conventional IAT measures the length of time it takes a participant to sort a fixed number of items (Greenwald et al., 1998), while the short-form IAT instead tests how many items a participant can sort within a fixed amount of time (Greenwald et al., 1998; Lemm et al., 2008). Implicit attitudes were measured using identifiably Christian (*Jesus, Church, Bible, Christian,* and *Gospel)* or Muslim (*Muhammad, Islam, Mosque, Muslim,* and *Koran*) target stimuli, and identifiably pleasant (*good, love, terrific, joy,* and *happy*) or unpleasant (*hatred, poison, evil, vomit,* and *bad)* attribute stimuli.

In one example block and two counterbalanced critical blocks, students were asked to sort stimuli appearing along the left side of the page into one of two columns marked by specific category pairings (*Muslim–Unpleasant/Christian–Pleasant* in the congruent block, and *Muslim–Pleasant/Christian–Unpleasant* in the incongruent block). Participants had 30 seconds in each of the critical blocks to quickly categorize as many of the 40 stimuli as possible by clicking the button in the appropriate column for each stimulus (e.g. clicking *Muslim—Pleasant* for Mosque or terrific). Responses were scored

and analyzed using the "product: square root of difference" approach, wherein the square root of the difference between the number of items correctly categorized between the two blocks is multiplied by the ratio of items successfully categorized (Lemm et al., 2008). Consistent with previous research, faster associations of *Muslim—Unpleasant,* compared to *Muslim—Pleasant,* were interpreted as implicit anti-Muslim prejudices (Rowatt, Franklin, & Cotton, 2005). The short-form IAT was always the first posttest measure presented, and each page automatically advanced after the given time elapsed (Please see Appendix F for an example block).

Results

Consistent with our first study, ideological intolerance positively correlated with self-reported measures of anti-Muslim prejudice, intergroup anxiety, religiosity, and conservatism, as did pretest scores and the implicit attitude measure. In fact, scores on the newly adapted online short-form IAT consistently correlated with both pretest and posttest measures of ideological intolerance and anti-Muslim prejudice (Please see Table 5 for descriptives and correlations). However, an analysis of covariance using measures of ideological intolerance as covariates revealed only marginally significant differences between experimental and control conditions on implicit attitudes towards Muslims, as assessed by the new short-form IAT (Please see Table 6).

To determine if the manipulation was successful in improving individual participants' explicit intergroup attitudes, we conducted analyses of covariance for both anti-Muslim prejudice and intergroup anxiety using participants' pretest scores as covariates. These analyses revealed that condition explained unique variability in anti-Muslim prejudice [$F(1,93) = 8.53$, $p = .004$, *partial eta^2* $= .084$] but not intergroup

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anxiety [$F(1,91) = 1.08$, $p = .303$] when simultaneously controlling for preexisting attitudes and ideological intolerance (Please see Tables 7 and 8).

As in the previous study, a multiple regression analysis was conducted to determine if the effects of the imagined interaction were mediated by ideological intolerance. None of the variables used to measure ideological intolerance were found to moderate the relationship between imagined intergroup contact and explicit attitudes towards Muslims (Fs ranged from 0.01 to 3.22, *ns*).

Table 5

Zero-Order Correlations Between Pretest and Posttest Intergroup Attitudes and Personality / Trait Characteristics

	Variable	1	2	3	4	5	6	7	8	9	10	11	M	SD
1.	Implicit Prejudice	--											3.29	7.81
2.	Anti-Muslim Prejudice (T1)	.31**	--										3.23	1.16
3.	Anti-Muslim Prejudice (T2)	.41**	.74**	--									3.11	1.20
4.	Intergroup Anxiety (T1)	.11	.46**	.40**	--								2.13	.82
5.	Intergroup Anxiety (T2)	.16	.41**	.48**	.53**	--							2.19	.80
6.	RF (T1)	.26**	.17	.26**	.07	.15	--						3.98	1.77
7.	RF (T2)	.33**	.21*	.32**	.13	.14	.91**	--					-1.24	1.82
8.	RWA (T1)	.44**	.50**	.46**	.22*	.29**	.34**	.43**	--				4.42	1.40
9.	RWA (T2)	.32**	.42**	.42**	.08	.18	.38**	.49**	.79**	--			3.34	1.08
10.	SDO	.28**	.45**	.67**	.35**	.43**	.24*	.34**	.47**	.43**	--		3.39	.59
11.	Religiosity	.16	.13	.16	.07	.12	.66**	.71**	.27**	.32**	.14	--	3.23	1.89
12.	Political Orientation	.12	.17	.30**	.08	.09	.21*	.27**	.14	.12	.30**	.16	3.85	1.37

