

## Measuring and Reducing Religious Bias in Post-Conflict Zones: Evidence from Côte d'Ivoire

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*This article explores how religious bias, once it has been cultivated through politicization and violence, can be reduced. Using foundations from social identity theory and superordinate goal theory, I develop post-conflict bias reduction strategies that include competing types of superordinate messages, economic and theological, as well as different sources of those messages. To test these strategies, I use video-based information treatments coupled with Implicit Association Tests in Bouaké, Côte d'Ivoire. The experimental findings point to three conclusions. First, implicit Muslim-Christian bias in the study area remains high. Second, Christians in the study tend to be more biased against Muslims than Muslims are against Christians. Third, the effectiveness of treatments depends on the subjects who receive those treatments: theological messages are most effective in reducing bias among Muslims, regardless of their source, and strategies that rely on political leaders to deliver messages perform best among Christians, regardless of the content.*

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**KEY WORDS:** religious bias, Implicit Association Test, Côte d'Ivoire, post-conflict, experiment

Though communal conflicts in much of the world do not begin with religion, they often end up there. Along Africa's Christian-Muslim fault line (from Côte d'Ivoire to Nigeria, Sudan, and Kenya), in Northern Ireland, and to a less violent degree in the United States,<sup>1</sup> political leaders and groups have frequently benefited from transforming disputes over resources or other matters into fights in the name of God. This article takes a political-psychological approach to explore how these religious tensions, once they have been cultivated at the individual level, can be reduced. Using information treatments coupled with Implicit Association Tests (IATs) in Bouaké, Côte d'Ivoire, I measure implicit interreligious bias and experimentally test the efficacy of distinct strategies to reduce that bias.

The experiment hinges on the use of common social psychology and political science explanations for bias and conflict in order to develop strategies for post-conflict bias reduction. Specifically, social identity theorists and scholars of superordinate goals argue that the cultivation of shared beliefs and common goals can supplant contentious group differences and create a unifying identity (Gaertner et al., 1999; Hornsey & Hogg, 2000). However, successful strategies for bias reduction may also turn on the specific content of superordinate goals. Theories from political science offer competing possibilities: on one hand, some scholars explain competition and conflict as an instrumental function of efforts to control resources (Collier & Hoeffler, 2004; Fearon & Laitin, 2003;

<sup>1</sup> See accounts by Banégas (2006) on Côte d'Ivoire, Falola (1998) on Nigeria, Prunier (2005) on Sudan, and Oded (2000) on Kenya. On Northern Ireland, see McEvoy (2008); on the Christian Right, see Wilcox and Larson (2006).

Posner, 2005), indicating that superordinate goals focused on the mutual benefits of material development could reduce intergroup bias. Alternatively, some explanations for religious conflict rely on irreconcilable preference sets to explain politically exploitable divisions between members of different religious groups (Fox, 2004; Juergensmeyer, 1993; Reynal-Querol, 2002), in which case superordinate goals that highlight symbolic or theological similarities may offer the better escape from tensions.

The experimental treatments used in this study—intergroup calls for peace from public figures—are therefore designed to provide superordinate messages that target and assuage instrumental, economic concerns on the one hand and symbolic, theological concerns on the other. The study thus adjudicates between these approaches, and between the sources of those superordinate messages, as effective bias-reducing strategies at the individual level.

The city of Bouaké offers an opportune environment in which to test candidate strategies for religious bias reduction. Located in central Côte d'Ivoire and inhabited by a mix of Christians and Muslims, Bouaké became the flashpoint for a recent civil war which, despite having roots in geopolitical exclusion, came to be seen as an identity conflict between different ethnic groups and, importantly, members of the two religions (Collett, 2006; Daddieh, 2001; Toungara, 2001). Despite outward assurances that Christian-Muslim tensions ended with the 2007 peace agreement,<sup>2</sup> implicit religious bias remains high, particularly in light of the disputed 2010 election that pitted the southern, Christian incumbent (Laurent Gbagbo) against a northern, Muslim challenger and current president, Alassane Ouattara.

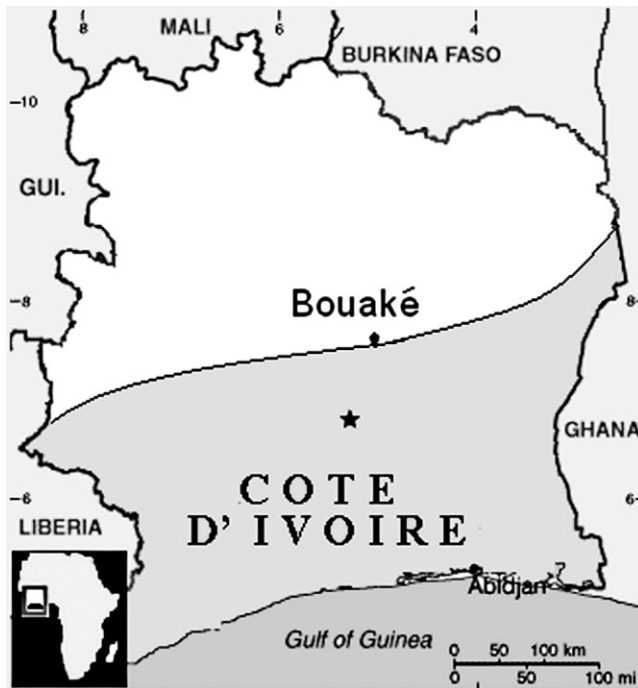
The findings suggest clear strategies for reducing interreligious tensions, but they are strategies that are most effective when tailored to particular subgroups. That is, in addition to empirical differences in bias reduction based on the specific content of superordinate goals and in the sources of those messages, the study's Christian and Muslim participants respond to bias-reduction strategies in different ways. These results demonstrate the usefulness of working at the micro, psychological level to bolster our understanding of broad political problems, and they highlight the importance of experimental treatments that mirror "real world" efforts to curb social tensions in post-conflict settings.

#### *Background: Interreligious Tensions in Bouaké, Côte d'Ivoire*

Large-scale conflict in Côte d'Ivoire began on September 19, 2002, when a failed coup attempt gave rise to a bloody rebellion. The *Forces Nouvelles* rebel group launched an early morning attack on government soldiers in Bouaké, a city of approximately 550,000 situated in central Côte d'Ivoire, and subsequently gained control of several northern cities. The result was a divided country: the *Forces Nouvelles* claimed territory from Bouaké to the northern border and established a parallel government for the region, while the government's armed forces and paramilitary *gendarmes* maintained control in the South. Ongoing clashes led to estimated casualties ranging up to 10,000 (Gervais, 2008). The Ouagadougou Peace Accord of March 2007 created a power-sharing government, and in August 2009, the rebels relinquished official control of the North. Elections postponed since 2005 finally took place in late 2010, but a disputed outcome led to renewed violence and finally the overthrow of Gbagbo in April 2011.

Figure 1 maps the approximate territories held by the *Forces Nouvelles* in the North and government forces in the South, which lasted until 2009. Importantly, this North-South division was not simply a symptom of military strategy: it also follows historical cleavages between Muslim and Christian communities. In fact, while Côte d'Ivoire as a whole is religiously mixed (40 percent Muslim

<sup>2</sup> See, for example, Blékanh's (2009) account of a new form of African democracy emerging after the agreement.



**Figure 1.** Map of Côte d'Ivoire during the Civil War. The gray South represents territory held by the national government during the civil war. The white North represents territory held by the rebel *Forces Nouvelles*. Smaller rebel movements in the West (the *Mouvement Populaire Ivoirien au Grand Ouest* and the *Mouvement pour la Justice et la Paix*) were by this point incorporated into the *Forces Nouvelles*. Map outline based on <https://www.cia.gov/library/publications/the-world-factbook/geos/iv.html>.

vs. 35 percent Christian), the most recent census figures indicate that the North is approximately 75 percent Muslim whereas the South is almost equally as Christian (INS, Côte d'Ivoire, 2001).<sup>3</sup>

It is not difficult to imagine, then, that a conflict initially rooted in geopolitical exclusion could come to be viewed through a religious lens. In fact, religious tensions simmered well before the civil war: the policy of *Ivoirité*, or “Ivoirianness,” formalized during the regime of Henri Konan Bedié in the 1990s and reaffirmed by subsequent administrations, led to official harassment of Muslim immigrants and soon became a tool for overt discrimination against all northern Muslims (Chiro, 2006; Toungara, 2001). After elections in 2000 that excluded Ouattara for a second time, violence erupted with religious undertones. Mosques and churches were burned (U.S. Dept. of State, 2001), and priests and imams were targeted and killed (U.S. Dept. of State, 2003). In Bouaké, the ensuing conflict brought the city to a halt, and communal violence ultimately altered the religious balance from a slight Christian majority to a Muslim one, as many Christians fled the rebel-held city.

### Conceptualizations of Interreligious Conflict

Social scientists have conceptualized the general problem of intergroup and interreligious conflict in different ways. Of particular relevance to the goals of this article are theories of social

<sup>3</sup> Bassett (2003) suggests that fairly widespread religious and ethnic mixing undermines descriptions of Côte d'Ivoire as divided between a Muslim North and a Christian South. Roubaud (2003), however, notes from research conducted by the DIAL project that only 5% of the northern-based ethnic groups are Christian, and only 5% of the Southern-based ethnic groups are Muslim. Collett (2006) argues that the perception of a country divided by identity trumps geographic mixing, noting that Muslims residing in the South are nevertheless referred to as members of “la communauté nordiste.”

identity and superordinate goals from social psychology and of instrumental versus symbolic foundations for group conflict from political science.

