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ABSTRACT

Religion, Discrimination and Trust

We propose that religion impacts trust and trustworthiness in ways that depend on how individuals are socially identified and connected. Religiosity and religious affiliation may serve as markers for statistical discrimination. Further, affiliation to the same religion may enhance group identity, or affiliation irrespective of creed may lend social identity, and in turn induce taste-based discrimination. Religiosity may also relate to general prejudice. We test these hypotheses across three culturally diverse countries. Participants' willingness to discriminate, beliefs of how trustworthy or trusting others are, as well as actual trust and trustworthiness are measured incentive compatibly. We find that interpersonal similarity in religiosity and affiliation promote trust through beliefs of reciprocity. Religious participants also believe that those belonging to some faith are trustworthier, but invest more trust only in those of the same religion – religiosity amplifies this effect. Across non-religious categories, whereas more religious participants are more willing to discriminate, less religious participants are as likely to display group biases.

JEL Classification: C72, C91, J16, Z12

Keywords: religiosity, connectedness, discrimination, trust, experiment

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1. Introduction

In this paper, we investigate the role of religion-based discrimination in trusting and in trustworthy behaviour when interacting with people from various social groups or cultures. Understanding the role of religion is important, because conflict between and within different religions is rising globally (The Institute for Economics and Peace, 2014; Grim, 2014) and fast becoming a defining feature of the post-cold war world order (Huntington, 1996). A standard manifestation of this religious conflict is inter-religious strife. Another, newer dimension involves religious radicalisation and extremism which can turn individuals against their compatriots and moderate fellow adherents. However, despite its ubiquity, importance and controversy, economists have only recently developed an interest in the effects religion has on economic outcomes (Iannaccone, 1998; Guiso *et al.*, 2006; Tan, 2006). Religion can influence economic behaviour in at least two ways, by creating differential social group identities (Jackson and Hunsberger, 1999) and through individual differences in religiosity, i.e. the strength of an individual's religious attachment or commitment to a particular faith commonly measured as religious belief, ritual and experience (Tan, 2006). Identity (e.g. Akerlof and Kranton, 2000; Chen and Xin, 2009; Currarini and Mengel, 2013) and acculturation (Guiso *et al.*, 2003) generally affect economic outcomes and might act as conduits for the economic influences of religion.

One economic approach to examining these effects is the experimental economics of religion, as critically discussed by Hoffmann (2013) and Tan (2014), where the influences of religious variables on various kinds of individual economic decision are studied systematically in controlled settings. Previous studies demonstrated the first effect, that individuals treat others differently in economic contexts based on same or different religious affiliation even when other social identifiers such as nationality and ethnicity are shared. For example, we conducted a laboratory experiment with student participants from different cross-cutting ethnic and religious groups in Malaysia (Chuah *et al.*, 2014). While participants cooperated relatively more within their own ethnic groups irrespective of religious affiliation, having the same religion as well enhanced their cooperation further. Conversely, participants divided by different ethnic identity cooperated more when they shared religious affiliation. A field experiment where both Indian Hindus and Muslims in Mumbai trusted members of their own religious groups relatively more (Chuah *et al.*, 2013) lends further support.

However, our work as well as that of other researchers failed to demonstrate the second effect, of religiosity, directly. In two experiments participants of higher religiosity were equally cooperative (Chuah *et al.*, 2014) or trusting (Tan and Vogel,

39 2008) than others. These results suggest that religiosity, in reflecting an individ-
 40 ual's socialisation into and internalisation of particular religious precepts (e.g. Ryan
 41 *et al.*, 1993) does not independently affect consequent behaviour. However, both
 42 studies provided hints of a second avenue by which religiosity might influence deci-
 43 sion making as a vehicle for taste-based or statistical discrimination. One such hint
 44 is that among the entirely Christian participant pool of Tan and Vogel (2008), those
 45 of known higher religiosity receive greater trust from others, and especially (but
 46 not exclusively) from those who share this trait. The second hint is that high reli-
 47 giosity amplified the higher cooperation which Chuah *et al.*'s (2014) multi-cultural
 48 participants paid their religious fellows.

49 In this paper, we propose that religious identities serve as cues on the nature
 50 and degree of connectedness between interacting individuals, and thus religion influ-
 51 ences strategic behaviour, in particular trust and trustworthiness on which we focus
 52 here. In trust games (Berg *et al.*, 1995; Johnson and Mislin, 2011), a *sender* decides
 53 how much to trust a *receiver* by sending an amount of money. The receiver receives
 54 thrice the amount sent and decides how trustworthy to be in returning a proportion
 55 of it. In equilibrium, by backward induction, assuming that receivers are rational
 56 and money-maximizing, senders anticipate nothing in return, and so send nothing.
 57 Social connectedness is a psychological concept describing the closeness of people
 58 e.g. family or acquaintance, friend or foe (Aron *et al.*, 1991). We call closeness
 59 in religion-based relationships *religious connectedness*. Consistent with research on
 60 social connectedness in general (Laurenceau *et al.*, 1998), we argue that individual
 61 religiosity operates through religious connectedness to affect trust. Religious con-
 62 nectedness increases with the duration and frequency of interactions, knowledge
 63 of others, the extent of (mutual) self-disclosure, and the number of people in the
 64 other's network one is also connected to. Religious beliefs, rituals, experiences and
 65 activities that unite or divide people facilitates this. We consider four forms of
 66 religious identity: 1) a connection at the fundamental level of individual religiosity;
 67 2) group membership based on religious affiliation to the same creed; 3) religious
 68 affinity arising from the mere affiliation to some religion, regardless of creed; and
 69 4) religious anonymity, where religiosity effects operate on the wider societal level
 70 of prejudice across social identities including non-religious ones.

71 In turn, we examine four corresponding religious discrimination effects on trust
 72 and trustworthiness. The first is *statistical discrimination* (e.g. Mueser, 1999; An-
 73 derson *et al.*, 2006), where more religious people are generally believed to be trust-
 74 worthy and treated accordingly. The second is that religiosity amplifies intergroup
 75 bias on the basis of religious affiliation. Intergroup processes including *taste-based*
 76 outgroup discrimination or ingroup favouritism are strengthened by an individ-
 77 ual's identification with the group (Farnham *et al.*, 1999; Smurda *et al.*, 2006).

78 The third is that religiosity is used as a social identifier of *affinity* which unites
 79 religious people regardless of creed. The fourth is that religiosity is a correlate of
 80 greater *general prejudice*, i.e. discrimination based on social identity differences
 81 even in non-religion categories (e.g. Hunsberger and Jackson, 2005).

82 For this purpose, we conduct a trust game experiment where participants can
 83 incur a financial cost in order to discriminate between co-participants of different
 84 religions and other social identities. We extend the trust game by allowing partici-
 85 pants to make decisions conditional on the social identities of co-participants they
 86 might face. We then measure participants' religiosity and consider their religious
 87 affiliations, their responses to co-participants of diverse religious affiliations, and
 88 corresponding beliefs regarding co-participants' actions. In particular, we study
 89 how trustworthy senders think receivers are or how trusting receivers think senders
 90 are. We also test how much senders invest trust or receivers reciprocate trust.
 91 Further, we analyse whether these beliefs and actions relate to the religiosity and
 92 religious affiliation of sender and receiver. This informs us on the relevance of sta-
 93 tistical and taste-based motives of discrimination, and whether religiosity per se is
 94 related to general prejudice, i.e. on the basis of even non-religious categorisation.

95 Our design has a number of novel features. In many previous experiments,
 96 discrimination was observed in a particular context such as gender or ethnicity. In
 97 contrast, we are able to measure discrimination based on different social identifiers
 98 which vary within a multi-national participant pool. This allows us to measure dis-
 99 crimination tendencies in a more general way, and to compare these across different
 100 social identifiers. Further, we measure discrimination in participants' intention or
 101 *willingness* to discriminate as the resources they are willing to use in order to be
 102 able to make decisions contingent on the characteristics of their co-participants.
 103 This provides a graduated measure of discrimination intentions, elicited in an in-
 104 centive compatible way in line with the costliness of discrimination in many real
 105 world settings and economic models (see Mueser, 1999). We discuss the literature
 106 and motivation in greater detail in section 2. We outline our experiment and hy-
 107 potheses in section 3. Results are reported in section 4, before concluding in section
 108 5.

109 2. Religiosity and trust

110 Apart from its role in inter-religious conflicts across the world, high religiosity
 111 within all creeds plays an important part in a number of pressing contemporary
 112 social debates surrounding home-grown terrorism, abortion, contraception and gay
 113 rights. These have clear economic consequences. For example, Indiana's *Religious*

114 *Freedom Restoration Act* allows trade to be refused on religious grounds, while
 115 provisions for religious exemptions from public immunisation programmes (in force
 116 in 48 U.S. states) can generate negative externalities on an epidemic scale. This
 117 provides economists with a clear motivation to examine the effects of religiosity in
 118 economic settings using economic methods.

119 A few experimental economics studies have examined the effects of religiosity
 120 (a.k.a. religiousness, which measures an individual's attachment or commitment to
 121 a particular faith) on economic behaviour. Most use religious service attendance
 122 measures as a proxy and relate this to prosocial behaviour in experimental games.¹
 123 Generally, previous research has found little evidence for the relationship between
 124 religiosity variables and behaviour in the trust game. Fehr *et al.* (2002) found no
 125 effect of the church attendance of German household survey respondents on their
 126 decisions in a trust game. Karlan (2005) measured religiosity in terms of months
 127 since last religious service attendance and related this variable to public good con-
 128 tributions and trust game decisions in a field experiment in rural Peru. It was
 129 inversely related to public good contribution but only at the 10% level of signifi-
 130 cance. Attendance also did not explain trust game decisions in this study directly.
 131 However, participants with less frequent attendance were sent *greater* amounts for
 132 unexplained reasons. Anderson and Mellor (2009) measured the frequency of reli-
 133 gious service attendance to serve as a proxy for religiosity. This variable was not
 134 significantly related to public good game contributions of older adult U.S. partic-
 135 ipants. (Anderson *et al.*, 2010) subsequently found a positive effect with college
 136 student participants, but only when comparing the corner cases of high and low
 137 attendance. Trust game behaviour here was unrelated to the attendance measure.