Note: (T1) = Prescreen, (T2) = Posttest, RWA = Right-wing Authoritarianism, RF = Religious Fundamentalism, SDO = Social Dominance Orientation. The scales used to measure RF and RWA on the prescreen were identical to those administered in our posttest except for their scales, which ranged from 1 to 9. $^* = p < .05$, $^{**} = p < .01$

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Table 6

Analysis of Covariance for Implicit Prejudice by Ideological Intolerance and Social Dominance Orientation

Source	SS	df	MS	F	p	Partial Eta²
Imagined Interaction	168.26	1	168.26	3.29	.073†	.031
Religious Fundamentalism	213.68	1	213.68	4.17	.044*	.039
Right-wing Authoritarianism	141.17	1	141.17	2.76	.100	.026
Social Dominance Orientation	.435	1	.435	.008	.927	.000
Error	5224.93	102	51.23			
Total	7395.89	107				

Note: † $= p < .10$, * $= p < .05$, $R^2 = .157$

Table 7

Analysis of Covariance for Anti-Muslim Prejudice by Preexisting Attitudes, Ideological Intolerance, and Social Dominance Orientation

Source	SS	df	MS	F	p	Partial Eta^2
Imagined Interaction	3.97	1	3.97	8.53	.004**	.084
Anti-Muslim Prejudice (T1)	28.13	1	28.13	60.51	.000**	.394
RF (T1)	.36	1	.36	.77	.381	.008
RWA (T1)	.18	1	.18	.38	.540	.004
SDO	20.89	1	20.89	44.94	.000**	.326
Error	43.23	93	.465			
Total	1105.60	99				

Note: ** = $p < .01$, R^2 = .712

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Table 8

Analysis of Covariance for Intergroup Anxiety by Preexisting Attitudes, Ideological Intolerance, and Social Dominance Orientation

Source	SS	df	MS	F	p	Partial Eta^2
Imagined Interaction	.44	1	.44	1.08	.303	.012
Intergroup Anxiety (T1)	12.06	1	12.06	29.60	.000**	.245
RF (T1)	.36	1	.36	.88	.350	.010
RWA (T1)	.24	1	.24	.60	.441	.007
SDO	1.54	1	1.54	3.77	.055†	.040
Error	37.08	91	.41			
Total	512.80	97				

Note: † = $p < .10$, * = $p < .05$, ** = $p < .01$, R^2 = .397

Discussion

The significant and consistent correlation between implicit Muslim prejudice and the self-reported measures of explicit anti-Muslim prejudice and ideological intolerance is compelling evidence of the measure's validity. Imagined intergroup contact's inability to reduce intergroup anxiety is inconsistent with our hypotheses, our previous study, and previous research that has shown that anxiety mediates the bias-reducing effects of imagined intergroup contact (Turner et al., 2007). One possible explanation, given the high levels of variance observed in the self-reported anxiety measure, is that a larger sample size is required for a sufficiently precise assessment.

Nevertheless, imagined contact's ability to explain unique variability in anti-Muslim prejudices—even when simultaneously controlling for preexisting attitudes, right-wing authoritarianism, religious fundamentalism, and social dominance orientation—supports our hypothesis that merely imagining a positive interaction with an outgroup member can improve intergroup attitudes, even among the ideologically intolerant.