Social identity theory rests on the notion that individuals face uncertainty regarding appropriate attitudes and behaviors in social settings (Tajfel & Turner, 1979; Turner, 1982). To remedy that uncertainty and to bolster self-esteem, people categorize themselves socially, assigning favorable attributes to their own in-groups and correspondingly negative attributes to out-groups (Tajfel & Turner, 1979). The relative status of competing groups or subgroups becomes salient as members struggle to reshape the status quo in favor of their own group (Hornsey & Hogg, 2000). In a religious identity context, social beliefs of this sort are fueled by perceived differences in status, scripture, and access to power, as well as in narratives of origin and transnational influence. Thus, in Côte d'Ivoire, the perception of religious tensions can be viewed as part of the ideological struggle to reshape the status quo of identity groups, and the attitudes and behaviors of Northern Muslims and Southern Christians more broadly bespeak a desire for both belonging and political recognition.

Superordinate goals provide an outlet for overcoming perceived intergroup differences. Made famous by Sherif et al.'s Robbers Cave experiment (Sherif, Harvey, White, Hood, & Sherif, 1961),<sup>4</sup> they unite ostensibly opposing groups by requiring cooperation for successful achievement of outcomes. From superordinate goals emerge superordinate identities—group types that subsume those opposing groups and render them subgroups of some broader, shared label. A university identity can subsume campus liberals and conservatives, for example, and the superordinate identity of human beings encompasses different racial groups. In testing strategies to reduce the potential for renewed interreligious tensions in Côte d'Ivoire, superordinate goals and identities underpin the experimental treatments.

Contemporary political scientists often explain intergroup disputes as functions of instrumental efforts to accumulate land, materials, wealth, or power (Collier & Hoeffler, 2004; Fearon & Laitin, 2003). Others relate intergroup tensions to the relative size and location of groups: cleavages are thought to be most salient where they generate minimum-winning coalitions (Posner, 2005), where societies are polarized (Horowitz, 1985), or where multiple cleavages overlap (Lipjhart, 1968). In each of these cases, the goal of dispute is instrumental, as groups seek to improve their relative supply of resources.

Alternatively, some intergroup disputes may be characterized as symbolic: divisions emerge not over resource or power disagreements but over a perceived irreconcilability of preferences. Tensions of this sort may be particularly apparent between religious groups, where divergent behavioral guidelines and sacred texts can be exploited (Berger, 1967; Iannaccone, 2001). Scholars note several features that can foster religious divisions: Laitin cites the “pure doctrine” of religions (1978) that prohibits “bi-religiosity” (2000). Reynal-Querol (2002) argues that religious guidelines are exclusive and nonnegotiable. Others note that world religions differ in their use of language (Sanneh, 1994), hierarchy (Kalyvas, 2000), and law (Haynes, 1999), all of which can be used to calcify religious fissures. The implication is not that religious groups fall unavoidably into conflict, but that when religion becomes the lens through which conflict is viewed, different remedies may be warranted.

How do *implicit* attitudes regarding interreligious differences relate to these theories of differentiation and conflict? Implicit attitudes often reside below the level of conscious awareness, yet they can inhibit intergroup cooperation and peace primarily through discriminatory practices (Pearson, Dovidio, & Gaertner, 2009). Evaluating implicit attitudes is thus critical to understanding and addressing group-level tensions whenever sociopolitical sensitivities or risks to personal safety preclude the overt expression of intergroup bias. Furthermore, evidence has shown that implicit

<sup>4</sup> In the Robbers Cave study, two groups of randomly assigned adolescent boys at summer camp first formed antagonistic attitudes when working toward separate ends but then developed cooperative attitudes when experimenters altered the goals to make them shared goals.

attitudes are reliable predictors of future behavior: doctors who exuded negative attitudes toward people of African descent (as compared to Caucasians) were less likely to prescribe comparable medications to African American and White patients with the same condition (Green, Carney, Pallin, Iezzoni, & Banaji, 2006), and negative implicit attitudes towards AIDS covaried with a tendency to avoid people potentially affected with the disease (Neumann, Hülsenbeck, & Seibt, 2003). Implicit religious bias can thus be taken as a potential precursor to interreligious tensions and, ultimately, conflict.<sup>5</sup>

Studies of implicit attitudes have evaluated bias driven by race (Craemer, 2010; Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002), gender (Karpinski & Hilton, 2001), sexual orientation (Banse, Seises, & Zerbes, 2001), disease (Neumann et al., 2003), obesity (Teachman, Gapinski, Brownell, Rawlins, & Jeyaram, 2003), and a host of other dimensions. Implicit attitudes can also account for closeness to, as opposed to bias against, out-group members (see Craemer, 2008), and for the effects of things like religious language on implicit attitudes (Albertson, 2011). Whereas implicit attitudes are typically characterized by a slower process of change (Rydell & McConnell, 2006), they may nevertheless be altered via the introduction of new information or contextual stimuli (Barden, Maddux, Petty, & Brewer, 2004; Rydell & McConnell, 2006; Teachman et al., 2003). Introducing superordinate goals, the priming strategy employed in this study, can act to reduce implicit bias by providing a common in-group identity (Van Bavel & Cunningham, 2009). The explicit aim is to adjudicate between the bias-reducing effects of superordinate identities built on instrumental, economic interests versus those constructed around theological similarities.

Finally, the average effects of superordinate goals on implicit attitudes may be moderated by the particular religious traditions to which subjects adhere—in this study, primarily Islam or Christianity. First, groups perceived as underprivileged or of lower status may demonstrate favoritism, or at least relatively less bias, toward more privileged groups (Jost, Banaji, & Nosek, 2004). Given the long history of Christian leadership in Côte d'Ivoire, the reliance on *Ivoirité*, and the ethno-religious and regional discrimination that affected Muslims and underpinned the civil war, we might expect that the “higher status” Christian community would exude greater baseline bias toward Muslims than Muslims would toward Christians. Second, differential attachments to scripture may affect perceptions of the theological differences between religious groups, as the more devout tend to adopt holier-than-thou interpretations (Rowatt, Ottenbreit, Nesselroade, & Cunningham, 2002). By the same token, superordinate goals rooted in similarities from Christian and Muslim scripture should have greater impact on group members familiar with scriptural tenets, insofar as they would recognize those commonalities to be accurate and part of the bigger theological picture. Third, religious groups, like other social identity groups, may differ in terms of access to elites and to power. Insofar as political alienation can engender social mistrust (Schwartz, 2009), Muslims in Côte d'Ivoire—long outsiders in the political process—may be expected to view calls for peace from political leaders with greater skepticism than would their Christian counterparts. In this sense, the sources of superordinate messages must be accounted for along with their content.

To summarize the link between theory and empirical application in this article, superordinate goals unite opposing groups by generating an overarching identity, so the strategies for reducing interreligious bias are all based on this framework. However, the social science literature suggests two distinct and effective types of superordinate goals: opposing groups may be united by shared economic interests, or they may find common ground on symbolic, theological matters. To test the hypotheses outlined above and thereby determine the best strategy for reducing religious bias in post-conflict settings, I rely on results from a controlled experiment conducted in Bouaké in the spring of 2009.

<sup>5</sup> Implicit bias is certainly not a *sufficient* predictor of future conflict, and it may be a *necessary* predictor only when groups are mobilized to engage in violence. Nevertheless, the presence of individual-level bias along politically salient lines would make the task of initiating, maintaining, or renewing conflict undoubtedly much easier.

## Method

Reducing interreligious bias requires three steps: (1) generating measurements of bias at a baseline; (2) implementing bias-reducing strategies (or experimental treatments that replicate real world strategies); and (3) evaluating outcomes anew under these altered conditions. Treatments that result in lower levels of bias relative to the baseline can be taken as effective remedies. Among several alternatives, the treatment that generates the greatest relative reduction in interreligious bias may be considered the most effective of the tested strategies.

Measures of conflict-related behavior that rely on participation in youth groups or extremist organizations as a proxy (Reno, 2000), or that query subjects through surveys (Humphreys & Weinstein, 2006; McPhail, 1971), can effectively evaluate combatants' roles in conflict. This study, however, explores tensions that emerged along religious lines and spread once conflict had begun, suggesting the need for a measure with wider reach. Public opinion surveys can address intergroup tensions (see Afrobarometer, 2009), but they capture only reported attitudes and are subject to bias due to socially desirable responses: respondents may be unwilling and/or unable to reveal sentiments that accurately foretell the potential for future intergroup conflict. An improvement has come from recent studies that measure distance between social groups via behavioral economics games that measure behaviors rather than attitudes or stated claims (Hoffman, McCabe, & Smith, 1996; Habyarimana, Humphreys, Posner, & Weinstein, 2007). A new and important contribution to the literature on communal conflict is the attention to latent measures of intergroup tension. Studies in American politics, for example, have begun employing brain-imaging techniques to explore underlying political preferences and bias (Schreiber, 2005; Westen, 2007). While those techniques are not easily applicable to field studies in Africa, they suggest a new approach focusing on implicit or subconscious preferences in political science.

### *Implicit Association Tests*

Implicit Association Tests (IATs) offer a lower-tech escape from the problem of measuring outcomes that participants are unable or unwilling to reveal. Since the mid-1800s, scholars have used latency in response times to stimuli as a measure of relative preferences (see Donders, 1868/1969). Implicit Association Tests (Greenwald, McGhee, & Schwartz, 1998) take that practice a step further by generating associations between pairs of concepts—categories (such as Christian and Muslim religious groups) on the one hand and attributes (good-bad) on the other. The test is performed as follows: participants are shown words or pictures representing categories and attributes and are asked to rapidly classify them. The first block of trials associates one category (e.g., Christian) with good and the other category (e.g., Muslim) with bad, by asking the participant to make a left-side notation for Christian and good stimuli and a right-side notation for Muslim and bad stimuli. The second block of trials alters the association (Christian-bad and Muslim-good). Differences in the latency of response times provides an index of implicit bias: if participant X completes her trials more rapidly when Muslim is associated with good and Christian is associated with bad, as opposed to the alternative, it can be inferred that she has a pro-Muslim (or anti-Christian) bias. Gaming the test is exceedingly difficult, since the rapid classification method undermines any potential for conscious manipulation. To date, over 200 published studies have relied on IATs to gauge individual-level biases (Lane, Banaji, Nosek, & Greenwald, 2007).