138 Tan (2014) argued that one reason for the mixed results in terms of effect sig-
 139 nificance and direction could lie in the multi-dimensional nature of religiosity that
 140 is not completely captured by simpler measures, e.g. based on attendance alone.
 141 Unidimensional religiosity measures like these are unsatisfactory as they fail to tap
 142 into the different motivations behind and expressions of religious attachment (Spilka
 143 *et al.* 2003, p. 28; Hill and Hood 1999, p. 5), which can manifest behaviourally
 144 in opposite directions (e.g. Tan, 2006). For example, intrinsic spiritual or quest
 145 motives for religious attachment are sharply differentiated from extrinsic ones such
 146 as seeking social group identification. In response psychologists of religion have
 147 developed a now widely-accepted approach (DeJong *et al.*, 1976) which measures
 148 individual religiosity in terms of five dimensions, religious knowledge, practice of

¹See the survey by Hoffmann (2013) for more detail on the different behaviour and religious measures used in these studies.

149 religious activities, belief in religious precepts, personal mystical experience and
150 consequences of religion on behaviour (Glock and Stark, 1965).

151 We used such multi-dimensional religiosity measures in a number of previous
152 experimental economics studies with promising but still inconclusive results. Tan
153 (2006) found the different components of a multi-dimensional measure to signif-
154 icantly affect dictator game offers or ultimatum game responses but in opposite
155 directions. Chuah *et al.* (2009) used principal components analysis to derive a
156 multi-dimensional religiosity scale using 15 items from the World Values Survey
157 (see Inglehart, 1997) which was negatively and (marginally) significantly associ-
158 ated with ultimatum game offer sizes among Malaysian and UK participants. In
159 the study by Tan and Vogel (2008) on German University students, higher re-
160 ligiosity receivers were trusted more especially by fellow high-religiosity senders.
161 Receivers of higher religiosity returned greater amounts and especially to more
162 religious senders.

163 The results of Tan and Vogel suggest that religiosity can have an indirect effect
164 as a social identity that generates ingroup favouritism. However, this is inconclu-
165 sive in that religiosity differences in this study did not explain why senders trusted
166 more religious receivers more. Alternatively the result could evidence statistical
167 discrimination towards highly religious people to the extent that they are generally
168 held to be trustworthier. Finally, in Chuah *et al.*'s (2014) prisoner's dilemma exper-
169 iment, shared religious creed raised cooperation within a multi-cultural Malaysian
170 student participant pool. In contrast, multi-dimensional religiosity as an independ-
171 ent variable in its own right did not explain cooperation. However, religiosity
172 raised cooperation further when interacted with the shared creed dummy variable.
173 This result suggests a further, again indirect effect of religiosity as an enhancer of
174 ingroup bias based on shared religious affiliation. Alternatively, the result could
175 reflect the greater *general* tendency of religious individuals to discriminate on the
176 basis of different social identities including religious creed.

177 Let us now consolidate these results as behavioural patterns from the perspec-
178 tive of religious connectedness, as outlined in the introduction. First, individual
179 religiosity can increase connectedness in three ways. First, the participation in
180 ritual increases the duration and frequency of interactions between individuals.
181 Second, increases in religious knowledge and indoctrination increases knowledge of
182 others in the group, e.g. how they think they ought to behave (Tan, 2006). The
183 latter relates to the access to relevant social category, and in turn the likelihood of
184 using that social categories as stereotypes to guide behaviour such as trust (Tan
185 and Vogel, 2008). Thirdly and indirectly, common beliefs and experiences engender
186 familiarity and closeness, which then carry over to group identification and biases

187 at the levels of similarity in religiosity (Tan and Vogel, 2008) or religious affiliation
 188 (Chuah *et al.*, 2014). Such effects should weaken as religious connectedness weak-
 189 ens, via the above processes as well as a decreasing overlap in social networks. In
 190 the limit, we have interactions across group markers that are orthogonal to religion.
 191 If so, would individual religiosity lose its bite on discrimination?

192 3. The experiment

193 3.1. Measuring trust and religion

194 Following previous studies we used a trust game as a behavioural measure al-
 195 lowing for the expression of discrimination (e.g. Fershtman and Gneezy, 2001; Holm
 196 and Danielson, 2005; Falk and Zehnder, 2013). As shown in figure 1, we used a
 197 binary version of the trust game because it is cognitively less demanding on partic-
 198 ipants, so as to reduce biases from fatigue in view of the 88 games each participant
 199 had to play. The sender and the receiver begins each game with 200 points. We
 200 test two parameterisations of the trust game. In the first, namely the “low stake
 201 game”, the sender decides whether or not to trust, i.e. to send 50 or 0 to the re-
 202 ceiver. If the sender sends the money, the receiver receives three times this amount
 203 and decides whether or not to be trustworthy by returning 100 or 0. In the second,
 204 i.e. the “high stake game”, we increase the stakes by allowing the sender to send
 205 150 or 0 to the receiver, and the receiver decides whether or not to return 300 or 0.

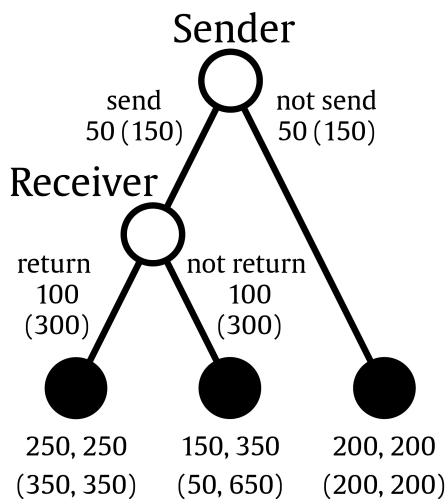


Figure 1: Actions and payoffs for the low (high) stake trust game used in the experiment.

206 Assuming players are rational and money maximising, in equilibrium nobody
 207 sends any money. By backward induction, receivers will prefer more money to less
 208 and not return anything to the sender, i.e. not reciprocate. The sender anticipates
 209 this and prefers not to send anything to the receiver, i.e. not trust, because the
 210 payoff from withholding is higher than sending and not receiving anything in return.
 211 The subgame perfect equilibrium is that neither sender nor receiver sends any
 212 money. This forms the benchmark relative to which we can measure the trust and
 213 trustworthiness of senders and receivers, respectively. It follows that there is low
 214 (high) temptation for the receiver to send 0, and this implies a low (high) stake for
 215 the sender in trusting the receiver. The two games allow us to test our hypotheses
 216 within a wider domain of stakes.

217 In order to obtain measures of discrimination, we administered the trust game
 218 under different social identity conditions using the strategy method (Selten, 1967).
 219 To keep sender and receiver tasks symmetric, in the experiment we allowed receivers
 220 to choose “return” or “not return” under the understanding that the decision only
 221 applies if the sender had chosen “send”. In practice, the sender’s decision would
 222 not influence payoffs in the game if the sender does not send any money. To make
 223 this explicit, we displayed games on the screen as extensive form representations
 224 consistent with this strategy method setup (see figure 2). In the first two rounds of
 225 the experiment, all senders and receivers stated their decision of whether to send
 226 or not to send without knowing the social identities of their co-participants. One
 227 round was for the high stake condition and the other the low stake condition, in
 228 counterbalanced orders across participants. We call these actions *default actions*.

229 In the other rounds that followed, participants stated their decision based on
 230 every possible co-participant’s social identity *type* according to different social *cat-*
 231 *egories* (see table 1). There were 88 rounds in total. Using religious affiliation as
 232 an example of a category, every participant was asked whether they would send
 233 or not send to co-participants of every religious affiliation (type) we provided, i.e.
 234 Buddhist, Christian, Hindu, Jewish, Muslim, other or none. This process was re-
 235 peated for every type of every category, presented in random order after the tasks
 236 without social identity were performed. We call these actions *conditional actions*.
 237 Each category thus constitutes an experimental condition.

238 In each round where participants could base their decisions on the co-participants’
 239 social identities, they were provided with an additional endowment of 100 points
 240 from which they could spend an amount of their choice to increase the probability
 241 of implementing their conditional action instead of their default action. Each point
 242 increases the probability by 1%, and each point unspent accrues as experimental
 243 payoffs. This incentive compatibly elicits their *willingness to discriminate* (WTD).

244 When calculating experimental earnings, we applied the participant’s stated WTD
 245 for the condition in concern to set the probability that the conditional action rather
 246 than the default action was to be used, and randomly determined subject to this
 247 probability.

248 As an example, consider a high stake game where a participant chooses to send
 249 150 to co-participants of high religiosity, and 0 to other types of co-participants.
 250 Assume also that the default is to send 0. A WTD of 20 points means that if the
 251 participant is subsequently randomly matched with a high religiosity co-participant
 252 for the purpose of calculating experimental earnings, there is a 20% probability
 253 that the choice of sending 150 is implemented, and a complementary probability
 254 of 80% that the default action of sending 0 will be implemented. A WTD of
 255 100 points means sending 150 to the high religiosity co-participant for sure, and
 256 sending 0 to a medium or low religiosity co-participant for sure. Higher WTD
 257 values increase the probability that discriminating decisions are used to determine
 258 earnings and therefore represent the decision maker’s willingness to pay for social
 259 identity information to afford discriminating actions.

260 This method of eliciting WTD is novel and has two advantages. First, it exper-
 261 imentally models the costliness involved in discrimination activities, e.g. it takes
 262 time and effort to find out another person’s religiousness or political inclination.
 263 This introduces an externally valid dimension to the test. In retrospect, observed
 264 decisions in previous experiments without this feature (e.g. Tan and Vogel (2008))
 265 capture behaviour “as if” the participant confidently assumes or knows the co-
 266 participant’s social type. Second, the costliness of discrimination is in a way a
 267 disincentive to discriminate that mitigates demand effects in terms of discrimi-
 268 nating actions, and in doing so incentive compatibly reveals the demand of the
 269 individual who despite of this cost goes for it. That said, we should not and do
 270 not try to remove all demand effects from the experiment, for we are interested in
 271 those germane to the act of discriminating on the basis of social identity—to which
 272 we can clearly attribute as the cause of action.