General Discussion

Consistent with our original hypothesis, we found across two studies that imagined intergroup contact is effective in improving outgroup attitudes, even among ideologically intolerant individuals. In Study 1, we demonstrated imagined contact's efficacy relative to a control condition using a national sample in a between groups design. In Study 2, we replicated those findings, and extended them using a repeated measures within subjects design to confirm that imagined contact could improve individuals' attitudes towards Muslims.

To the best of our knowledge, Study 2 marks the inaugural, promising debut of the online short-form IAT measure. Though we were unable to replicate the significant effect achieved by Turner and Crisp (2010), a correlational analysis did reveal a negative relationship between imagined intergroup contact and implicit prejudice towards Muslims. Given the intractability of implicit attitudes and the novelty of the measure, we find these results encouraging, and worthy of additional research.

Although Study 2 failed to replicate the anxiety reduction effects demonstrated in previous research (Abrams et al., 2008; Husnu & Crisp, 2010a; Turner et al., 2007), self-reported levels of intergroup anxiety nearly bottomed out in Study 1 ($M = 1.80$, $SD = 0.621$), revealing a large effect size ($eta^2 = 0.151$). Given the high degree of success observed in the first study, the high degree of variance observed in the second study, and previous research indicating a mediational role of intergroup anxiety, the discrepancy may simply reflect interference from the short-form IAT.

These data are largely consistent with a recent study conducted by Asbrock et al. (2012), which revealed that social dominance orientation and right-wing authoritarianism

differentially predict the effects of intergroup contact on prejudicial attitudes. However, where Asbrock et al. (2012) found direct intergroup contact beneficial for right-wing authoritarians but *not* social dominators, the present study reveals a significant effect of imagined intergroup contact even when controlling for social dominance orientation. This may be the first time imagined intergroup contact has been shown to have an advantage of efficacy *and* opportunity over direct intergroup contact.

Though they have not been operationalized or coded, participants' reflections on their experience (which we used as a manipulation check) to both the imagined interaction (first two reflections) and control condition (second two reflections) are also revealing:

- o *He was older, around 50. He had black hair, that was slicked back. His laugh was low, more like a hard chuckle. We talked about soccer, which he loved to play as a child. He came to the states to help his family. We then discussed my family and our traditons. Our families seemed very similar except for our dads. My dad sounded to be more* [ends]
- o *We were sitting in the north pod of the union. He was wearing a turban and had darker skin then I do. The things that we had in common were that we both lived in the same dorm, we both played basketball, we had the same major, and we were taking similar casses. It seemed that our conversation was a friendly one. He had a bit of an accent.*
- • *Muslims are a very different culture from our own. They dress very differently, and therefore are rightfully deserving of the term "towel head." They are also responsible for many terrorist attacks that have happened in the recent past. I have little ue for these extremist people. They are not good for much else besides building bombs and taking our jobs away.*

- *People associate them with terrorists. My father is racist of musslims. I think muslims are just people like you and me. There are bad muslims and good muslims just like there are bad christians and good christians. I don't agree with most of the muslims eliefs. I have nothing against muslims personally. I have met musslims and thought they were nice people. I have also met some unfriendly muslims who thought they were superior than I. Just because my father hates muslims doesn't mean I have to. My s* [ends]

These responses from Study 2 illustrate a common theme among respondents from both samples: the conflation of "Muslim" and "Arab." Though neither of the two prompts mentioned race or country of origin, many responses to the manipulation check referenced language barriers or the Middle East. If the conflation of these two mental constructs triggers both RWA (social structure and security) and RF (value-violation) style threat, it may help explain why anti-Muslim prejudice is so strong.

Limitations

Though our research provides compelling evidence to support the efficacy of imagined intergroup contact among highly ideologically intolerant and cognitively rigid individuals, it does have a number of limitations.

Although sampling from two different populations—one local and one national—strengthened the external validity of our findings, our samples from both populations were predominantly White, and either Christian or non-religiously affiliated. To an extent however, this was unavoidable, as a more diverse population would have likely resulted in higher levels of prior real contact with Muslims, and thus fewer ideologically intolerant individuals (Hodson, 2011). To provide further validity, future research should be conducted using a more diverse sample.