IATs typically rely on a computer-based format. Among nontraditional populations (e.g., conference attendees, train riders, or campers), however, paper-based IATs can be more appropriate (Lemm, Lane, Sattler, Khan, & Nosek, 2007). In this study, I used a paper-based format both to reach a wide audience in the field in Africa and to test participants in a familiar manner, as few in the study area would have had prior experience manipulating keyboards for testing purposes. For paper-based

IATs, one category (e.g., Muslim) and one attribute (e.g., good) appear at the top-left and the other paired category and attribute (e.g., Christian+bad) appear at the top-right. Participants consider columns of words that represent Christian, Muslim, good, or bad, and they mark a left-side or right-side circle next to each, corresponding to the position of category and attribute labels at the top. Instead of holding the number of responses fixed and allowing the completion time to vary, paper-based tests fix the amount of time a participant is given and rely on differences in the number of correct categorizations to measure implicit bias.

Participants in Bouaké were randomly selected (the process is described below). Prior to the test, they gave their voluntary consent to participate and then practiced using Sport and Animal categories. The actual test consisted of the two blocks depicted (in French) in Appendix A. Figure A.1 shows the first block of trials, in which Muslim+good and Christian+bad are the paired associations. Words depicting good and bad could be adjectives or nouns: happy, evil, magnificent, angry, love, hatred, etc. To depict Muslim and Christian, the study exploited the easy recognizability of Muslim and Christian names: Mohamed, Paul, Fatima, Christine, Ibrahim, Joseph, and so on.<sup>6</sup> Figure A.2 alters the associations, pairing Christian+good and Muslim+bad. Each block was presented on a single page. Participants were asked to look at the labels at the top of the first page for five seconds. They were then given one minute to work their way down the column and over to the second column on the page, completing as many trials as possible (out of a maximum of 40). They were told to avoid making mistakes but to continue if they did make one. They were stopped after exactly 60 seconds, and the process was repeated on the second block.

The scoring of bias relies on the number of correctly completed trials from the two blocks. If a participant completed more trials when Muslim was paired with good and Christian was paired with bad than she did under the alternative, evidence of pro-Muslim (or anti-Christian) bias would exist for that participant. To account for the unwanted artifact of individual differences in response speeds, Lemm et al. (2007) recommend the *product: square of difference* measure, calculated as  $(X/Y*\sqrt{X-Y})$ , where X is the greater of correct responses on a sheet and Y is the smaller. If, in the calculation of anti-Muslim bias (for example), correct responses from the Muslim+good sheet outnumber those on the Muslim+bad sheet, resulting values should be multiplied by  $-1$  to preserve the direction of the bias.

### *Experimental Treatments as Independent Variables*

Implicit Association Tests in and of themselves can provide a baseline measure of bias, which is critical for addressing potential moderating effects of group membership. However, they cannot alone provide insight into strategies aimed at reducing that bias. By coupling IATs with information treatments, the experiment can be leveraged to test the relevance of competing theories as they pertain to the reduction of intergroup tensions.

Observational analyses of real-world strategies aimed at reducing bias suffer from a multitude of shortcomings. Principally, the researcher is unable to control for the substance of those strategies (such as interfaith dialogue), which may introduce contamination when analyzing the effects of one versus another. Furthermore, the source through which the bias-reducing effort is delivered cannot be controlled, thereby introducing unwanted measurement error. One could be influenced by a leader's charisma, for example, in addition to his message. The treatments employed in this study were designed to avoid those pitfalls, by systematically manipulating both the message and the source. They took the form of public service videos calling for interreligious peace.

<sup>6</sup> Names were selected based on pretest focus groups conducted outside of the sample population. The names that participants most easily classified as Muslim or Christian were included in the IATs.

The substance of the video treatments appealed discretely to instrumental and symbolic motivations, in both cases relying on superordinate goals to unite Christians and Muslims. One treatment, in keeping with the instrumental explanation for division, stressed the interdependence of economic interests. Specifically, these messages included four key components:

- Development strategies that can aid both Christians and Muslims;
- The ability of the government to ensure adequate land and support to both groups;
- Contributions that both Christians and Muslims make to the economic success of Côte d'Ivoire; and
- Evidence from other countries that Christians and Muslims working together generate improved socioeconomic conditions.

A second set of treatments aimed to mitigate perceived irreconcilability between Christian and Muslim rules or tenets, in keeping with the theological, symbolic explanations for division. These public service videos also included four key components:

- Shared Christian and Muslim belief in one God;
- A shared Abrahamic history;
- Similarity in Christian and Muslim teachings regarding key social issues; and
- A desire shared by Christians and Muslims to attain salvation, based on personal attitudes and peace-supporting conduct.

The treatments were thus designed to provide explicit, comprehensible information to participants, a strategy shown in other studies to affect levels of implicit bias when administered prior to an IAT (Teachman et al., 2003). In addition to the messages, the sources of these appeals were altered. If one believes that resolving intergroup tensions is a fundamentally political issue, messages delivered by political leaders—who may be perceived as most steeped in the costs and benefits of political outcomes—may be most effective. By contrast, if religion is considered a domain distinct from politics, bias-reducing messages may be most effective delivered by religious leaders. To account for these potential effects, each speech was delivered by a pair of political leaders and a pair of interfaith religious leaders. Importantly, the messages (economic vs. theological) and the speakers (political vs. religious) could be orthogonal just as they could covary.<sup>7</sup>

The experiment thus consisted of four different treatment groups and a control group. The notation I adopt for treatments lists the source followed by the message, so *Pol-Econ* refers to political leaders delivering the economic speech, and *Relig-Theo* refers to religious leaders delivering the theological speech.

The speeches were performed by two professional actors in Abidjan, the economic capital (located far from Bouaké). To alter the source of the appeals, the same two actors—neither of whom professed a strong religious or political identity—dressed and identified themselves as members of opposing political parties in the first two treatment videos and as leaders from opposing religious groups in the last two. One potential source of bias in the study is that the depictions of the Christian and Muslim leaders may elicit perceptions that, as a result of their attire, they belong to particular *subgroups* within each religion, thereby disguising *intra*-religious sentiments as *inter*religious ones. To preserve the statistical power of large Christian and Muslim sample sizes, the research team tested clothing options for the actors among a mixed-gender focus group in the Bouaké region and used the

<sup>7</sup> In real-world scenarios, of course, the distinction between religious and political leaders may be problematic: religious leaders may be viewed informally as political leaders, and vice versa. These roles are presented as orthogonal in the treatments in order to ascertain the discrete effects of religious versus political sources, but practitioners employing intergroup calls for peace as a bias-reducing strategy would want to bear the potential overlap of leader's identities in mind.



attire chosen as “most widespread in Christianity/Islam” (rather than creating treatments based on subgroups within each religion). In Bouaké, most Christians are mainline Catholics and most Muslims worship at community mosques, so fears of intragroup distinctions may be less critical there than in other contexts.<sup>8</sup>

To alter the substance of the treatments, the actors performed the socioeconomic script in the first iteration and again (in identical fashion, only with different attire) in the third iteration. Similarly, they performed identical renditions of the theological script in the second and fourth renditions, changing from political to religious attire. The video treatments lasted approximately five minutes and were viewed by participants on portable DVD players with 7” screens.

To summarize the treatment process, participants in the experiment were randomly assigned to receive one of four treatments or to be placed in a control group. The treatments were (1) *Pol-Econ*, (2) *Pol-Theo*, (3) *Relig-Econ*, and (4) *Relig-Theo*. Those assigned to the control group did not view any public service video.<sup>9</sup> Participation began with an overview of the experiment and voluntary consent. Subjects then performed the practice IAT to familiarize themselves with the test. Those assigned to treatment groups then watched the appropriate public-service announcement. Immediately following the treatments, subjects took the actual IAT to measure their implicit religious bias. After working through the two blocks of trials (each lasting 60 seconds), participants were asked to complete a brief questionnaire to provide demographic information and basic religious and political views.

### Sample

The study includes observations from 651 participants in Bouaké, conducted in April and May of 2009. Efforts were made to ensure a random sample of the population, given constraints imposed by the treatment design. Households were selected using a fixed-interval method. Within each targeted household, a second level of randomization took place to select individual participants. The sampling procedure stratified subjects by gender and age group.

The principal constraint to a purely randomized sample was language: participants needed a basic level of oral and written comprehension of French in order to understand the information treatments and to classify the words during the IAT. Bouaké is a fairly cosmopolitan town, and the literacy rate of approximately 68% is well above the national average of 50%.<sup>10</sup> The use of French at the street level is also widespread, owing to the decades-long influx of migrants that necessitated the use of a common language. Thus, the proportion of French-speaking inhabitants is higher in Bouaké, Côte d'Ivoire than would be expected in other study sites in West Africa. Nevertheless, the treated:intention-to-treat ratio was fairly low by the standards of field experiments in Africa, at 73%. Via random selection, 891 individuals were approached in their homes, and 651 were deemed to have a sufficient understanding of French to participate in the experiment.<sup>11</sup> Those who did not speak French were asked to take part in a basic demographic survey.

Concerns about the generalizability of the findings would arise if there were reasons to suspect that individuals excluded from the experiment for language reasons behave differently than those

<sup>8</sup> A second potential source of bias could be ethnic group similarity between the actors and participants in the experiment. Pretest focus-group members were thus asked to guess the ethnicity of the actors; since only 39% correctly identified the ethnic categories to which the actors belong, this source of bias is unlikely.

<sup>9</sup> During preexperiment testing, subjects in a control group were randomly assigned to see no video or to see an innocuous video of African dance. The two sets of control subjects in preexperiment testing did not differ statistically in terms of IAT measures, however, and those who saw the dance video found the disconnect between video and IAT content to be distracting. For this reason, and because subjects were not aware of treatments given to other subjects, the decision was made to show no video to subjects in the control group.