273 Figure 2 shows the experimental interface employed to elicit decisions. The
 274 interface shown in this example is asking participant 39, assigned to the sender
 275 role ("Person A") to make decisions in the religiosity category for a low stake
 276 game (“Round 4”). The game tree displays the actions and associated payoffs
 277 for participants in both roles. The dark shaded button indicates the benchmark
 278 decision this participant has already indicated previously, which cannot be changed
 279 (“SEND”). The participant must make trust decisions in the religiosity category by
 280 clicking on either the SEND or NOT SEND buttons for each possible co-participant
 281 religiosity type, namely “High”, “Medium” and “Low” religiosity. The participant

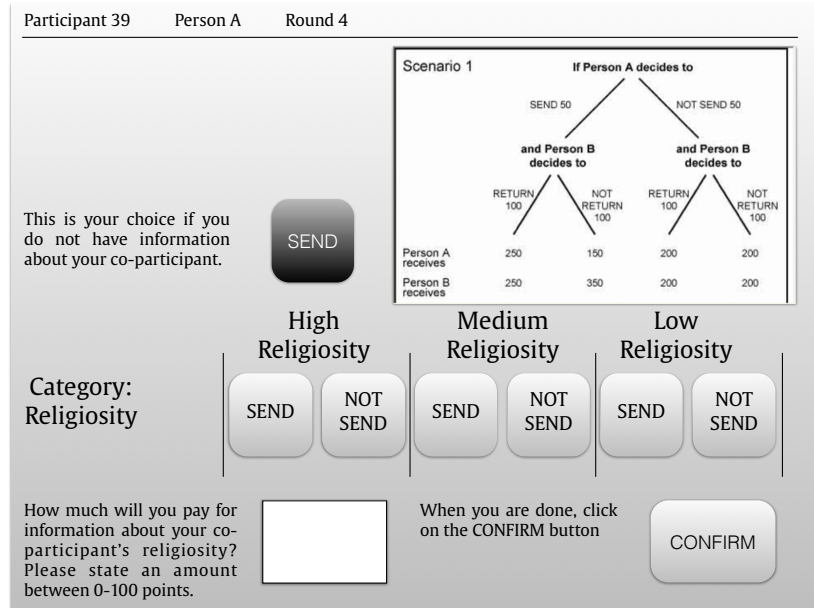


Figure 2: Experimental interface for the elicitation of trust game decisions for different social identity types and WTD. In this example, the category is religiosity.

282 then indicates what proportion of the 100 points to allocate towards implementing
 283 the relevant conditional choice, i.e. their stated WTD. Once all these decisions
 284 have been made, the participant clicks on CONFIRM to enter them and proceed
 285 to the next round, which involves a different category.

286 We administered a pen-and-paper questionnaire after the completion of the
 287 trust game task to collect additional measures. Beliefs were elicited as partici-
 288 pants' expectations of co-participant actions in the trust game. Participants were
 289 asked (in their roles and for every possible value in every social identity category)
 290 to state the probability that such a type of co-participant would choose to send.
 291 Participants were paid depending on how close these beliefs were to true distribu-
 292 tion of choices observed in the experiment, and payments were computed according
 293 to the quadratic scoring rule (Selten, 1998). We also recorded each participant's
 294 own demographic characteristics for each of the social identity categories in order
 295 to classify them in terms of the values for each category shown in table 1. Notably,
 296 we elicited individual religiosity according to the Glock and Stark (1965) dimen-
 297 sions using the denomination-robust 8-item instrument by Rohrbaugh and Jessor
 298 (1975) which yields our religiosity measure. It takes into consideration different di-
 299 mensions of religion, namely belief, ritual, consequences, theology, and experience.
 300 It delivers an individual's overall score between 0 and 32 (see Hill and Hood, 1999).

Condition	Social identity category	Types per category
0	None (benchmark)	
1	Religious denomination	Buddhist, Christian, Hindu, Jewish, Muslim, Muslim, other, none
2	Religiosity	High, medium, low
3	Course	Applied science, arts, business, economics, pure science, social science, other
4	Nationality	Chinese, Malaysian, UK, other
5	Campus location	China, Malaysia, UK
6	Ethnicity	Black, Chinese, Indian, Malay, Middle Eastern, White, other
7	Political orientation	Left-wing, right-wing
8	Voluntary participation	Active member, inactive member, not a member
9	Gender	Male, female
10	Age	≤ 15 years, 16-20, 21-25, 26-30, ≥ 31
11	Birthday group	Even and odd-numbered calendar days

Table 1: Social identity categories and types used in the experiment with resulting experimental conditions.

301 3.2. Hypotheses

302 Piecing together the mosaic of results given by the literature from the perspec-
303 tive of religious identity and connectedness, we shall use our experiment to test
304 the following four hypotheses. These explanations of behaviour are not mutually
305 exclusive and could operate in concert, potentially coexisting or reinforcing each
306 other. We cater for these possibilities in the analysis.

307 **Hypothesis 1 (Statistical discrimination).** *Senders generally believe that re-*
308 *ceivers of higher religiosity are trustworthier, and statistically discriminate by being*
309 *more likely to trust them more than receivers of no or lower religiosity.*

310 The first possibility for the expression of religiosity in terms of economic be-
311 haviour is statistical discrimination (e.g. Anderson *et al.*, 2006) when a person’s
312 social identity contains information regarding particular behaviour tendencies that
313 can feed into strategic considerations, e.g. beliefs of trustworthiness. Statistical
314 discrimination in the trust game applies only to senders, as they must anticipate
315 the likelihood that receivers will fulfill or abuse their trust if invested. Tenets
316 such as charity, neighbourly love and the Golden Rule are common to all religions
317 and may confer a trustworthy reputation on religious people (e.g. Spilka *et al.*,
318 2003, p. 172). If statistical discrimination based on religiosity is present in the
319 current experiment, all senders regardless of their own religiosity should be more

320 likely to behave trustingly towards receivers of greater religiosity levels. Senders
 321 would therefore be more likely to send to receivers of higher religiosity, compared
 322 to receivers of lower religiosity, and this effect should increase with the sender's
 323 religiosity.

324 **Hypothesis 2 (Ingroup love).** *Religiously affiliated senders are more likely to*
 325 *invest trust in receivers who are affiliated to the same religion, relative to receivers*
 326 *who are not religiously affiliated or affiliated to a different religion. This effect*
 327 *increases with the sender's religiosity.*

328 Religiosity is a fundamental measure of religiousness as an individual. It might
 329 vary across religious affiliations. In turn, it weakens connectedness, e.g. from vari-
 330 ances in religious doctrine and prescriptions for behaviour. Further, it is arguably
 331 more subtle than religious affiliation, which may serve mainly as a badge of mem-
 332 bership. It follows that while religiosity might be a weaker marker of religious
 333 connectedness, it could serve to amplify discrimination effects based on religious
 334 affiliation, which increases the salience of religious categories as social markers.

335 Thus, the degree to which people exhibit biased intergroup behaviour is re-
 336 lated to the strength of their identification with the group concerned, and in turn
 337 increases cooperation through stronger social preferences (Farnham *et al.*, 1999;
 338 Chen and Xin, 2009). In particular, greater discrimination can result from a loss in
 339 (implicit) self-esteem in people who highly identify with a particular social group
 340 that is undergoing a threat, i.e. a perceived negative evaluation by others (Smurda
 341 *et al.*, 2006). In the current context this hypothesis suggests that greater trust in
 342 co-participants of the same religious group is relatively stronger in more religious
 343 participants in either role. Such effects are reinforced by individual religiosity,
 344 which embodies closeness nurtured through joint participation in activities. This,
 345 in turn, increases trust by increasing religious connectedness through commitment
 346 to the creed, i.e. *ingroup membership*. Religiously affiliated senders would therefore
 347 be more likely to send to receivers belonging to the same creed, compared to re-
 348 ceivers who are atheists or followers of other creeds, and this effect should increase
 349 with the sender's religiosity.

350 **Hypothesis 3 (Religious affinity).** *Religiously affiliated senders are more likely*
 351 *to invest trust in receivers who are affiliated to some—regardless of which—religion.*
 352 *This effect increases with the sender's religiosity.*

353 The third possibility we test is that people consider their religious affiliation or
 354 religiosity a pertinent social identity and exhibit biased intergroup behaviour (i.e.

355 ingroup favouritism or outgroup prejudice) towards others depending on whether
 356 or not they are *also* religiously affiliated to some creed—irrespective of whether or
 357 not it is the same one. For example, former Prime Minister of the United Kingdom
 358 Tony Blair articulated this thinking publicly at the Westminster Faith Debate on
 359 “Religion in Public Life” held in London on 24 July 2012,² “I find a connection
 360 with people who are of faith, even though they’re of a different faith to my own,
 361 precisely because there is a certain space, philosophically and emotionally, you
 362 can congregate around.” Put differently, this weakens the religious connectedness
 363 relative to that between individuals of the same creed. That said, religious *affinity*
 364 does not extend to group membership, and its effect should be relatively weaker.
 365 A religious affiliate would thus be more likely to send in the trust game to another
 366 who is affiliated to *some* religion—regardless of whether or not it is the same creed,
 367 and this effect should increase with the sender’s religiosity.

368 **Hypothesis 4 (General prejudice).** *Religious senders are generally more bi-*
 369 *ased, such that they are more likely to send to receivers with the same non-religious*
 370 *social identity.*

371 Finally, since the middle of the last century (Adorno *et al.*, 1950; Allport, 1954),
 372 psychological studies have repeatedly identified links between individual religious-
 373 ness and attitudes of prejudice. Such prejudice is counter to religious teachings
 374 of charity, forgiveness, love and compassion. This link is complex and dependent
 375 on a number of other factors including religious orientation, social desirability and
 376 doctrinal attitudes towards particular out-groups (Spilka *et al.*, 2003, chapter 14).
 377 Links between religiosity and prejudicial attitudes have been demonstrated repeat-
 378 edly (Allport and Ross, 1967; Altemeyer and Hunsberger, 1992; Hunsberger and
 379 Jackson, 2005; Hunsberger, 1996; Jackson and Hunsberger, 1999). We consider
 380 the possibility that religious people are generally more discriminating in the con-
 381 text with the weakest religious connectedness. If this holds, we should find that
 382 senders of higher religiosity have greater WTD across all social identity categories
 383 or overall. We should also find that religious senders are more likely to send to
 384 the “ingroup” based even on non-religious categories. In experimental terms, we
 385 are thus testing for the effect of religion on the individual’s inherent disposition to
 386 discriminate.