While our initial study suffered from a lack of pretest scores and an unequal distribution of participant error across condition, leading to slightly disproportionate cell sizes (44 participants in the control condition versus 31 participants in the experimental condition), both of these limitations were addressed in Study 2. Neither study, however, collected information about prior actual contact with Muslims, which would have allowed us to determine if prior contact was correlated with lower initial levels of intergroup prejudice.

Lastly, while our control condition has been successfully used in previous research (Turner et al., 2007; Turner & Crisp, 2010) to ensure that results reflect imagined intergroup contact, rather than simple stereotype/outgroup priming, additional control conditions would have further strengthened our findings. Moreover, given our focus on ideologically intolerant individuals, it is possible that the control task exacerbated existing prejudices. To rule out this possibility, additional research should be conducted using alternative control conditions such as no-contact control scenes (Abrams et al., 2008; Husnu & Crisp, 2010; Turner et al., 2007), and nonrelevant positive interaction (Stathi & Crisp, 2008). Similarly, future research should be conducted using a wide array of dependent variables including self-reports (e.g. explicit attitudes, likelihood of future contact, outgroup variability), IATs, behavioral measures (e.g. resource distribution games), and physiological measures (e.g. mean arterial pressure, galvanic skin response, etc.).

Applications and Concluding Remarks

While the ameliorative effects of direct intergroup contact are myriad and well documented, they are not without significant limitations. As Asbrock et al. (2012)

demonstrated, direct intergroup contact continues to face issues of efficacy and opportunity: "SDO prevents engagement in intergroup contact as well as shielding one from an improvement of outgroup attitudes after contact experiences" (p. 886-887).

The present studies address both of these limitations. Here, we have shown imagined intergroup contact to be effective among ideologically intolerant and cognitively rigid individuals in ways that even direct intergroup contact is not. Indeed, because it requires no actual outgroup contact experience—either direct or extended—imagined contact is practically applicable even when groups are highly segregated with little to no motivation for interaction.

However, we do not believe this qualifies it as a suitable replacement for existing methods of contact (Crisp & Turner, 2009). On the contrary, we believe imagined intergroup contact is most effective as an intervention technique when used in concert with other forms of contact. In a diplomatic context—peace talks between Israel and Palestine, or North and South Korea for example—imagined intergroup contact, if applied repeatedly and consistently leading up to a summit, may encourage, facilitate, and enhance direct contact by reducing perceived outgroup threat. Alternatively, in an educational context, imagined intergroup contact may be helpful in alleviating issues of racism, homophobia, and religious discrimination if elements were incorporated into assigned writing prompts. Finally, the present data also suggest that imagined intergroup contact may prove to be an invaluable tool for researchers seeking to further delineate the effects of individual difference variables (i.e. right-wing authoritarianism, religious fundamentalism, and social dominance orientation) on the relationship between contact, religion, and prejudice.

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Appendix A – Experimetrix Recruitment Statement

Experimetrix Recruitment Statement:

Title – An Imagination Exercise

You are invited to participate in a research study on imagined interactions and interpersonal attitudes. If you agree to participate, you will be asked to imagine or think about a specific scenario. After you complete the imagination exercise, you will be asked several questions about your attitudes and opinions.

This task requires your undivided attention for up to half an hour. Please make sure you only begin this experiment if you are over 18 and are willing and able to provide that attention.

Recruitment E-mail

SUBJECT: A Study of Imagined Interaction

Hello,

      You are invited to participate in a research project being conducted by Charles Bergeron, an undergraduate Psychology–Honors student, and Jordan LaBouff, a College of Liberal Arts and Sciences–Honors Preceptor of Psychology, at the University of Maine. The purpose of this study is to investigate the relationship between interpersonal experiences and attitudes towards others.

      If you decide to participate, you will be asked to perform a simple, five-minute imaginative exercise before answering a number of questions about yourself, your attitudes, and your beliefs. The study will take approximately 30 minutes to complete, and you will receive one hour of research credit as compensation.