<sup>10</sup> National-level data obtained from the CIA World Factbook (2009). Bouaké-level data obtained directly from the *Institut National de la Statistique*, Republic of Côte d'Ivoire (INS, 2010).

<sup>11</sup> Evaluations were made by experimenters based on introductory conversations and explanations of the study.

**Table 1.** Descriptive Statistics of Subjects

	(1) Participants	(2) Excluded	(3) <i>p</i> -value	(4) Christians	(5) Muslims	(6) <i>p</i> -value
Sample Size ( <i>N</i> )	651	240	–	223	369	–
Male (%)	0.54 (.50)	0.49 (.50)	0.081	0.51 (.50)	0.56 (.50)	0.111
Age (Mean)	28.65 (9.3)	35.10 (10.2)	0.038	28.38 (8.0)	28.85 (9.8)	<i>n.s.</i>
Education (Mean Years)	8.68 (3.33)	4.90 (3.02)	0.008	8.54 (3.68)	8.79 (3.07)	<i>n.s.</i>
Formal Employment (%)	0.55 (.50)	0.22 (.40)	0.001	0.54 (.49)	0.57 (.50)	<i>n.s.</i>
Born in Bouaké	0.78 (.40)	0.81 (.38)	<i>n.s.</i>	0.78 (0.52)	0.77 (.39)	<i>n.s.</i>
Malinke/Senoufo (%)	0.59 (.50)	0.62 (.48)	<i>n.s.</i>	0.29 (.39)	0.74 (.48)	0.001
Muslim (%)	0.57 (.50)	0.55 (.49)	<i>n.s.</i>	–	–	–
Attend Religious Services Regularly (%)	0.74 (0.48)	0.72 (0.46)	<i>n.s.</i>	0.73 (.42)	0.83 (.39)	0.072

*Note.* Standard errors in parentheses. Columns 3 and 6 present *p*-values for difference-of-means tests on participants vs. excluded individuals and on Christians versus Muslims, respectively. A notation of “*n.s.*” indicates *p*-values above 0.10 and thus differences that are not significant at the 90% confidence level. Formal employment indicates the proportion of individuals working in the formal, as opposed to subsistence or informal, sector. Malinke/Senoufo are the predominant northern ethnic groups. Regular religious service attendance indicates at least weekly.

included, with respect to the outcome of interest. To verify that this is not the case, Table 1 compares results from the demographic surveys of excluded and included subjects.

As Columns 1 and 2 of Table 1 indicate, anticipated differences across participants and excluded individuals emerge with respect to age, education, and job status; this is to be expected given that some elderly (who experienced childhood when schooling was less widespread), those with little or no education, and those working in subsistence or informal jobs would be less likely to be literate. Differences in birthplace, gender, ethnic group membership, religious group membership, and religious participation, however, are not statistically different from zero (see Column 3 of Table 1 for *p*-values in difference-of-means tests). On a theoretical level, moreover, there are no clear reasons to suspect that French speakers with more schooling and better jobs would hold stronger or weaker implicit religious biases: progressive and conservative churches and mosques alike count the literate and illiterate among their members, suggesting that religious sentiments do not follow educational experience.

A secondary concern, also addressed in Table 1, is that any differences in bias that appear across Muslim and Christian participants may be the result of demographic differences in the two communities rather than of the perceived status of the groups (or something else about the religions per se). For example, if Muslims are less educated and lower education correlates with greater bias, any apparent effects of religious group membership may be spurious. In fact, as Columns 4 through 6 of Table 1 indicate, there are no statistically significant differences between Christian and Muslim subjects with respect to age, education, or employment status. The only major demographic difference between Christians and Muslims in the study comes in their ethnic group identification, an artifact of overlapping religious and ethnic identities in Côte d’Ivoire. Finally, worth mentioning is the fact that 57% of participants self-identify as Muslim, whereas just over one-third identify as Christians (primarily Catholic). Assuming a fairly representative sample of Bouaké’s post-conflict

population, this represents a significant shift from pre-conflict figures, when 55% of Bouaké residents were Christian (Gervais, 2008)—a shift consistent with the fact that Christians left Bouaké in greater numbers than Muslims when the *Forces Nouvelles* gained control (Le Journal de l'Economie, 2009).

## Findings

On average, subjects correctly completed 24.2 trials per 60 seconds on each Block of the IAT. The average error rate of 1.9% (incorrect trials/total trials) is lower than the 5–6% error rate in other IATs conducted among, for example, American university students (Lemm et al. 2007), but response speeds were also lower. To protect against order effects, half of the subjects were randomly assigned to complete the Muslim+good/Christian+bad block first, while the other half completed the Christian+good/Muslim+bad block first.

### Baseline Results

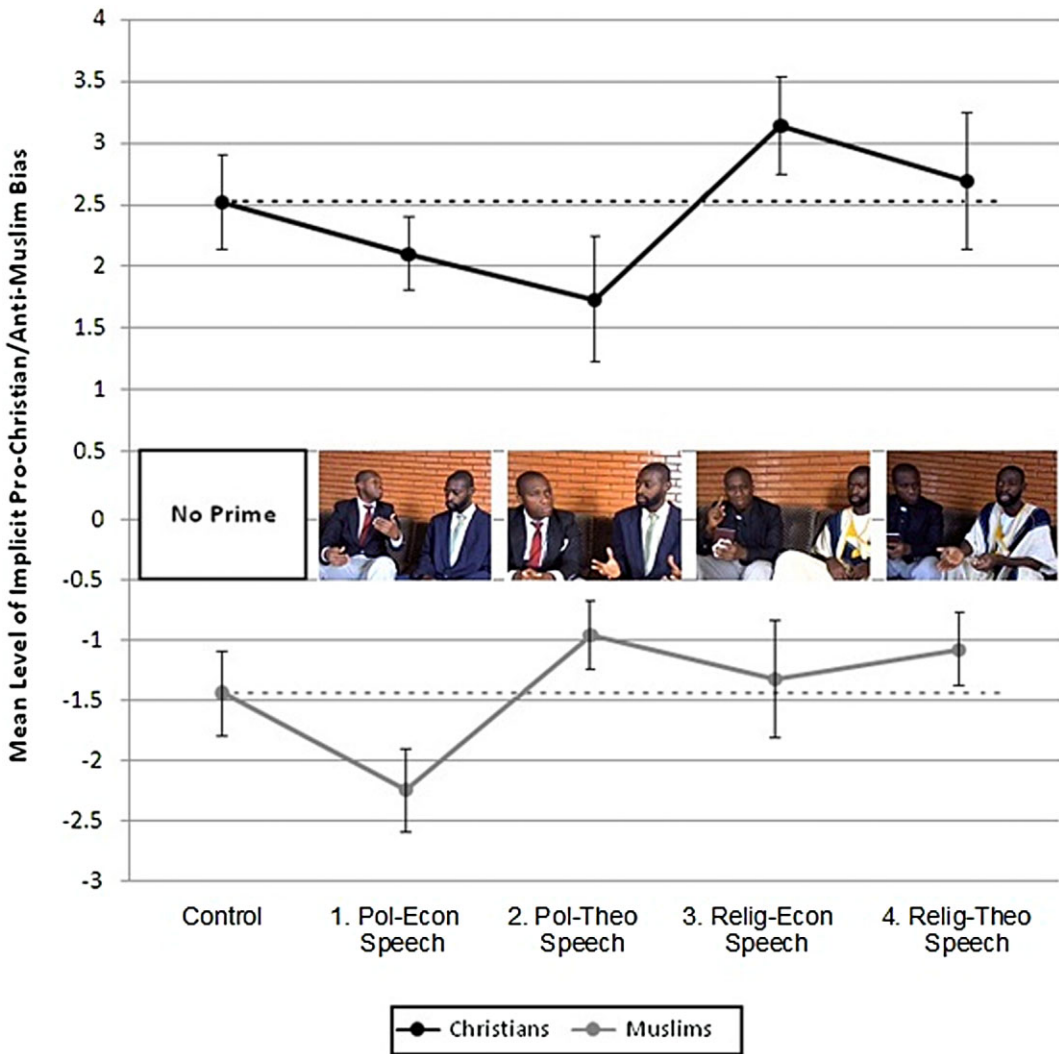
The baseline level of implicit religious bias in Bouaké, using the absolute value of the IAT score averaged across all subjects in the control group, is strong. For interpretive purposes, IAT scores with a Cohen's *d* statistic<sup>12</sup> of 0.0–0.30 are considered weak; those with a Cohen's *d* between 0.30 and 0.70 are labeled moderate; and those above 0.70 are considered strong. The average among control-group participants in this study is 1.86, well above the moderate-strong threshold but not as high as levels of bias reported in other studies concerning, *inter alia*, race, obesity, and disease (Lane et al., 2007).

Christians in the control group demonstrate a strong pro-Christian/anti-Muslim bias (IAT = 2.51). Muslims in the control group score a mean of –1.43 on the same scale, suggesting a pro-Muslim/anti-Christian bias. In absolute value terms, religious bias among Christians is significantly stronger than among Muslims (2.51 vs. 1.43, *p*-value from a two-tailed t-test = .001). By way of interpretation, an IAT score of 1.43 would represent a participant who correctly classified 26 trials on one Block and 24 on the other; a bias score of 2.51 would mean classifying 26 trials on one Block and only 21 on the other. This finding confirms the hypothesis that the group perceived as having greater social status also demonstrates stronger bias toward the out-group: despite the fact that Muslims in Bouaké are at least as educated as their Christian counterparts and just as likely to be employed in the formal sector, the long history of Christian sociopolitical advantage in Côte d'Ivoire has accorded Christians a place of higher status. As a result, the baseline implicit bias results indicate that Christians tend to look down upon Muslims to a greater degree than Muslims feel antipathy toward Christians.