²Tony Blair is founding patron of the Tony Blair Faith Foundation and recently stepped down as the Special Envoy of the Middle East Quartet. The quote was extracted from <http://faithdebates.org.uk/debates/2012-debates/religion-and-public-life/religion-public-tony-blair-rowan-williams/> (2012).

387 *3.3. Procedure*

388 We ran the experiment at the China, Malaysia, and UK campuses of the Uni-
389 versity of Nottingham. All campuses use English as the medium of instruction,
390 and share common degree structures and syllabi. This participant pool affords
391 high direct comparability of data collected from these diverse cultures. The cul-
392 tural diversity of our sample widens the study's domain of validity. Such diversity
393 increases the number of subjects of each social identity type. Thus, there is a much
394 larger number of ingroup and outgroup combinations, which we shall also use to
395 test for the cultural sensitivity or robustness of our findings. We used a com-
396 puterised interface in English with 545 student volunteers (273 senders and 272
397 receivers) recruited by poster and e-mail announcements for 90-minute sessions of
398 20-40 participants. The experimental software was programmed in Visual Basic 6,
399 and the computerised text was in English.

400 Our experiment followed the standards of cross-cultural experimental economics
401 (Roth *et al.*, 1991; Herrmann *et al.*, 2008). Instructions, comprehension quiz ques-
402 tions, belief elicitation and demographic questionnaire were provided in the respec-
403 tive local languages. The English version was always available to participants in
404 China and Malaysia on demand. The original English version was first translated
405 to Chinese and Malay, and then back translated to English to check for consis-
406 tency. Any inconsistencies were resolved in consensus with the co-authors on this
407 project. Translations were performed by three people who are not co-authors on
408 the project, but are native speakers of Chinese or Bahasa Melayu and English. All
409 of them have professionally worked in the respective two languages. The English
410 version of the experimental instructions are found in the online appendix.

411 Participants were randomly assigned to either the sender or receiver role through-
412 out the experiment, and made trust game decisions first for socially unidentified
413 co-participants and then for each of the social identity categories and types as de-
414 scribed (see table 1), for both the low and high stake conditions, in individualised
415 random order. After all experimental sessions were completed, participants were
416 randomly matched experiment-wide across the three locations, and one social iden-
417 tity category was selected randomly to determine earnings. The participants' total
418 earnings were the points from the game, those remaining from the WTD endow-
419 ment, and payments depending on the accuracy of their beliefs in one randomly-
420 chosen belief task, with the answer compared to the statistical return rate of the
421 sample for the type of participant. We paid participants at the rates of Renminbi
422 (RMB) 0.20, Ringgit Malaysia (RM) 0.08 and Pounds Sterling (£) 0.04 per point
423 earned plus a show-up fee (RMB 25, RM 10 or £5 respectively). Earnings were
424 collected a week after the final session to allow for experiment-wide participant

425 matching over the three locations. We paid participants in the three locations
 426 RMB 63.68, RM 28.66 and £14.65 on average. Each session lasted approximately
 427 1.5h. The exchange rate between the three currencies we used was determined
 428 using the Big Mac Index published annually by *The Economist* magazine.

429 4. Results

430 Before testing our four hypotheses we look at some basic features of the data.
 431 Appendix A1 provides the distributions of participant types of each category across
 432 the three locations, and a summary of mean WTD, beliefs and actions across
 433 conditions and types by roles and locations. Religiosity scores ranged from 0-30
 434 and the average was 11.86. The mean age was 20.48 (standard error of 0.008). In
 435 ethnic and religious terms, China is most homogeneous with 162 ethnic Chinese,
 436 134 atheists and 25 Buddhists, out of 164 participants in total. Malaysia and
 437 UK are relatively heterogeneous, with Chinese (106) and White (115) as majority
 438 ethnicities, and Buddhists (61) and Christians (56) as majority religions, out of 187
 439 and 194 participants in total, respectively. In Malaysia and UK, the non-majority
 440 religions are all represented, apart from no Jewish participant in the Malaysia
 441 subsample. In the high (low) stake baseline games where decisions could not be
 442 conditioned on the social identity of co-participants, 38.1% (56.0%) of senders chose
 443 to trust, and 27.9% (43.0%) of receivers chose to reciprocate. Further details may
 444 be found in appendix A1.

445 4.1. Preliminaries

446 We first check for independent effects of religiosity on trust, to confirm the result
 447 from previous studies that forms our departure point. Our measure of religiosity
 448 is *RELI*, which is the mean centered to avoid multi-collinearity in our regressions
 449 below, following Marquardt (1980). There is no significant difference in the religiosity
 450 of senders who trust and those who do not in both the high (t-test, $p = 0.780$,
 451 2-tailed henceforth) and in the low stake condition ($p = 0.758$), or for receivers in
 452 either the high ($p = 0.775$) or low condition ($p = 0.886$). To corroborate, individual
 453 level random effects binary logit regressions controlling for beliefs, stake and gender
 454 show that religiosity does not significantly influence trust and trustworthiness
 455 ($p = 0.921$ and $p = 0.375$, respectively; see appendix A1 for details). As there is no
 456 evidence for an independent influence of religiosity on trust and trustworthiness.

457 Senders spent an average of 21.4 and receivers 22.0 out of a hundred points
 458 to increase the probability of implementing their conditional actions (i.e. WTD)
 459 in the religious affiliation condition, where actions could be conditioned on the

460 co-participant’s religious denomination. WTD rises with one’s religiosity level at
 461 19.3, 21.2, and 30.9 for low, medium and high religiosity, respectively. Senders spent
 462 an average of 20.9 and receivers 20.0 points on WTD in the religiosity condition,
 463 where actions could be conditioned on the co-participants level of religiousness.
 464 WTD rises with one’s religiosity level at 19.8, 19.9 and 26.0 for low, medium and
 465 high religiosity, respectively. The same pattern holds for receivers at 19.5, 23.0,
 466 and 29.6 (18.7, 21.8 and 21.5), respectively, for low, medium and high religiosity.
 467 Further, 58.6% (50.7%) of senders and 48.2% (43.9%) of receivers, discriminate on
 468 the basis of religious affiliation (religiosity) in the sense that they choose different
 469 conditional actions for different types of co-participants.³ With information of
 470 religious affiliation (religiosity), 23% (22.7%) of behaviour differs from that in the
 471 baseline: 9.2% (10.1%) increase and 13.8% (12.7%) decrease trust. As described
 472 in section 3.2, this widely observed discrimination can take a number of forms as
 473 expressed in our four hypotheses, which we test next.

474 To control for and to test the interplay of effects from multiple variables and
 475 their interactions, we use multivariate analysis. Our regressions include individual-
 476 level random effects to control for the potential non-independence of multiple ob-
 477 servations per individual. We never provided participants with feedback between
 478 choices so there is independence between observations across participants. We al-
 479 ways control for low and high stake conditions (*STAKE* = 1 for the high stake
 480 condition and = 0 for the low stake condition), and for own gender (*FEMALE* = 1
 481 for females and = 0 for males) due to known gender effects on trust game behavior
 482 (Croson and Buchan, 1999). Our regressions always include individual religios-
 483 ity *RELI*. Results are robust to the inclusion of *WTD* or dummy variables for
 484 location (these alternative models are reported in online appendix OA3).

485 4.2. Statistical discrimination

486 Statistical discrimination implies that senders believe that some types of re-
 487 ceivers are trustworthier than others. These stated beliefs are given by the depen-
 488 dent variable *BELIEF* = 0 to 1. According to hypothesis 1, a sender, irrespective
 489 of her own social identity, uses the receiver’s religiosity to form an expectation of
 490 their trustworthiness. Participants should therefore be willing to pay more than in
 491 identity conditions unrelated to any possible statistical discrimination. Our control

³For the Malaysia and UK subsamples, we find no significant difference between trust in the baseline and all information conditions overall. As for the Chinese subsample, there is lower trust in the age, religion, religiosity, ethnicity, education, political orientation and voluntary participation conditions. Welfare is lower if we assume a uniform distribution of types. see our t-tests in the online appendix OA1.

492 condition is a “birthday” category where actions were conditioned on whether the
 493 co-participant was born on an even or odd day of the month. There, mean WTD
 494 is 17.7 and its confidence interval is 16.1-19.2. The mean WTDs of the religious
 495 affiliation and religiosity categories are 21.4 and 20.9, respectively, i.e. outside the
 496 interval. We also examine how beliefs regarding the trustworthiness of receivers
 497 vary with the decision maker’s religiosity using a religiosity *level* variable *RLEV*.
 498 This variable was used in the experiment to elicit participants’ beliefs and actions
 499 contingent on the co-participant’s low (*RLEV*=0 if religiosity questionnaire score
 500 is 0-10), medium (*RLEV*=1 if score is 11-20) and high (*RLEV*=2 if score is above
 501 20) religiosity.⁴ We test this effect on senders across all religious affiliations. Fur-
 502 ther, to test if being of a similar religiosity level reinforces statistical discrimination,
 503 we interact *RLEV* with *RELI*.

504 Senders’ beliefs that low, medium, and high religiosity receivers would act trust-
 505 worthily are 0.33, 0.41 and 0.43 respectively, pooled over both stake conditions.
 506 Average beliefs and actions are shown broken down by participants’ own religiosity
 507 levels in figure 3. Senders of diverse religiosities believe that receivers of higher
 508 religiosity are more likely to return (top left figure), and are more likely to send
 509 to them (top right figure). Receivers of diverse religiosities believe that senders of
 510 higher religiosity are more likely to trust (bottom left figure), and are as likely to
 511 return to senders of different religiosity levels.

512 Regression analysis confirms that more religious people are trusted more by
 513 people across different levels of religiosity, as the *RLEV* coefficient is positive and
 514 significant in models 1-3. This result holds overall, for people without or with reli-
 515 gious affiliation, as demonstrated by the regressions on the pooled sample (model
 516 1) and subsamples disaggregated by people without (model 2) or with (model 3) reli-
 517 gious affiliation. Further, the statistically insignificant *RLEV* \times *RELI* coefficient
 518 in model 4 shows that senders of different levels of religiosity are as likely to be-
 519 lieve that receivers of high religiosity are trustworthier, confirming that statistical
 520 discrimination holds across senders irrespective of religiosity.