      For more information, or to complete the survey, please click the link below.

Survey Link

Thank you in advance for your assistance,

Charles Bergeron
Jordan LaBouff, PhD
Department of Psychology
University of Maine, Orono
charles.bergeron@umit.maine.edu
jordan.laBouff@umit.maine.edu
207-581-2826

Appendix C—UMaine Students' Informed Consent

You are invited to participate in a research project being conducted by Charles Bergeron, an undergraduate Psychology–Honors student, and Jordan LaBouff, a College of Liberal Arts and Sciences–Honors Preceptor of Psychology at the University of Maine. The purpose of this study is to investigate the relationship between interpersonal experiences and attitudes towards others.

You must be 18 or older to participate

What Will You Be Asked To Do?
If you decide to participate, you will be asked to perform a simple, five-minute imaginative exercise before answering a number of questions about yourself, your attitudes, and your beliefs. It will take approximately 30 minutes to complete this study.

Risks
It is possible that some questions will make you uncomfortable. You may skip any questions that you do not feel comfortable answering, and you may terminate participation at any time.

Benefits
While there are no direct benefits to you from participating in this study, your participation will help enhance our understanding of the ways in which our personal experiences shape our attitudes towards others.

Compensation
You will receive one hour of research credit as compensation for your participation in this experiment.

Voluntary
Participation is voluntary. You may terminate participation at any time without loss of credit.

Confidentiality
No identifying information will be collected. Anonymous data will be kept indefinitely on a password-protected drive in a locked laboratory or office.

Contact Information
If you have any questions about the study, please feel free to contact Charles Bergeron—a fifth-year Psychology Honors student pursuing dual bachelor's degrees in Psychology and Political Science—or Jordan LaBouff on FirstClass (Charles.Bergeron@umit.maine.edu Jordan.LaBouff@umit.maine.edu). Additionally, if you have any questions about your rights as a research participant, please contact Gayle Jones, Assistant to the University of Maine's Protection of Human Subjects Review Board, at 207-581-1498 (or e-mail gayle.jones@umit.maine.edu).

"By clicking this link I give my consent to participate in this study. Let's get started"

"I DO NOT consent to this study and would like to leave this website"

You are invited to participate in a research project being conducted by Charles Bergeron, an undergraduate Psychology–Honors student, and Jordan LaBouff, a College of Liberal Arts and Sciences–Honors Preceptor of Psychology at the University of Maine. The purpose of this study is to investigate the relationship between interpersonal experiences and attitudes towards others.

You must be 18 or older to participate

What Will You Be Asked To Do?
If you decide to participate, you will be asked to perform a simple, five-minute imaginative exercise before answering a number of questions about yourself, your attitudes, and your beliefs. It will take approximately 30 minutes to complete this study.

Risks
It is possible that some questions will make you uncomfortable. You may skip any questions that you do not feel comfortable answering, and you may terminate participation at any time.

Benefits
While there are no direct benefits to you from participating in this study, your participation will help enhance our understanding of the ways in which our personal experiences shape our attitudes towards others.

Compensation
You will receive $.25 as compensation for your participation in this experiment.

Voluntary
Participation is voluntary. You may terminate participation at any time without loss of payment.

Confidentiality
No identifying information will be collected. Anonymous data will be kept indefinitely on a password-protected drive in a locked laboratory or office.

Contact Information
If you have any questions about the study, please feel free to contact Charles Bergeron or Jordan LaBouff (Charles.Bergeron@umit.maine.edu; Jordan.LaBouff@umit.maine.edu). Additionally, if you have any questions about your rights as a research participant, please contact Gayle Jones, Assistant to the University of Maine's Protection of Human Subjects Review Board, at 207-581-1498 (or e-mail gayle.jones@umit.maine.edu).

"By clicking this link I give my consent to participate in this study. Let's get started"

"I DO NOT consent to this study and would like to leave this website."