### Treatment Effects

First, I consider the average treatment effects of precise combinations of source and message, across all subjects. The *Pol-Econ* (IAT = 2.387), the *Relig-Econ* (2.567), and the *Relig-Theo* (1.989) treatments all fail to significantly reduce interreligious bias in absolute value terms. Only the *Pol-Theo* treatment (1.603), featuring political leaders delivering the speech about theological similarities, approaches statistical significance in terms of reducing religious bias relative to the baseline (*p* < .10). Given the design strategy for the control group (described in fn. 9), the possibility that the treatment effects result simply from witnessing some kind of intergroup interaction (via the video treatments) cannot be ruled out. However, insofar as the average effects cut in different

<sup>12</sup> Cohen's *d* effect sizes for single sample tests are computed as the absolute value of the sample mean divided by the sample standard deviation; the range is equivalent to the range for standard deviation.



**Figure 2.** Treatment effects on levels of religious bias. X-axis represents assignment to the control group or one of four treatment groups. Y-axis is in terms of mean IAT scores, computed using the product: square root of difference algorithm. Bars represent 95% confidence intervals. Dotted lines represent baseline levels of bias among Christians and Muslims, based on scores from control-group participants.

directions, in some cases improving upon and in others exacerbating baseline bias, this concern should not undermine the inferential value of the treatments, relative to one another.

Moderating effects of Christian and Muslim group membership provide a deeper level of insight: if, for reasons suggested in the hypotheses above, Christians and Muslims respond differently to changes in the source and substance of peace-building messages, treatment effect heterogeneity across Christian and Muslim subjects should be evident in the results.

Figure 2 illustrates the differential effects of source and message manipulations on Christians and Muslims.<sup>13</sup> Moving from left to right on the figure, the *Pol-Econ* treatment resulted in a mean

<sup>13</sup> Not shown are participants who self-labeled as traditionalists, practitioners of other religions, or those who stated that they did not belong to any religion. Together, they represent approximately 9% of the sample.

**Table 2.** Multivariate ANOVA with Source, Message, and Subject’s Religion against IAT Scores

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	214.042 <sup>a</sup>	11	19.458	16.061	.000
Intercept	1863.016	1	1863.016	1537.744	.000
Message	20.080	1	20.080	16.574	.000 ***
Source	14.859	1	14.859	12.265	.000 ***
Religion	77.283	2	38.641	31.895	.000 ***
Message * Source	1.658	1	1.658	1.369	.242
Message * Religion	14.161	2	7.080	5.844	.003 **
Source * Religion	20.650	2	10.325	8.522	.000 ***
Message * Source * Relig	6.272	2	3.136	2.588	.076 †
Error	774.165	639	1.212		
Total	4055.104	651			
Corrected Total	988.206	650			

Note. a.  $R^2 = .217$ , Adjusted  $R^2 = .203$ . Dependent variable is the absolute value of the IAT score for implicit bias. Source is coded 1 for Political leaders, 0 for Religious leaders. Message is coded 1 for Economic, 0 for Theological. Religion is coded 0 for Christian, 1 for Muslim, 2 for Other/None. † $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

IAT score of 2.10 for Christians and  $-2.24$  for Muslims. In other words, relative to their respective Control group baselines of 2.51 and  $-1.43$ , the video that features political leaders discussing economic issues reduced bias among Christians (with close to statistical significance,  $p = .084$ ) but actually increased bias among Muslims ( $p = .01$ ). The *Pol-Theo* treatment significantly reduced bias among both Christians (1.73 vs. 2.51 baseline,  $p = .013$ ) and Muslims ( $-0.96$  vs.  $-1.43$  baseline,  $p = .037$ ). The *Relig-Econ* treatment made bias significantly worse among Christians (3.14 vs. 2.51,  $p = .026$ ) but did not have a significant effect on Muslim participants. Finally, the *Relig-Theo* treatment was not effective among Christians but appears to have had a bias-reducing effect on Muslims, though not at standard levels of statistical significance ( $-1.07$  vs.  $-1.43$ ,  $p = .096$ ).

To evaluate the interactive effects between treatments, I turn to a series of ANOVA outputs. Demographic features (education, age, gender, employment in the formal sector, and birthplace) are balanced across the four treatment groups and the control group, so the ANOVA outputs focus exclusively on the experimental treatments and on subjects’ religious identities.

A multivariate ANOVA with IAT scores as the dependent variable and all three predictors of interest—the source treatment, the message treatment, and the religious identity of subjects—determines the combined effect of these variables on mean implicit bias. This strategy accounts for interactive effects as well as differences in means. As Table 2 illustrates, the assignment of a political versus a religious source ( $F(1) = 6.275$ ,  $p = 0.012$ ,  $p < 0.05$ ), the assignment of an economic versus a theological message ( $F(1) = 30.667$ ,  $p = 0.000$ ,  $p < 0.001$ ), and self-identification as either Christian, Muslim, or Other/None ( $F(2) = 37.762$ ,  $p = 0.000$ ,  $p < 0.001$ ) are all highly significant, confirming statistically the hypotheses that the source, the message, and the religious identity of subjects all matter in terms of main effects.

In terms of interactive effects, Table 2 also indicates highly significant interactions between source and religion ( $F(2) = 8.522$ ,  $p = 0.000$ ,  $p < 0.001$ ) and between message and religion ( $F(2) = 5.844$ ,  $p = 0.003$ ,  $p < 0.01$ ). The interaction between the source of interfaith calls for peace and the message that those speakers use (source\*message) is not by itself statistically significant without inclusion of the religious identity of subjects. When religious identity is included, the three-way interaction between source, message, and religion approaches statistical significance ( $F(2) = 2.588$ ,  $p = 0.076$ ,  $p < 0.10$ ), though the reliability of this interaction should not be overstated. The table in Appendix B reports the mean IAT scores for implicit bias, along with standard deviations, for all combinations of source, message, and religion.

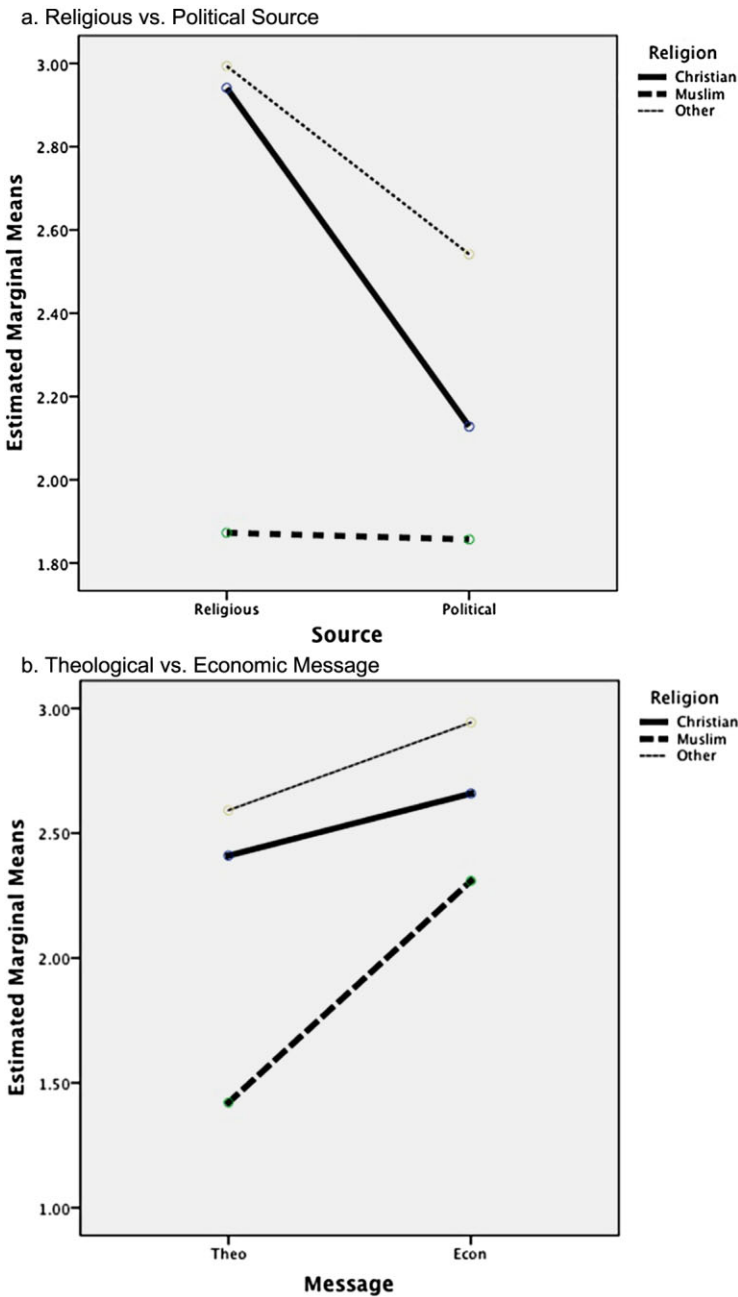
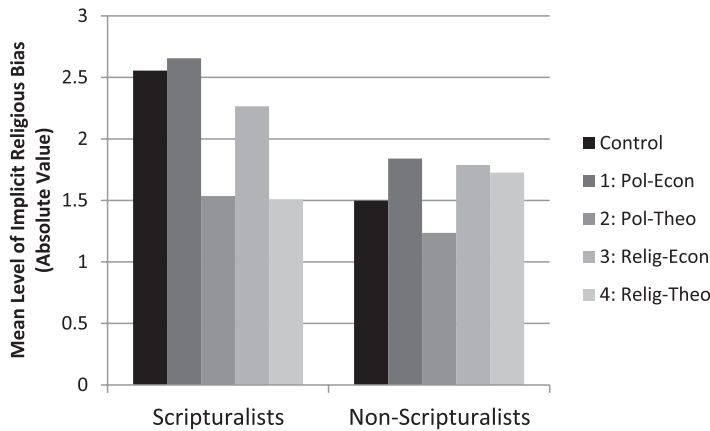


Figure 3. Estimated marginal means of IAT scores by treatment.