521 Next, we test if religious people are indeed trusted more. Define a_{type} as the
 522 action that is conditionally chosen for the corresponding type of co-participant (see
 523 the variety of types per category in table 1). We do not use the conditional action
 524 a_{type} (= 1 if send and 0 otherwise) as dependent variable as it is not incentive

⁴The reason for this variable is that eliciting such conditional responses on the basis of every possible value of co-participant religiosity score is impractical. We also use *RLEV* in figure 3 merely for the purpose of clearer exposition to break down the beliefs and decisions of participants according to their own level of religiosity.

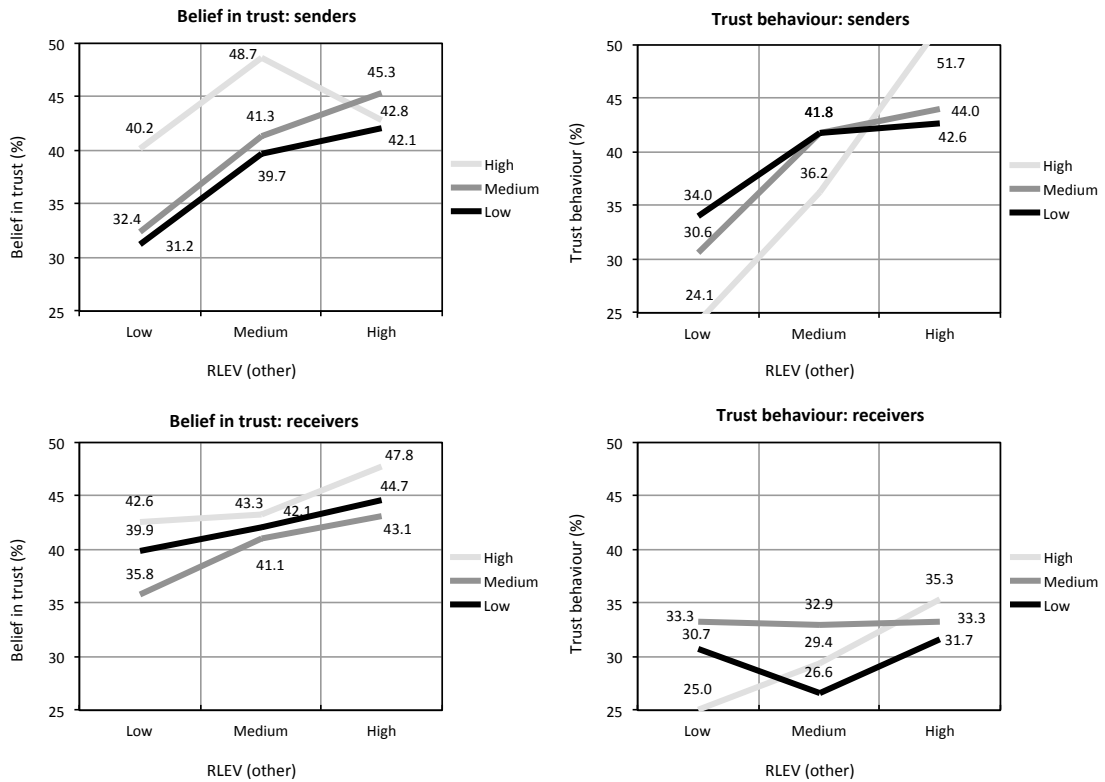


Figure 3: Senders' and receivers' beliefs and acts of trust and reciprocity (%) depending on co-participant level of religiosity (RLEV (other)) pooled for both stake conditions. Each graph represents participants grouped by their own religiosity level (RLEV (own)). The standard errors of the means ranged from 0.64 to 3.80 but are not displayed for the sake of presentational clarity.

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>BELIEF</i>	<i>BELIEF</i>	<i>BELIEF</i>	<i>BELIEF</i>	<i>WSEND</i>	<i>WSEND</i>
	All	Atheists	Affiliates	All	All	All
<i>STAKE</i>	-0.044*** (0.010)	-0.067*** (0.014)	-0.022 (0.015)	-0.044*** (0.010)	-0.166*** (0.018)	-0.151*** (0.017)
<i>FEMALE</i>	-0.037 (0.023)	-0.030 (0.033)	-0.042 (0.033)	-0.037 (0.023)	0.059 (0.039)	0.072** (0.037)
<i>RELI</i>	0.027* (0.014)	-0.004 (0.030)	0.053** (0.021)	0.052** (0.021)	0.007 (0.024)	-0.002 (0.023)
<i>RLEV</i>	0.054*** (0.006)	0.051*** (0.009)	0.057*** (0.009)	0.053*** (0.006)	0.020* (0.011)	0.003 (0.011)
<i>RLEV by RELI</i>				-0.012 (0.008)		
<i>BELIEF</i>						0.331*** (0.042)
<i>CONSTANT</i>	0.320*** (0.021)	0.329*** (0.029)	0.287*** (0.033)	0.320*** (0.021)	0.475*** (0.035)	0.369*** (0.036)
<i>Overall r²</i>	0.044	0.045	0.058	0.045	0.039	0.095
<i>N</i>	1602	798	804	1602	1602	1602

Table 2: Random effects regressions to test for statistical discrimination. The data is from the religiosity condition. Models 1, 4, 5 and 6 are based on data from all senders, 2 from senders without religious affiliation, and 3 from senders with religious affiliation. Dependent variable *BELIEF* = stated probability of receiver returning, and *WSEND* = $WTD \times a_{type} + (1 - WTD) \times a_{default}$, where *WTD* = stated willingness to discriminate, a_{type} = the conditional action chosen for a certain receiver type, and $a_{default}$ = the default action. *RLEV* in this table refers to the co-participant's religiosity level. Random effects are at the participant level. Significance levels are denoted by *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$. Standard errors are in parentheses.

525 compatible. This is because the conditional actions of participants with $WTD = 0$
 526 will never be implemented and therefore carry no weight, while the default action
 527 $a_{default}$ should carry full weight.⁵ The dependent variable we use is the weighted
 528 average of senders' actions $WSEND = WTD \times a_{type} + (1 - WTD) \times a_{default}$.
 529 $WRETURN$ is the weighted average of receivers' actions and calculated accord-
 530 ingly. Model 5 shows a marginally significant $RLEV$ effect in the pooled sample,
 531 while model 6 shows that there this becomes insignificant once we control for beliefs.
 532 Models 5 and 6 show that trust actions depend on religiosity of the co-participant
 533 and beliefs of the co-participant's trustworthiness. These beliefs are consistent
 534 with actions, and beliefs are themselves increasing in religiosity. This supports the
 535 statistical discrimination hypothesis.⁶

536 **Result 1 (Statistical discrimination).** *Senders of all levels of religiosity believe*
 537 *that receivers of higher religiosity are trustworthier, and behave consistently with*
 538 *this belief by trusting them more.*

539 4.3. Ingroup love

540 According to hypothesis 2, higher religiosity strengthens the identification of
 541 participants with the religious group they are affiliated to, and thereby amplifies
 542 ingroup biases based on affiliation. We use $WSEND$ as the dependent variable. To
 543 test for ingroup biases, we define a dummy variable $INGROUP$ that takes on the
 544 value of 1 when participants are making decisions conditional on participants that
 545 are of the same type as them for the category in concern. In this case of ingroup
 546 biases in religious affiliation, $INGROUP = 1$ when co-participants are of the same
 547 religious affiliation, and $= 0$ otherwise. When people have information about oth-
 548 ers, they use it to guide their actions. In turn, this feeds into behaviour. Thus,
 549 our models of $WSEND$ include $BELIEF$ to control for statistical discrimination.
 550 However, beliefs do not necessarily explain behaviour completely, for taste-based
 551 discrimination can also play a role.⁷ Thus, by controlling for the effect of statistical
 552 discrimination with $BELIEF$, $INGROUP$ is a measure for taste-based discrimi-
 553 nation, such that remaining ingroup effects are attributable to it. We include the
 554 mean centered measure of individual religiosity $RELI$ as well as the interaction

⁵That said, our results are robust to adopting a_{type} as the alternative dependent variable.

⁶The results of Models 1, 2, 3, 5 and 6 are robust to the inclusion of interaction term of $RLEV \times RELI$.

⁷Also because of the taste-based motive to acquire information, beliefs do not necessarily positively correlate with WTD .

	(7)	(8)	(9)	(7')	(8')	(9')	(10)
	<i>WSEND</i>	<i>WSEND</i>	<i>WSEND</i>	<i>WSEND</i>	<i>WSEND</i>	<i>WSEND</i>	<i>WRETURN</i>
	All	Atheists	Affiliates	All	Atheists	Affiliates	All
<i>BELIEF</i>	0.134*** (0.027)	0.135*** (0.039)	0.125*** (0.039)	0.139*** (0.029)	0.171*** (0.041)	0.110*** (0.041)	0.070*** (0.023)
<i>STAKE</i>	-0.152*** (0.011)	-0.157*** (0.015)	-0.146*** (0.016)	-0.141*** (0.011)	-0.138*** (0.015)	-0.142*** (0.017)	-0.109*** (0.009)
<i>FEMALE</i>	0.060 (0.038)	0.060 (0.057)	0.074 (0.052)	0.048 (0.037)	0.041 (0.057)	0.064 (0.051)	-0.017 (0.043)
<i>RELI</i>	0.000 (0.024)	0.017 (0.053)	0.017 (0.033)	-0.007 (0.024)	0.013 (0.052)	-0.004 (0.033)	-0.052** (0.026)
<i>INGROUP</i>	0.048*** (0.016)	0.022 (0.028)	0.061** (0.026)	0.043*** (0.016)	0.050* (0.028)	0.040 (0.027)	0.024* (0.013)
<i>INGROUP</i> <i>by RELI</i>	0.037* (0.020)	0.008 (0.040)	0.034 (0.029)	0.006 (0.020)	0.016 (0.041)	0.006 (0.031)	0.014 (0.016)
<i>CONSTANT</i>	0.452*** (0.029)	0.480*** (0.044)	0.421*** (0.044)	0.452*** (0.028)	0.461*** (0.044)	0.444*** (0.044)	0.381*** (0.029)
<i>Overall r²</i>	0.055	0.063	0.050	0.046	0.061	0.038	0.035
<i>N</i>	3730	1862	1868	3728	1859	1869	3638

Table 3: Random effects regressions to test for ingroup love. Models 7, 8, 9 and 10 are on data from the religious affiliation condition. Models 7'-9' analyse data from the ethnicity condition. Models 7 and 7' are based on data from all senders, 8 and 8' from senders without religious affiliation, 9 and 9' from senders with religious affiliation, and 10 from all receivers. The dependent variable for senders is $WSEND = WTD \times a_{type} + (1 - WTD) \times a_{default}$, where WTD = stated willingness to discriminate, a_{type} = the conditional action chosen for a certain receiver type, and $a_{default}$ = the default action. The dependent variable for receivers is $WRETURN$, and computed as such. Random effects are at the participant level. Significance levels are denoted by *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$. Standard errors are in parentheses.