DEMOGRAPHICS:

Sex:

○ Male

○ Female

Please type your age (in years) in the space provided: _____

With what racial/ethnic group do you most closely identify? (Choose one):

○ African American / Black

○ Asian / Pacific Islander

○ Hispanic

○ Native American

○ White

○ Another race/ethnicity (please specify): _____

In what socio-economic bracket were you raised for most of your life?

○ Upper class

○ Upper-middle class

○ Middle class

○ Lower-middle class

○ Lower class

In what type of area were you raised for most of your life?

○ A large city

○ A suburb near a large city

○ A small city or town

○ A rural area

○ I don't know

In what type of area are you currently living?

○ A large city

○ A suburb near a large city

○ A small city or town

○ A rural area

○ I don't know

Do you believe in God?

○ Yes

○ No

○ Uncertain

What is your primary religious affiliation?

○ Protestant

○ Catholic

○ Buddhist

○ Hindu

○ Jewish

○ Muslim

○ None

○ Other religion (please specify): _____

How interested are you in religion?

1 - Not at all interested	2	3	4	5 - Moderately interested	6	7	8	9 - Extremely interested
○	○	○	○	○	○	○	○	○

To what extent do you consider yourself a RELIGIOUS person?

1 - Not at all	2	3	4	5	6	7 - Very much
○	○	○	○	○	○	○

To what extent do you consider yourself a SPIRITUAL person?

1 - Not at all	2	3	4	5	6	7 - Very much
○	○	○	○	○	○	○

How would you describe yourself <u>politically</u>?

○ Very Conservative

○ Conservative

○ Leaning Conservative

○ Moderate

○ Leaning Liberal

○ Liberal

○ Very Liberal

What is your sexual orientation?

○ Heterosexual

○ Homosexual

○ Bisexual

How many other people are in the same room where you are completing this survey?

○ 0

○ 1

○ 2

○ 3

○ 4

○ 5+

What other tasks are you doing while you complete this survey (choose ALL that apply)?

☐ Nothing - only completing this survey

☐ Watching TV

☐ Listening to music

☐ Talking with friends

☐ Reading something else (besides this survey)

☐ Eating

☐ Other (please specify): _____

RIGHT WING AUTHORITARIANISM (Smith & Winter, 2002)

Instructions: Please answer the following questions according to how much you agree or disagree with each statement. You will probably find that you agree with some of the statements and disagree with others, to varying extents.

What our country really needs is a strong, determined leader who will crush evil, and take us back to our true path.

1 - Strongly disagree	2 - Moderately disagree	3 - Slightly disagree	4 -Neutral	5 - Slightly agree	6 - Moderately agree	7 - Strongly agree
◯	◯	◯	◯	◯	◯	◯

There are many radical, immoral people in our country today, who are trying to ruin it for their godless purposes, whom the authorities should put out of action.

1 - Strongly disagree	2 - Moderately disagree	3 - Slightly disagree	4 - Neutral	5 - Slightly agree	6 - Moderately agree	7 - Strongly agree
◯	◯	◯	◯	◯	◯	◯

Once our government leaders give us the "go-ahead," it will be the duty of every patriotic citizen to help stomp out the rot that is poisoning our country from within.

1 - Strongly disagree	2 - Moderately disagree	3 - Slightly disagree	4 - Neutral	5 - Slightly agree	6 - Moderately agree	7 - Strongly agree
◯	◯	◯	◯	◯	◯	◯

It is always better to trust the judgment of the proper authorities in government and religion than to listen to the noisy rabble-rousers in our society who are trying to create doubts in people's minds.

1 - Strongly disagree	2 - Moderately disagree	3 - Slightly disagree	4 - Neutral	5 - Slightly agree	6 - Moderately agree	7 - Strongly agree
◯	◯	◯	◯	◯	◯	◯

It's better to have trashy magazines and radical pamphlets in our communities than to let the government have the power to censor them.

1 - Strongly disagree	2 - Moderately disagree	3 - Slightly disagree	4 - Neutral	5 - Slightly agree	6 - Moderately agree	7 - Strongly agree
◯	◯	◯	◯	◯	◯	◯

What our country needs most is discipline, with everyone following our leader in unity.