For added insight into how the source and message treatments interact with the religious identity of subjects, I include plots of the estimated marginal means for each treatment, disaggregated by religious group identity. As Figure 3.a illustrates, hearing interfaith calls for peace from political leaders has a notable bias-reducing effect on Christians and Others/Nones, vis-à-vis hearing those messages from religious leaders. The distinction in the effects of religious versus political sources on



**Figure 4.** Treatment effects based on familiarity with scripture. Figure includes only Muslim and Christian respondents. Scripturalists are those who stated that they know their sacred text and can cite many passages from memory (a response of 4 or 5 to the survey question, “How familiar are you with your religious scripture?”). The y-axis represents the absolute value of mean IAT scores.

Muslim subjects, however, is negligible, and Muslims’ mean level of implicit religious bias is much lower than Christians and Others/Nones regardless of the source of interfaith appeals. Insofar as the content of those appeals is concerned, Figure 3.b reveals that the theological message appears to outperform the economic message in terms of bias reduction across religious groups. However, whereas the effect is minor for Christians and Others/Nones, Muslims express notably lower levels of implicit religious bias after hearing the speech of theological content than they do after receiving the economic message.<sup>14</sup> These plots of separate two-way interactions support the findings illustrated above in Figure 2.

By way of summary, the effectiveness of strategies promoting interreligious peace varies depending on the religion of the target audience. Christians in the experiment responded best to messages delivered by political leaders, regardless of whether the content was economic or theological. Messages delivered by religious leaders, by contrast, actually had deleterious effects on Christians’ bias toward Muslims (compared to the Christian baseline). Muslims, for their part, responded best to theological substance in the video speeches, regardless of whether it was delivered by political leaders or religious leaders. Political leaders focusing on economic concerns exacerbated Muslims’ bias toward Christians.

To test the hypothesis that superordinate messages promoting theological similarities are most effective among individuals with stronger attachments to scripture, I rely on a survey question posed to participants following the IAT: “How familiar are you with your religious scripture (the Bible or the Qur’an)?”—where 1 = “I have never read any passages and I don’t know any of the content”; 2 = “I don’t read scripture but I’m familiar with some prescriptions”; 3 = “I read the scriptures occasionally or know most major prescriptions”; 4 = “I have learned all of the teachings and can recite many important ones”; and 5 = “I have read the entire book and can recite most prescriptions from memory.” The results suggest that, to some degree, attachments to scripture do explain why Muslims are more receptive to religious messages. Figure 4 depicts control and treatment effects (using IAT scores), not by religion but by how well respondents know the tenants of their religion. Based on the control subjects who received no prime, those who state that they can recite many

<sup>14</sup> In separate two-sample t-tests, both source and message are significant: political sources are more likely than religious sources to reduce interreligious bias ( $t = 2.55, p = .011$ ), and theological messages are bias-reducing, across religious groups, in comparison to messages of economic content ( $t = 5.48, p = .000$ ).

prescriptions from memory (4 or 5 above) have a baseline level of implicit bias significantly higher than those who cannot (2.55 vs. 1.50,  $p < .001$ ), but they also respond in significant, positive ways to both speeches with theological content, the *Pol-Theo* treatment (2.55 vs. 1.54,  $p < .001$ ) and the *Relig-Theo* treatment (2.55 vs. 1.51,  $p < .001$ ), when compared to control subjects who are similarly attached to scripture. Those less familiar with their religious texts (“Non-Scripturalists,” answering 1–3 to the survey question) are not positively affected by any of the treatments at standard levels of statistical significance. The apparent Islam effect may thus be explained by the fact that significantly more Muslims than Christians in the study area (46.6% vs. 31.8%,  $p < .001$ ) express familiarity with the tenants of their religion.

Next, why do Christians respond best to messages from political leaders? A second question from the postexperiment survey suggests an answer. Those assigned to the control group (and thus not exposed to treatments that may have affected their survey responses) were asked the following question: “Among the following figures, who in your opinion can best promote peace in Côte d’Ivoire? The President, local political leaders, religious leaders, traditional leaders, business leaders, families, youth, or someone else?” Thirty-seven percent of Christian respondents versus 19% of Muslim respondents ( $p < .01$ ) selected the President—who, at the time of the study, was the Christian Gbagbo—as the best positioned to build peace. The evidence is only suggestive, but if Christians in the study are more likely to place trust in their president, this may explain why they respond favorably to appeals from political leaders, albeit at a different level of governance. Conversely, the Muslim population, which had never been represented in the highest political office in Côte d’Ivoire until Gbagbo was finally removed from power in April 2011, demonstrated greater skepticism that political leaders could promote peace.

### Conclusion

Tempering individual-level, implicit bias represents a potential means of countering the politicization of identities like religion. Strategies to achieve those results, however, have to this point been fraught with challenges: measuring individual responses often depends on imprecise means, and testing real-world initiatives to reduce bias is complicated by confounding effects between the strategies and other contextual variables. The aim of this study was to overcome those challenges and to test a limited set of strategies to cultivate peace: I measured religious bias using Implicit Association Tests, and I systematically manipulated messages calling for peace, and the sources of those messages, through experimental treatments. The evidence points to three general conclusions. First, if the results of the baseline IATs are to be believed, implicit religious bias in the study area of Bouaké, Côte d’Ivoire remains high, and even effective bias-reduction strategies do not eliminate it. Second, Christians in the study tend to be more biased against Muslims than Muslims are against Christians, an outcome that should be anticipated given the Christian community’s long history of sociopolitical advantage and perceived higher status in Côte d’Ivoire. Third, the effectiveness of treatments depends on the subjects who receive those treatments: strategies that rely on theological messages reduce bias among Muslims, regardless of their source, and strategies that rely on political leaders to deliver messages perform best among Christians, regardless of the content. I have argued that Muslims in the study area respond best to theological content owing to their stronger attachment to scripture and that Christians respond better to political sources due to a history of access to political power that has engendered greater trust in political leadership.

The study has important theoretical as well as empirical implications. From a theoretical standpoint, the combinations of informational treatments that altered message and source indicate that superordinate goals can effectively reduce intergroup prejudice in conflict zones, an important insight to add to the conflict resolution literature. The research demonstrates, however, that those goals are not in all cases interchangeable. Instead, the specific nature of superordinate messages can



have differential effects depending on the underlying preferences and priorities of subgroups. In this experiment, Christians and Muslims were asked to view themselves either as partners in socioeconomic development or as subgroups united under an Abrahamic theological tradition, reflecting instrumental versus symbolic explanations for conflict from the political science literature. Those messages were received differently, however, depending on the subgroups' attachments to scripture, their access to power, and perhaps other unobservable factors.

From an empirical standpoint, the differential effects of superordinate messages (and their sources) on Christians and Muslims suggests the need to adapt peace-building efforts to particular audiences and to pay close attention to their shared histories, habits, and sociopolitical relations. Christians and Muslims in the study were similar in terms of age, education, and employment status, yet differences in their perceived group status appear to affect their baseline levels of bias and their responses to stimuli. The implication is that interfaith calls for peace may be most effective when tailored to subgroup audiences.

The article makes three other contributions. First, it demonstrates the usefulness of working at the micro, psychological level to bolster our understanding of broad political problems. In this case, I developed a version of tests widespread in experimental psychology to contribute to the literature on intergroup disputes and conflict management. Second, this study moves beyond an analysis of the problem to suggest potential solutions, by comparing experimental treatments that closely mirror "real world" efforts to reduce bias. Third, the article adds to a growing list of studies that bring laboratory-like experiments to the field in Africa.<sup>15</sup> Whereas other studies rely on explicitly stated preferences, however, I focused on difficult-to-measure but nevertheless critical implicit attitudes.

These outcomes should not be overstated. First, the study is limited in the scope of strategies that it tests: it does not evaluate the effects of only one speaker (either an in- or out-group member), of other types of speakers (e.g., teachers or traditional leaders), or of a completely different medium. It also does not test the effects of alternative messages, of which many could be effective; it compares only intergroup calls for peace based on superordinate goals of Christians and Muslims. As mentioned, reliance on one form of attire for each religious leader also prohibits an account of intrareligious biases among members of different Christian and Muslim subgroups. The treatments therefore do not represent the universe of strategies, or even necessarily the best strategies, to reduce interreligious bias. The objective was only to test some very basic potential solutions to a fairly intractable problem.

The experimental approach used in this study also raises new questions even as it resolves the important challenges of contaminated treatments and unwanted measurement error. Principally, is the external validity of the study threatened by the fact that actors, rather than known political or religious leaders, were used to deliver the messages? Reliance on actors helped to hold constant all features of the speakers aside from their identities as political or religious leaders; relying on actual leaders would have introduced other factors—such as physical appearance and popularity—that could potentially affect the outcomes of interest (reductions in religious bias). Controls of this sort are appropriate for the social scientific study and comparison of competing strategies, yet it must be noted that the study includes no measure of the believability of those actors in each role that they play. Practitioners may reap even greater rewards by incorporating known leaders, so long as any personal characteristics potentially related to the outcomes of interest are carefully considered.

An additional question that arises from the experimental design is how long lasting the effects of these bias reduction strategies might be. A distinction should be made here between the video treatments used as priming devices in the study and the potential real-world implementation of interfaith calls for peace that the videos are meant to represent. Individuals who received treatments

<sup>15</sup> See, for example, Collier and Vicente (2008), Dunning and Harrison (2010), Fearon et al. (2009), Habyarimana et al. (2007), and Wantchekon (2003).

prior to completing IATs for the study likely did not experience effects on their levels of implicit bias lasting more than several minutes or an hour. The purpose of those treatments, however, was not to alter individual-level bias over the long term but to pinpoint the real-world strategies that might effectively do so. Insofar as frequent and persistent exposure to treatments can have bias-reducing effects on implicit attitudes over the long term (Dovidio, Kawakami, & Gaertner, 2000), the hope is that practitioners could implement appropriate bias-reducing strategies in an ongoing manner.