555 term $INGROUP \times RELI$, which tests if ingroup biases are strengthened by the
 556 decision maker's religiosity.

557 Tests are performed on data from the religious affiliation condition rather than
 558 the religiosity condition where there is no clear sense of group membership. Note
 559 that participants were not told their own religiosity level according to our survey
 560 measure nor asked to state their perception of their own religiosity in absolute
 561 terms or relative to other participants. Figure 4 shows the percentage change in
 562 trust actions in $WSEND$ conditional on the receiver's religious affiliation, relative
 563 to the baseline where decisions are made unconditionally. In UK and Malaysia,
 564 where most participants have religious affiliations, we observe increases in trust for
 565 the ingroup relative to the baseline, i.e. ingroup favouritism. In China, where most
 566 participants are atheists, we observe decreases in trust for the outgroup relative to
 567 the baseline, i.e. outgroup prejudice. We scrutinise this econometrically.

568 Referring to table 3, model 7 shows that senders are more trusting towards
 569 those of the same religious affiliation ($INGROUP$ is positive and significant) and
 570 this effect increases with one's religiosity ($INGROUP \times RELI$ is positive and
 571 marginally significant). The figure in appendix A3 shows that ingroups are con-
 572 sistenty trusted more than outgroups by people across different religions. This
 573 finding is also robust to contextual differences across groups and societies.⁸ This
 574 ingroup effect does not hold for atheists but for religious affiliates (see models 8 and
 575 9, respectively). We run the same tests on receivers and find only a marginally sig-
 576 nificant positive $INGROUP$ effect on $WRETURN$ of the pooled data (see model
 577 10), which corroborates the taste-based discrimination interpretation. Thus, we
 578 find support for hypothesis 2.⁹

579 We also consider the possibility that religious affiliation serves as a proxy for
 580 ethnicity and vice versa. To investigate this, we analyse actions conditional on
 581 ethnicity. Regressions similar to models 7-9 on data from the ethnicity condition
 582 (models 7'-9') show significant ethnic biases ($INGROUP$ is significant in model
 583 7'). This effect is driven by atheists, as $INGROUP$ is significant for participants
 584 without religious affiliation (model 8') but not for participants with religious affil-
 585 iation (model 9'). If religious affiliation is used as a proxy for ethnicity, and it is

⁸Members of majorities and minorities of homogeneous (China) and heterogeneous (Malaysia and UK) societies consistently trust the ingroup more. Further, participants residing in more heterogeneous societies intermingle with more diverse people, and this might influence the nature of group biases, but we find that patterns of discrimination are alike. Details are provided in online appendix OA4.

⁹The results of models 7-10 are robust to the exclusion of $BELIEF$.

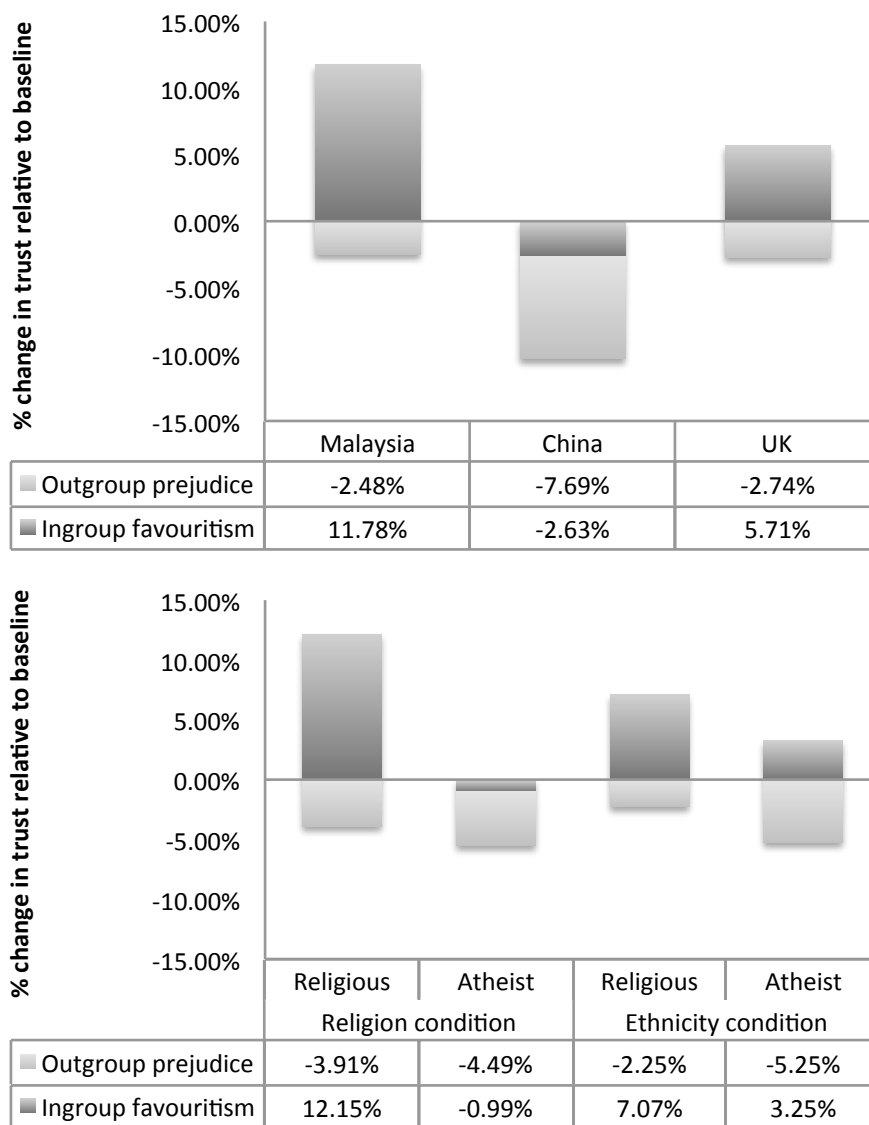


Figure 4: Senders' change in trust, relative to the baseline and as a percentage of trust in the baseline, when faced with an ingroup or outgroup co-participant. The top figure shows the change in trust observed in each campus. The bottom figure shows this for religious participants or atheists in the religious affiliation or ethnicity conditions (bottom).

586 actually ethnicity that drives behaviour, then the influence of ethnicity should be
 587 stronger than that of religion. Instead, we find that religious participants discrim-
 588 inate more on the basis of religious affiliation, while atheists discriminate more on
 589 the basis of ethnicity.¹⁰ Figure 4 illustrates this contrast.¹¹

590 **Result 2 (Ingroup love).** *Religiosity enhances the ingroup favouritism shown by*
 591 *senders towards receivers of the same religious affiliation. This effect is driven by*
 592 *people with religious affiliations. Instead, atheists discriminate on ethnicity, which*
 593 *can be proxied by religious affiliation. Evidence of ingroup favouritism by receivers*
 594 *is marginally significant.*

595 4.4. Religious affinity

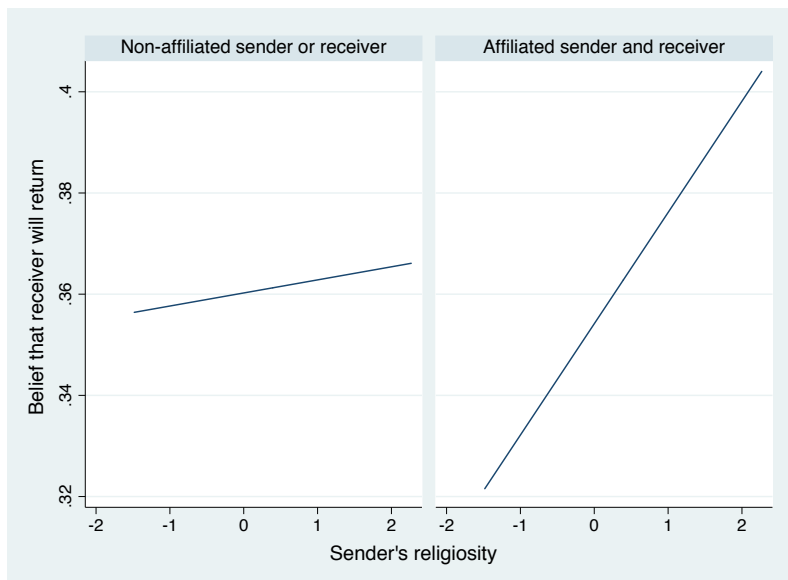


Figure 5: Plot of linear fit for senders' beliefs and religiosities. Senders' beliefs that receivers will return increase with sender religiosity if both participants are religiously affiliated (right), but not if even one of the two are not religiously affiliated (left).

¹⁰We also test this on campus and nationality, but find no significant biases (see online appendix OA2).

¹¹The relative impact of ingroup favouritism vis a vis outgroup prejudice can be captured by a comparison of conditional ingroup and outgroup data to unconditional data. Relative to the baseline, the ingroup is trusted more in Malaysia and UK, and in China the outgroup is trusted less.