1 - Strongly disagree	2 - Moderately disagree	3 - Slightly disagree	4 - Neutral	5 - Slightly agree	6 - Moderately agree	7 - Strongly agree
◯	◯	◯	◯	◯	◯	◯

Gays and lesbians are just as healthy and moral as anybody else.

1 - Strongly disagree	2 - Moderately disagree	3 - Slightly disagree	4 - Neutral	5 - Slightly agree	6 - Moderately agree	7 - Strongly agree
◯	◯	◯	◯	◯	◯	◯

Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else.

1 - Strongly disagree	2 -Moderately disagree	3 - Slightly disagree	4 - Neutral	5 - Slightly agree	6 - Moderately agree	7 - Strongly agree
◯	◯	◯	◯	◯	◯	◯

People should pay less attention to the Bible and other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral.

1 - Strongly disagree	2 - Moderately disagree	3 - Slightly disagree	4 - Neutral	5 - Slightly agree	6 - Moderately agree	7 - Strongly agree
◯	◯	◯	◯	◯	◯	◯

There is nothing wrong with premarital sexual intercourse.

1 - Strongly disagree	2 - Moderately disagree	3 - Slightly disagree	4 - Neutral	5 - Slightly agree	6 - Moderately agree	7 - Strongly agree
◯	◯	◯	◯	◯	◯	◯

REVISED RELIGIOUS FUNDAMENTALISM SCALE (Altemeyer & Hunsberger, 1992)

God has given humanity a complete, unfailing guide to happiness and salvation, which must be totally followed.

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
◯	◯	◯	◯	◯	◯	◯	◯	◯

No single book of religious teachings contains all the intrinsic, fundamental truths about life.

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
◯	◯	◯	◯	◯	◯	◯	◯	◯

The basic cause of evil in this world is Satan, who is constantly and ferociously fighting against God.

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
○	○	○	○	○	○	○	○	○

It is more important to be a good person than to believe in God and the right religion.

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
○	○	○	○	○	○	○	○	○

There is a particular set of religious teachings in this world that are so true, you can't go any "deeper" because they are the basic, bedrock message that God has given humanity.

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
○	○	○	○	○	○	○	○	○

When you get right down to it, there are basically only two kinds of people in the world: the Righteous, who will be rewarded by God; and the rest, who will not.

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
○	○	○	○	○	○	○	○	○

Scriptures may contain general truths, but they should NOT be considered completely, literally true from beginning to end.

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
○	○	○	○	○	○	○	○	○

To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
○	○	○	○	○	○	○	○	○

"Satan" is just the name people give to their own bad impulses. There really is *no such thing* as a diabolical "Prince of Darkness" who tempts us.

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
◯	◯	◯	◯	◯	◯	◯	◯	◯

Whenever science and sacred scripture conflict, *science* is probably right.

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
◯	◯	◯	◯	◯	◯	◯	◯	◯

The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs.

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
◯	◯	◯	◯	◯	◯	◯	◯	◯

***All* of the religions in the world have flaws and wrong teachings. There is *no* perfectly true, right religion.**

-4 Very Strongly Disagree	-3 Strongly Disagree	-2 Moderately Disagree	-1 Slightly Disagree	0 Neutral	1 Slightly Agree	2 Moderately Agree	3 Strongly Agree	4 Very Strongly Agree
◯	◯	◯	◯	◯	◯	◯	◯	◯

SOCIAL DOMINANCE ORIENTATION (Prato, Sidanius, Stallworth & Malle, 1994)

Instructions: Which of the following objects or statements do you have a positive or negative feeling towards? Beside each object or statement, choose a number from "1" to "7" which represents the degree of your positive or negative feeling.