Several avenues for future research arise from this study. Côte d'Ivoire has since elected its first Muslim president, Alassane Ouattara, who officially took office in April 2011, and changes in the perceived status of Christians and Muslims may follow. Repeated IAT experiments in Côte d'Ivoire could shed light on how these changes affect baseline levels of implicit religious bias. Furthermore, the study took place only in one study area and tested only a limited set of strategies. Future research might employ priming treatments using different interfaith messages or different sources of those messages. Altering the context of the study—to test the same strategies in other religiously mixed countries, for example—offers another opportunity for fruitful research. Finally, implicit bias based on other identity cleavages (e.g., ethnic, national, or class) may be tested in similar fashion using alternative variations of the IAT.

The findings from this study suggest that individual-level bias between Christians and Muslims can be reduced, provided that the appropriate content is used and the initiatives are aimed at the right audience. In Bouaké, Côte d'Ivoire, that may mean employing a complex, small-group approach. Broad appeals for interreligious peace may generate as much bias as they remove, but initiatives developed with particular mosques, churches, communities, and neighborhoods in mind could be the answer to preventing a reemergence of conflict along religious lines in Côte d'Ivoire.

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## REFERENCES

- Afrobarometer. (2009). Data, by country—Ghana codebook 2008. Questions 23, 49, 56. [http://afrobarometer.org/results/gha\\_R4\\_codebookrelease\\_10apr09\\_final.2.pdf](http://afrobarometer.org/results/gha_R4_codebookrelease_10apr09_final.2.pdf)
- Albertson, B. L. (2011). Religious appeals and implicit attitudes. *Political Psychology*, 32, 109–130.
- Banégas, R. (2006). Côte d'Ivoire: Patriotism, Ethnonationalism and other African modes of self-writing. *African Affairs*, 105, 535–552.
- Banse, R., Seises, J., & Zerbes, N. (2001). Implicit attitudes towards homosexuality: Reliability, validity, and controllability of the IAT. *Zeitschrift für Experimentelle Psychologie*, 48, 48–60.
- Barden, J., Maddux, W., Petty, R., & Brewer, M. (2004). Contextual moderation of racial bias: The impact of social roles on controlled and automatically activated attitudes. *Journal of Personality and Social Psychology*, 87, 5–22.
- Bassett, T. (2003). Nord musulman et Sud chrétien: les moules médiatiques de la crise ivoirienne. *Afrique Contemporaine*, 206, 13–17.
- Berger, P. (1967). *The sacred canopy: Elements of a sociological theory of religion*. New York: Random House.
- Blékanh, F. K. (2009). *Une Démocratie à l'Africaine pour un Développement Durable: le Cas de la Côte d'Ivoire*. Paris: Harmattan.
- Chirod, D. (2006). The debacle in Côte d'Ivoire. *Journal of Democracy*, 17, 63–77.
- CIA World Factbook. (2009). Africa: Côte d'Ivoire. <https://www.cia.gov/library/publications/the-world-factbook/geos/iv.html>

- Collett, M. (2006). Ivoirian identity constructions: Ethnicity and nationalism in the prelude to civil war. *Nations and Nationalism*, 12, 613–629.
- Collier, P., & Hoeffler, A. (2004). Greed and grievance in civil war. *Oxford Economic Papers*, 56, 563–595.
- Collier, P., & Vicente, P. (2008). Votes and violence: Evidence from a field experiment in Nigeria. CSAE Working Paper, University of Oxford.
- Craemer, T. (2008). Nonconscious feelings of closeness toward African Americans and support for pro-Black policies. *Political Psychology*, 29, 407–436.
- Craemer, T. (2010). Possible implicit mechanisms of minority representation. *Political Psychology*, 31, 797–829.
- Daddieh, C. (2001). Elections and ethnic violence in Côte d'Ivoire: The unfinished business of succession and democratic transition. *African Issues*, 29, 14–19.
- Devine, P., Plant, A. E., Amodio, D., Harmon-Jones, E., & Vance, S. (2002). The regulation of explicit and implicit race bias: the role of motivations to respond without prejudice. *Journal of Personality and Social Psychology*, 82, 835–848.
- Dovidio, J. F., Kawakami, K., & Gaertner, S. L. (2000). Reducing contemporary prejudice: Combating explicit and implicit bias at the individual and intergroup level. In S. Oskamp (Ed.), *Reducing prejudice and discrimination* (pp. 137–163). London: Lawrence Erlbaum.
- Donders, F. C. (1868/1969). On the speed of mental processes. *Acta Psychologica*, 30, 413–421.
- Dunning, T., & Harrison, J. (2010). Cross-cutting cleavages and ethnic voting: An experimental study of Cousinage in Mali. *American Political Science Review*, 104, 21–39.
- Falola, T. (1998). *Violence in Nigeria: The crisis of religious politics and secular ideologies*. Rochester, NY: University of Rochester Press.
- Fearon, J., & Laitin, D. (2003). Ethnicity, insurgency, and civil war. *American Political Science Review*, 97, 75–90.
- Fearon, J., Humphreys, M., & Weinstein, J. (2009). Can development aid contribute to social cohesion after civil war? Evidence from a field experiment in post-conflict Liberia. *American Economic Review: Papers and Proceedings*, 99, 287–291.
- Fox, J. (2004). *Religion, civilization, and civil war: 1945 through the new millennium*. Oxford, UK: Lexington Books.
- Gaertner, S. L., Dovidio, J. F., Rust, M. C., Nier, J., Banker, B., Ward, C., Mottola, G., & Houlette, M. (1999). Reducing intergroup bias: Elements of intergroup cooperation. *Journal of Personality and Social Psychology*, 76, 388–402.
- Gervais, B. S. (2008). *Les Droits de l'Homme à l'Epreuve: Cas de la Crise Ivoirienne du 19 Septembre 2002*. Paris: Harmattan.
- Green, A., Carney, D., Pallin, D., Iezzoni, L., & Banaji, M. (2006). Physicians' implicit biases predict differential treatment of Black versus White patients. Unpublished manuscript, University of Maryland, College Park.
- Greenwald, A. G., McGhee, D., & Schwartz, J. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, 74, 1464–1480.
- Habyarimana, J., Humphreys, M., Posner, D., & Weinstein, J. (2007). Why does ethnic diversity undermine public goods provision? *American Political Science Review*, 101, 709–725.
- Haynes, J. (1999). *Religion, globalization, and political culture in the third world*. London: MacMillan Press.
- Hoffman, E., McCabe, K., & Smith, V. (1996). Social distance and other-regarding behavior in dictator games. *American Economic Review*, 86, 653–660.
- Hornsey, M. J., & Hogg, M. A. (2000). Assimilation and diversity: An integrative model of subgroup relations. *Personality and Social Psychology Review*, 4, 143–156.
- Horowitz, D. L. (1985). *Ethnic groups in conflict*. Berkeley, CA: Berkeley University Press.
- Humphreys, M., & Weinstein, J. (2006). Handling and mishandling civilians in civil war. *American Political Science Review*, 100, 429–447.
- Iannaccone, L. R. (2001). Framework for the scientific study of religion. In L. A. Young (Ed.), *Rational choice theory and religion* (pp. 25–44). New York: Routledge.
- Institut National de la Statistique (INS), Côte d'Ivoire. (2001). *Recensement Générale de la Population et de l'habitation de 1998*. Abidjan: Institut National de la Statistique.
- Kalyvas, S. N. (2000). Commitment problems in emerging democracies: The case of religious parties. *Comparative Politics*, 32, 379–398.
- Karpinski, A., & Hilton, J. L. (2001). Attitudes and the implicit association test. *Journal of Personality and Social Psychology*, 81, 774–788.
- Jost, J. T., Banaji, M. R., & Nosek, B. A. (2004). A decade of system justification theory: Accumulated evidence of conscious and unconscious bolstering of the status quo. *Political Psychology*, 25, 881–919.
- Juergensmeyer, M. (1993). *The new cold war? Religious nationalism confronts the secular State*. Berkeley, CA: University of California Press.