	(11)	(12)	(13)	(14)	(15)	(16)
	<i>BELIEF</i>	<i>WSEND</i>	<i>BELIEF</i>	<i>BELIEF</i>	<i>BELIEF</i>	<i>WSEND</i>
	All	All	All	Atheists	Affiliates	All
<i>STAKE</i>	-0.061*** (0.006)	-0.152*** (0.011)	-0.061*** (0.006)	-0.089*** (0.009)	-0.033*** (0.009)	-0.159*** (0.011)
<i>FEMALE</i>	-0.020 (0.023)	0.062 (0.038)	-0.019 (0.023)	-0.009 (0.033)	-0.006 (0.033)	0.058 (0.039)
<i>RELI</i>	-0.002 (0.015)	0.002 (0.025)	-0.019 (0.016)	0.037 (0.031)	-0.011 (0.026)	-0.004 (0.028)
<i>INGROUP</i>	-0.026*** (0.009)	0.049*** (0.016)	-0.026*** (0.009)	-0.046*** (0.016)	-0.024 (0.015)	0.045*** (0.016)
<i>INGROUP</i> <i>by RELI</i>	-0.007 (0.012)	0.038* (0.020)	-0.010 (0.012)	-0.041* (0.024)	-0.004 (0.018)	0.036* (0.020)
<i>AFFILIATE</i>	0.051*** (0.012)	-0.008 (0.020)	0.039*** (0.013)		0.051*** (0.015)	-0.005 (0.022)
<i>BELIEF</i>		0.134*** (0.027)				
<i>AFFILIATE</i> <i>by RELI</i>			0.038** (0.015)		0.034* (0.018)	0.013 (0.026)
<i>CONSTANT</i>	0.382*** (0.017)	0.455*** (0.029)	0.380*** (0.017)	0.436*** (0.024)	0.326*** (0.030)	0.506*** (0.028)
<i>Overall r²</i>	0.010	0.055	0.012	0.036	0.014	0.037
<i>N</i>	3730	3730	3730	1862	1868	3738

Table 4: Random effects regressions to test for religious affinity. The data is from the religious affiliation condition. Models 11-13 are based on data from all senders, 14 and 15 are on senders without and with religious affiliation, respectively. Dependent variable *BELIEF* = stated probability by senders (by receivers) of receiver returning (or sender sending), and *WSEND* = $WTD \times a_{type} + (1 - WTD) \times a_{default}$. where *WTD* = stated willingness to discriminate, a_{type} = the conditional action chosen for a certain co-participant type, and $a_{default}$ = the default action. Random effects are at the participant level. Significance levels are denoted by *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$. Standard errors are in parentheses.

596 Hypothesis 3 posits that religious affiliation or religiosity can serve as social
 597 identities irrespective of creed. Result 1 suggests this, but a stricter test involves
 598 data from the religious affiliation condition where there is a clear demarcation
 599 of social identity for self and other. This test distinguishes itself from previous
 600 ones in that it considers the possibility that people trust each other more so long
 601 as they both have some religious affiliation, even if they are of different religious
 602 denominations. Figure 5 plots the linear fit of sender’s beliefs in the trustworthiness
 603 of the receiver as a function of the sender’s religiosity in the absence (left) or
 604 presence (right) of religious affinity, and shows the presence of religious affinity.

605 To test this formally, we derive the dummy variable *AFFILIATE*, which takes
 606 on a value of 1 when a participant who is religiously affiliated faces a task where
 607 the other is also religiously affiliated, regardless of creed. It takes on a value of zero
 608 when either the participant is an atheist or the task involves trusting an atheist.
 609 Referring to table 4, *AFFILIATE* is positive and significant in model 11, showing
 610 us that religious people believe that other religious people are trustworthier than
 611 atheists. However, it is insignificant in model 12, showing us that despite this
 612 belief they are not trusted more. Model 13 includes an *AFFILIATE* \times *RELI*
 613 variable and finds that such beliefs are amplified by the sender’s religiosity. Model
 614 16 corroborates model 12 and further shows that there is no higher order effect on
 615 actions.

616 The effect of religious affinity on actions is weaker than that of being affiliated to
 617 the same denomination: in models 12 and 16, *INGROUP* and *INGROUP* \times *RELI*
 618 are positive and significant, while *AFFILIATE* and *AFFILIATE* \times *RELI* are
 619 not. This supports the arguments presented in hypotheses 2 and 3 that connect-
 620 edness enhances group identification. Beliefs only partially drive behaviour on
 621 the basis of mere religious affinity. Beyond statistical discrimination driven by
 622 beliefs, taste-based discrimination holds only if people are affiliated to the same
 623 denomination—not just by mere religious affinity. We further scrutinize the nega-
 624 tive and significant *INGROUP* effect and its interaction term in model 13, which
 625 implies that religiosity diminishes the belief effect for those from the same denom-
 626 ination. This peculiar result of lower beliefs of trustworthiness in the ingroup is
 627 driven by atheists, as shown by our regressions on data disaggregated by atheists
 628 and religious affiliates (models 14 and 15 respectively). It suggests that atheists
 629 are more suspicious of each other, even though it does not lead to lower trust. In
 630 contrast, religious affiliates ultimately trust the ingroup more. These behaviors
 631 suggest taste-based discrimination.

632 **Result 3 (Religious affinity).** *Senders’ religiosity enhances beliefs about reli-*
 633 *giously affiliated receivers’ trustworthiness regardless of whether or not they belong*

	Senders				Receivers			
	Low stake		High stake		Low stake		High stake	
Category	ρ	p	ρ	p	ρ	p	ρ	p
Gender	0.089	0.146	0.142	0.020 **	-0.014	0.825	0.026	0.676
Age	0.149	0.015 **	0.047	0.449	-0.066	0.288	0.062	0.318
Nationality	0.117	0.057 *	0.042	0.492	0.012	0.843	0.025	0.691
Religion	0.127	0.038 **	0.178	0.004 ***	0.101	0.101	0.095	0.124
Religiosity	0.115	0.060 *	0.117	0.056 *	0.040	0.518	0.115	0.063 *
Ethnicity	0.193	0.002 ***	0.109	0.076 *	0.083	0.177	0.002	0.969
Campus	0.130	0.034 **	0.125	0.042 **	0.057	0.356	0.029	0.645
Course	0.108	0.079 *	0.111	0.070 *	0.062	0.317	0.050	0.422
Politics	0.121	0.048 **	0.083	0.178	-0.060	0.334	0.046	0.454
Participation	0.117	0.055 *	0.024	0.702	0.042	0.498	0.000	0.998
Birthday	0.091	0.137	0.118	0.054 *	0.002	0.973	0.099	0.108

Table 5: Correlation between religiosity and willingness to discriminate for different categories. Spearman ρ coefficients for and associated p -values given. The symbols ***, ** and * denote significance at or above the 0.01, 0.05, 0.1 levels respectively.

634 *to the same denomination, but they do not invest more trust despite this belief.*

635 4.5. General prejudice

636 Hypothesis 4 posits that more religious people discriminate more over a range of
637 social identities including non-religious ones. Our univariate tests examine whether
638 more religious participants have relatively higher WTD across the different social
639 identity categories we use. We construct, for each participant, an average WTD
640 as the unweighted mean WTD across all of them. The correlation between aver-
641 age WTD and religiosity is positive and significant across both roles ($\rho=0.087$,
642 $p=0.0449$). This relationship is significant for senders ($\rho=0.123$, $p=0.0442$) but
643 insignificant for receivers ($\rho=0.045$, $p=0.4658$). Further, the average religiosity
644 of those whose WTD is zero throughout the experiment ($\mu=33.5$, $n=73$) is sig-
645 nificantly less than that of others ($\mu=40.5$, $n=457$, $p=0.01$). We also examine
646 the correlation between religiosity and WTD across social categories (see table 5).
647 Again, these correlations are generally insignificant for receivers. For senders, in-
648 formation on religious affiliation, religiosity and ethnicity are salient and serve as
649 social identifiers that markedly separate participants. In turn, the correlations of
650 religiosity and the WTD along these dimensions are robustly significant. Referring
651 to table 6, model 17 shows that WTD is positively related to religiosity, which sug-
652 gests that more religious people are more prone to religious-based discrimination.

653 Further, we test if religious participants are generally more prone to ingroup
654 favouritism, i.e. even if social identities of co-participants are unrelated to religion.

	(17)	(18)	(19)
	<i>WTD</i>	<i>BELIEF</i>	<i>WSEND</i>
	All	All	All
<i>STAKE</i>	0.013** (0.005)	-0.045*** (0.003)	-0.154*** (0.005)
<i>FEMALE</i>	0.021 (0.023)	-0.006 (0.020)	0.047 (0.035)
<i>RELI</i>	0.031** (0.015)	0.033** (0.013)	0.000 (0.022)
<i>INGROUP</i>		0.009** (0.004)	0.022*** (0.006)
<i>INGROUP</i> <i>by RELI</i> <i>BELIEF</i>		-0.001 (0.005)	0.001 (0.008) 0.170*** (0.013)
<i>CONSTANT</i>	0.195*** (0.016)	0.410*** (0.014)	0.447*** (0.025)
<i>Overall r²</i>	0.010	0.016	0.060
<i>N</i>	5874	16438	16438

Table 6: Random effects regressions to test for general prejudice. The data is from the non-religion conditions. Models 17-19 are based on data from all senders. Dependent variable WTD = stated willingness to discriminate, $BELIEF$ = stated probability of receiver returning, and $WSEND = WTD \times a_{type} + (1 - WTD) \times a_{default}$, where a_{type} = the conditional action chosen for a certain co-participant type, and $a_{default}$ = the default action. Random effects are at the participant level. Significance levels are denoted by *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$. Standard errors are in parentheses.