	1 - Very negative	2 - Negative	3 - Slightly negative	4 - Neither positive nor negative	5 - Slightly positive	6 - Positive	7 - Very positive
Some groups of people are simply not the equals of others.	O	O	O	O	O	O	O
Equality.	O	O	O	O	O	O	O
It is important that we treat other countries as equals.	O	O	O	O	O	O	O
This country would be better off if we cared less about how equal all people were.	O	O	O	O	O	O	O
To get ahead in life, it is sometimes necessary to step on others.	O	O	O	O	O	O	O
In an ideal world, all nations would be equal.	O	O	O	O	O	O	O
Increased social equality.	O	O	O	O	O	O	O
If people were treated more equally we would have fewer problems in this country.	O	O	O	O	O	O	O
It is not a problem if some people have more of a chance in life than others.	O	O	O	O	O	O	O
We should try to treat one another as equals as much as possible. (All humans should be treated equally).	O	O	O	O	O	O	O
Some people are just more worthy than others.	O	O	O	O	O	O	O
Increased economic quality.	O	O	O	O	O	O	O
Some people are just inferior to others.	O	O	O	O	O	O	O
Some people are just more deserving than others.	O	O	O	O	O	O	O

ANTI-MUSLIM ATTITUDE ITEMS

Please rate how warm or cold you feel toward the following groups (0° coldest feelings, 50° neutral feelings, 100° warmest feelings):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
Muslims	○	○	○	○	○	○	○	○	○	○	○
Arabic persons	○	○	○	○	○	○	○	○	○	○	○

Instructions: Which of the following statements do you have a positive or negative feeling towards? For each statement, mark a number from "1" to "7" which represents the degree of your positive or negative feeling. Remember, your first reaction is best. Work as quickly as you can.

	Very Negative 1	2	3	4	5	6	Very Positive 7
Most of the terrorists in the world today are Muslims.	○	○	○	○	○	○	○
Historically, Muslims have made important contributions to the world culture.	○	○	○	○	○	○	○
Muslims have little appreciation for democratic values.	○	○	○	○	○	○	○
People of the Muslim religion tend to be fanatical.	○	○	○	○	○	○	○
Muslims value peace and love.	○	○	○	○	○	○	○

INTERGROUP ANXIETY – Adapted from Stephan and Stephan, 1985

Imagine that you will be asked to complete a group project with a Muslim partner. Please indicate the extent to which you feel the emotions below in anticipating your interactions with this partner.

	Clearly does not describe my feelings	Mostly does not describe my feelings	Somewhat describes my feelings	Mostly describes my feelings	Clearly describes my feelings
Confident	○	○	○	○	○
Irritated	○	○	○	○	○
Awkward	○	○	○	○	○
Impatient	○	○	○	○	○
Frustrated	○	○	○	○	○
Stressed	○	○	○	○	○
Happy	○	○	○	○	○
Self-conscious	○	○	○	○	○
Defensive	○	○	○	○	○

Appendix F

On the next page, you will find a table like the one below with different categories. You will have 30 seconds to correctly categorize as many terms as possible (on the left side of the page) by clicking the button under the proper category. After 30 seconds, the survey will automatically advance to the next page. Please work as quickly and accurately as possible, categorizing each item before moving on to the next.

If you understand and are ready to proceed, please click below.

FLOWER - PLEASANT / INSECT - UNPLEASANT

	Flower Pleasant	Insect Unpleasant
Rose	◯	◯
Poison	◯	◯
Ant	◯	◯
Good	◯	◯
Daffodil	◯	◯
Love	◯	◯
Mosquito	◯	◯
Anger	◯	◯

AUTHOR'S BIOGRAPHY

Charles, or "Slash," as he's known to some, was born in Bangor, Maine on September 18, 1988. He was raised in Veazie, Maine and graduated from John Bapst Memorial High School in 2007. Charles graduates from the University of Maine with dual degrees in political science and psychology, and minors in legal studies and neuroscience. He is a member of Phi Beta Kappa, Pi Sigma Alpha, and Psi Chi. Charles received the Robert B. Thomson Memorial Award, the Charles Dickenson Scholarship Award, and the Undergraduate Research Exhibition Award for his presentation at the 2012 Center for Undergraduate Research showcase.

Charles plans to continue working with his advisor upon graduation, preparing his thesis work for publication. He also plans to attend graduate school, though he has not yet settled on a specific field of study.