- Laitin, D. (1978). Religion, political culture, and the Weberian tradition. *World Politics*, 30, 563–592.
- Laitin, D. (2000). Language conflict and violence: The straw that strengthens the camel's back. *Archives Européennes de Sociologie*, 41, 97–137.
- Lane, K., Banaji, M., Nosek, B., & Greenwald, A. (2007). Understanding and using the implicit association test. In B. Wittenbrink & N. Schwartz (Eds.), *Implicit measures of attitudes* (pp. 59–102). New York: Guilford Press.
- Le Journal de l'Economie. (2009). 6 Ans après la Crise: Peut-on Sauver Bouaké? April 13.
- Lemm, K., Lane, K., Sattler, D., Khan, S., & Nosek, B. (2007). Assessing implicit cognitions with a paper-format implicit association test. Unpublished manuscript, University of Maryland, College Park.
- Lipjhart, A. (1968). *The politics of accommodation: Pluralism and democracy in the Netherlands*. Berkeley: University of California Press.
- McEvoy, J. (2008). *The politics of Northern Ireland*. Edinburgh, UK: Edinburgh University Press.
- McPhail, C. (1971). Civil disorder participation: A critical examination of recent research. *American Sociological Review*, 36, 1058–1073.
- Neumann, R., Hülsenbeck, K., & Seibt, B. (2003). Attitudes towards people with AIDS and avoidance behavior: Automatic and reflective bases of behavior. *Journal of Experimental Social Psychology*, 40, 543–550.
- Oded, A. (2000). *Islam and Politics in Kenya*. Boulder, CO: Lynne Rienner.
- Pearson, A. R., Dovidio, J. F., & Gaertner, S. L. (2009). The nature of contemporary prejudice: Insights from aversive racism. *Social and Personality Compass*, 3, 1–25.
- Posner, D. N. (2005). *Institutions and ethnic politics in Africa*. New York: Cambridge University Press.
- Prunier, G. (2005). *Darfur: The ambiguous genocide*. Ithaca, NY: Cornell University Press.
- Reno, W. (2000). Clandestine economies, violence, and states in Africa. *Journal of International Affairs*, 53, 433–459.
- Reynal-Queral, M. (2002). Ethnicity, political systems, and civil wars. *Journal of Conflict Resolution*, 46, 29–54.
- Roubaud, F. (2003). La Crise Vue d'en Bas à Abidjan: Ethnicité, Gouvernance et Démocratie. *Afrique Contemporaine*, 206, 57–85.
- Rowatt, W. C., Ottenbreit, A., Nesselroade, K. P., & Cunningham, P. A. (2002). On being holier-than-thou or humbler-than-thou: A social psychological perspective on religiousness and humility. *Journal for the Scientific Study of Religion*, 41, 227–237.
- Rydell, R., & McConnell, A. (2006). Understanding implicit and explicit attitude change: A systems of reasoning analysis. *Journal of Personality and Social Psychology*, 91, 995–1008.
- Sanneh, L. (1994). Translatability in Islam and Christianity in Africa: A thematic approach. In T. Blakely, W. V. Beek, & D. Thompson (Eds.), *Religion in Africa: Experience and expression* (pp. 23–45). London: J. Curry Ltd.
- Schreiber, D. (2005). Evaluating politics: A search for the neural substrates of political thought. (Unpublished doctoral dissertation). University of California, Los Angeles, Los Angeles, CA.
- Schwartz, D. C. (2009). *Political alienation and political behavior*. Chicago: Aldine Publishing.
- Sherif, M., Harvey, O. J., White, B. J., Hood, W. R., & Sherif, C. (1961). *Intergroup conflict and cooperation: The robbers cave experiment*. Norman: University of Oklahoma Press.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks/Cole.
- Teachman, B. A., Gapinski, K. D., Brownell, K. D., Rawlins, M., & Jeyaram, S. (2003). Demonstrations of implicit anti-fat bias: The impact of providing causal information and evoking empathy. *Health Psychology*, 22, 68–78.
- Toungara, J. M. (2001). Ethnicity and political crisis in Côte d'Ivoire. *Journal of Democracy*, 12, 63–72.
- Turner, J. C. (1982). Towards a cognitive redefinition of the social group. In H. Tajfel (Ed.), *Social identity and intergroup relations* (pp. 15–44). Cambridge: Cambridge University Press.
- U.S. Department of State. (2001). US State Department Report on Ivory Coast 2000. Report released by the Bureau of Democracy, Human Rights, and Labor. <http://www.state.gov/g/drl/rls/hrrpt/2000/af/773pf.htm>
- U.S. Department of State. (2003). Côte d'Ivoire: International Religious Freedom Report 2003. Report released by the Bureau of Democracy, Human Rights, and Labor. <http://www.state.gov/g/drl/rls/irf/2003/23701.htm>
- Van Bavel, J. J., & Cunningham, W. A. (2009). Self-categorization with a novel mixed-race group moderates automatic social and racial biases. *Personality and Social Psychology Bulletin*, 35, 321–335.
- Wantchekon, L. (2003). Clientelism and voting behavior: Evidence from a field experiment in Benin. *World Politics*, 55, 399–422.
- Westen, D. (2007). *The political brain: The role of emotion in deciding the fate of the nation*. New York: Public Affairs Books.
- Wilcox, C., & Larson, C. (2006). *Onward Christian Soldier? The Christian Right in American politics*. Boulder, CO: Westview Press.

Appendix A. Implicit Association Test

Musulman Bon		Chrétien Mauvais	Musulman Bon		Chrétien Mauvais
<input type="radio"/>	Pierre	<input type="radio"/>	<input type="radio"/>	Christophe	<input type="radio"/>
<input type="radio"/>	joyeux	<input type="radio"/>	<input type="radio"/>	vilain	<input type="radio"/>
<input type="radio"/>	Christine	<input type="radio"/>	<input type="radio"/>	Françoise	<input type="radio"/>
<input type="radio"/>	mal	<input type="radio"/>	<input type="radio"/>	heureux	<input type="radio"/>
<input type="radio"/>	Issiaka	<input type="radio"/>	<input type="radio"/>	Aminata	<input type="radio"/>
<input type="radio"/>	magnifique	<input type="radio"/>	<input type="radio"/>	mal	<input type="radio"/>
<input type="radio"/>	Joseph	<input type="radio"/>	<input type="radio"/>	Elise	<input type="radio"/>
<input type="radio"/>	vilain	<input type="radio"/>	<input type="radio"/>	amour	<input type="radio"/>
<input type="radio"/>	Fatou	<input type="radio"/>	<input type="radio"/>	Abdramane	<input type="radio"/>
<input type="radio"/>	haine	<input type="radio"/>	<input type="radio"/>	haine	<input type="radio"/>
<input type="radio"/>	Moustapha	<input type="radio"/>	<input type="radio"/>	Jean	<input type="radio"/>
<input type="radio"/>	heureux	<input type="radio"/>	<input type="radio"/>	joyeux	<input type="radio"/>
<input type="radio"/>	Mohamed	<input type="radio"/>	<input type="radio"/>	Boubacar	<input type="radio"/>
<input type="radio"/>	fâché	<input type="radio"/>	<input type="radio"/>	fâché	<input type="radio"/>
<input type="radio"/>	Catherine	<input type="radio"/>	<input type="radio"/>	Ibrahim	<input type="radio"/>
<input type="radio"/>	malheureux	<input type="radio"/>	<input type="radio"/>	content	<input type="radio"/>
<input type="radio"/>	Louis	<input type="radio"/>	<input type="radio"/>	Léontine	<input type="radio"/>
<input type="radio"/>	content	<input type="radio"/>	<input type="radio"/>	magnifique	<input type="radio"/>
<input type="radio"/>	Safiatou	<input type="radio"/>	<input type="radio"/>	Fatimata	<input type="radio"/>
<input type="radio"/>	formidable	<input type="radio"/>	<input type="radio"/>	mécontent	<input type="radio"/>

Figure A.1. IAT Block 1.

Chrétien Bon		Musulman Mauvais	Chrétien Bon		Musulman Mauvais
<input type="radio"/>	Moussa	<input type="radio"/>	<input type="radio"/>	Abdramane	<input type="radio"/>
<input type="radio"/>	vilain	<input type="radio"/>	<input type="radio"/>	heureux	<input type="radio"/>
<input type="radio"/>	Christine	<input type="radio"/>	<input type="radio"/>	Françoise	<input type="radio"/>
<input type="radio"/>	mal	<input type="radio"/>	<input type="radio"/>	vilain	<input type="radio"/>
<input type="radio"/>	Paul	<input type="radio"/>	<input type="radio"/>	Christine	<input type="radio"/>
<input type="radio"/>	magnifique	<input type="radio"/>	<input type="radio"/>	mal	<input type="radio"/>
<input type="radio"/>	Mohamed	<input type="radio"/>	<input type="radio"/>	Salimata	<input type="radio"/>
<input type="radio"/>	joyeux	<input type="radio"/>	<input type="radio"/>	amour	<input type="radio"/>
<input type="radio"/>	Fatou	<input type="radio"/>	<input type="radio"/>	Christophe	<input type="radio"/>
<input type="radio"/>	heureux	<input type="radio"/>	<input type="radio"/>	joyeux	<input type="radio"/>
<input type="radio"/>	Nicholas	<input type="radio"/>	<input type="radio"/>	Jean	<input type="radio"/>
<input type="radio"/>	haine	<input type="radio"/>	<input type="radio"/>	haine	<input type="radio"/>
<input type="radio"/>	Karim	<input type="radio"/>	<input type="radio"/>	Boubacar	<input type="radio"/>
<input type="radio"/>	fâché	<input type="radio"/>	<input type="radio"/>	fâché	<input type="radio"/>
<input type="radio"/>	Lucie	<input type="radio"/>	<input type="radio"/>	Ibrahim	<input type="radio"/>
<input type="radio"/>	content	<input type="radio"/>	<input type="radio"/>	terrible	<input type="radio"/>
<input type="radio"/>	Aminata	<input type="radio"/>	<input type="radio"/>	Fatimata	<input type="radio"/>
<input type="radio"/>	malheureux	<input type="radio"/>	<input type="radio"/>	content	<input type="radio"/>
<input type="radio"/>	Michelle	<input type="radio"/>	<input type="radio"/>	Léontine	<input type="radio"/>
<input type="radio"/>	formidable	<input type="radio"/>	<input type="radio"/>	mécontent	<input type="radio"/>

Figure A.2. IAT Block 2.

**Appendix B. Descriptive Characteristics of Interactions from Multivariate ANOVA**

Source	Message	Religion	Mean	Std. Deviation	N
Relig.	Theo	Christian	2.764	1.124	85
		Muslim	1.596	0.857	144
		Other	2.915	1.434	23
		Total	2.110	1.173	252
	Econ	Christian	3.117	1.263	45
		Muslim	2.148	1.292	76
		Other	3.071	1.719	14
		Total	2.567	1.404	135
	Total	Christian	2.886	1.181	130
		Muslim	1.787	1.058	220
		Other	2.974	1.527	37
		Total	2.270	1.276	387
Political	Theo	Christian	2.056	1.078	40
		Muslim	1.244	0.911	71
		Other	2.268	1.405	11
		Total	1.602	1.096	122
	Econ	Christian	2.200	0.873	55
		Muslim	2.468	1.106	78
		Other	2.815	1.759	9
		Total	2.386	1.079	142
	Total	Christian	2.139	0.962	95
		Muslim	1.885	1.185	149
		Other	2.514	1.555	20
		Total	2.024	1.153	264
Total	Theo	Christian	2.537	1.154	125
		Muslim	1.480	0.889	215
		Other	2.705	1.437	34
		Total	1.945	1.172	374
	Econ	Christian	2.612	1.155	100
		Muslim	2.310	1.208	154
		Other	2.971	1.699	23
		Total	2.474	1.249	277
	Total	Christian	2.571	1.153	225
		Muslim	1.827	1.111	369
		Other	2.813	1.539	57
		Total	2.170	1.233	651