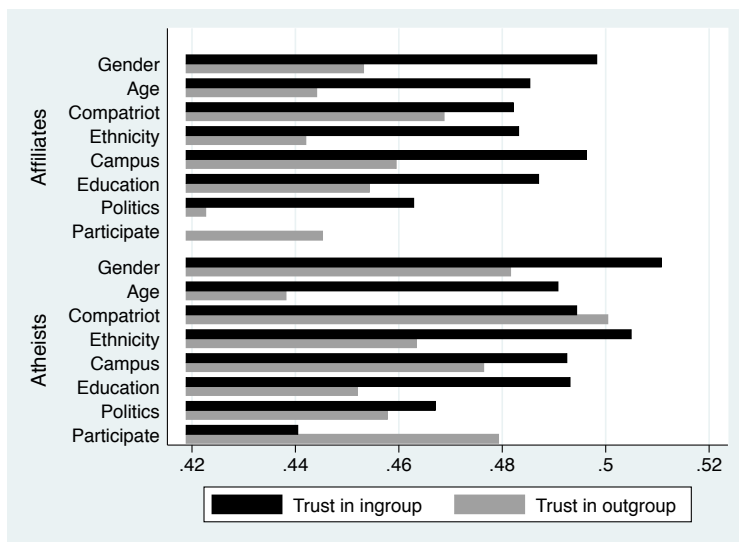


Figure 6: Group biases of religious affiliates and atheists across non-religious conditions. The figure shows the mean trust by senders conditional on receivers being of the same (ingroup) or a different (outgroup) type as them per category. Trust by religiously affiliated participants are grouped in the upper block, and trust by atheists are grouped in the lower block.

655 Figure 6 shows that both religious affiliates and atheists generally favour the in-
 656 group over the outgroup by trusting the ingroup more across different categories of
 657 social identity. Models 17-19 test ingroup biases on data concerning all non-religion
 658 conditions. As found above, WTDs increase with religiosity (model 17). For beliefs
 659 (model 18), we find a positive and significant *INGROUP* effect for senders overall,
 660 but no *RELI* interaction effect. For actions (model 19), we also find a positive and
 661 significant *INGROUP* effect for senders overall, but no *RELI* interaction effect.
 662 This result is robust to controls for respective conditions.¹²

663 **Result 4 (General prejudice).** *Religiosity is positively associated with the gen-*
 664 *eral willingness of senders to discriminate across a range of non-religious social*
 665 *identities. However, participants of different religiosity are as prone to ingroup*
 666 *favouritism.*

¹²We also controlled for each category with condition-identifying dummies interacted with *INGROUP* to test the influence of religiosity on the extent of ingroup biases, as an alternative to the regressions disaggregated by religious affiliation. The same result holds: the willingness to discriminate increases with religiosity, but ingroup biases are generally invariant to religiosity. Please see the regressions in online appendix OA5.

667 5. Discussion

668 Inter-religious interaction is an increasingly important social phenomenon. How-
669 ever, previous experimental work has yet to establish univocal evidence regarding
670 its direct, independent effects on trust and trustworthiness. To better understand
671 this issue we conducted a trust game experiment across three countries with partic-
672 ipants of different religious denominations and levels of religiosity. Our experiment
673 was designed to test four hypotheses for indirect effects of religiosity we derived
674 from these previous studies. Taken together these hypotheses propose that reli-
675 giosity affects economic behaviour indirectly by moderating (a) the way we treat
676 others of the same and different social groups and (b) the expectations and be-
677 haviour those we interact with develop towards us.

678 Our main findings can be summarised as follows. First, religiosity is a strong
679 social identifier (result 1) which is used as a basis of statistical discrimination by
680 senders of varying religiosities. Both religious and non-religious people believe that
681 more religious others are more trustworthy. Second, we found that religiosity en-
682 hances the ingroup favouritism people show to others who share the same faith
683 (result 2). Senders of all religions believe receivers of the same faith to be more
684 trustworthy and follow these beliefs with actions in step with their own degree of
685 religiosity. Third, we found a religious fellow feeling or affinity between religious
686 people across different faiths, i.e. irrespective of whether they share the same one
687 or not (result 3). This was expressed in the greater belief people with religious
688 affiliation have in the trustworthiness of others similarly affiliated. As before, in-
689 dividual religiosity amplifies this effect. This kind of religious affinity, however,
690 does not generate quite the same positive effect on actual behaviour. Fourth, while
691 we found that religiosity is associated with a willingness to discriminate across
692 non-religious categories, observed ingroup favouritism did not vary with religiosity.
693 Since the 1950s, Adorno *et al.* (1950) and Allport (1954) have postulated general
694 religious prejudice, but have since been met with scant reliable evidence.

695 In summary, we uncovered evidence that religion operates indirectly through
696 social identities and religious affiliation, which are used as a basis for discrimina-
697 tion in trust games. Religious identity is one dimension that tells decision makers
698 how they are connected to those with whom they interact. The nature and degree
699 of discrimination observed generally depended on the nature and degree of con-
700 nectedness between individuals. The behavioural patterns we observed across the
701 four main results showed that the closer people are the more they trust each other.
702 Religious ingroup effects on beliefs carry over strongly to actions, in contrast to
703 the weaker effect when religiosity was known but religious affiliation was unknown,
704 and when religious affiliation was known (but) to be of a different creed. These

705 effects increased with one's religiosity, which is an indicator of how rooted one is in
 706 a particular social group. We believe the diversity in our participant pool lends our
 707 results good domain validity. Our study is general, as opposed to creed-specific,
 708 also in its explanation for how religion affects behaviour.

709 In addition to the evidence relating to our hypotheses we generally found that
 710 people are willing to pay for the chance to discriminate, be it for statistical or
 711 taste motives. We designed an incentive-compatible measure of the willingness to
 712 discriminate which was shown to be significantly related to our other variables. We
 713 believe that our measure may be deployed in other social identity contexts to guide
 714 policy related to discrimination in labour markets and other specific areas.

715 To conclude, the social identities of people determine the nature and intensity
 716 of religious connectedness, and in turn trust and trustworthiness.

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APPENDIX

848

A1) Distribution of subject types in each condition across three locations and WTD, beliefs and actions across conditions and types by roles and locations

		Malaysia	China	UK	Total
Gender					
	Male	65	137	98	300
	Female	122	27	96	245
Age					
	<16	0	0	0	0
	16-20	119	110	105	334
	21-25	67	52	84	202
	26-30	1	2	4	7
	>30	0	0	1	1
Nationality					
	British	1	1	119	121
	Chinese	33	161	24	218
	Malaysian	96	1	5	102
	Other	57	1	46	104
Religion					
	Buddhist	61	25	15	101
	Christian	37	5	56	98
	Hindu	15	0	12	27
	Jew	0	0	7	7
	Muslim	26	0	3	29
	Other	6	0	1	7
	None	42	134	100	276
Religiosity					
	Low	41	87	103	231
	Medium	97	73	66	236
	High	39	2	22	63
Ethnicity					
	Black	15	0	6	21
	Chinese	106	162	32	300
	Indian	22	0	16	38
	Malay	11	0	0	11
	Middle Eastern	4	0	0	4
	White	1	2	115	118
	Other	28	0	25	53
Education					
	Arts	0	17	42	59
	Business	81	133	18	232
	Economics	9	7	29	45
	Engineering	26	2	50	78
	Science	16	2	22	40
	Social science	9	1	22	32
	Other	46	2	11	59
Politics					
	Left	157	87	126	370
	Right	29	77	67	173
Participation					
	Active	6	8	5	19
	Inactive	67	59	78	204
	Not a member	110	91	106	307

849

WTD	Malaysia		China		UK	
	Sender	Receiver	Sender	Receiver	Sender	Receiver
Gender	0.31	0.25	0.21	0.28	0.12	0.17
Age	0.31	0.22	0.23	0.26	0.18	0.17
Nationality	0.25	0.23	0.21	0.23	0.14	0.16
Religion	0.25	0.24	0.24	0.26	0.15	0.17
Religiosity	0.26	0.16	0.21	0.27	0.15	0.18
Ethnicity	0.30	0.26	0.23	0.29	0.13	0.14
Campus	0.30	0.24	0.23	0.29	0.14	0.16
Education	0.31	0.25	0.29	0.27	0.18	0.17
Politics	0.21	0.14	0.18	0.21	0.14	0.16
Participation	0.26	0.16	0.24	0.26	0.14	0.15
Birthday	0.25	0.18	0.17	0.21	0.11	0.14

Beliefs	Malaysia		China		UK		
	Sender	Receiver	Sender	Receiver	Sender	Receiver	
Baseline		0.46	0.44	0.44	0.47	0.36	0.39
Gender							
	Male	0.46	0.44	0.44	0.47	0.36	0.39
	Female	0.45	0.46	0.49	0.49	0.35	0.38
Age							
	<16	0.32	0.36	0.37	0.43	0.30	0.32
	16-20	0.46	0.46	0.40	0.49	0.35	0.38
	21-25	0.51	0.48	0.44	0.49	0.35	0.39
	26-30	0.37	0.41	0.38	0.43	0.34	0.35
	>30	0.32	0.32	0.41	0.38	0.34	0.32
Nationality							
	Same	0.46	0.44	0.44	0.47	0.36	0.39
	Different	0.45	0.46	0.48	0.51	0.35	0.37
Religion							
	Buddhist	0.38	0.43	0.37	0.42	0.34	0.35
	Christian	0.29	0.33	0.33	0.40	0.29	0.29
	Hindu	0.43	0.50	0.49	0.48	0.38	0.40
	Jew	0.40	0.42	0.45	0.45	0.41	0.42
	Muslim	0.35	0.36	0.36	0.37	0.34	0.35
	Other	0.33	0.34	0.33	0.38	0.31	0.31
	None	0.32	0.36	0.37	0.43	0.28	0.33
Religiosity							
	Low	0.34	0.38	0.34	0.40	0.29	0.34
	Medium	0.44	0.39	0.42	0.43	0.36	0.38
	High	0.41	0.41	0.48	0.47	0.41	0.41
Ethnicity							
	Black	0.38	0.38	0.33	0.41	0.32	0.34
	Chinese	0.39	0.38	0.36	0.43	0.35	0.33
	Indian	0.46	0.46	0.44	0.48	0.33	0.39
	Malay	0.34	0.36	0.33	0.40	0.31	0.33
	Middle East:	0.43	0.47	0.46	0.51	0.34	0.38
	White	0.39	0.41	0.37	0.40	0.33	0.34
	Other	0.34	0.34	0.31	0.38	0.31	0.33
Campus							
	Malaysia	0.49	0.51	0.39	0.46	0.34	0.35
	China	0.42	0.46	0.46	0.50	0.33	0.36
	UK	0.47	0.50	0.47	0.50	0.33	0.40
Education							
	Arts	0.42	0.44	0.44	0.47	0.31	0.34
	Business	0.44	0.42	0.38	0.43	0.32	0.34
	Economics	0.46	0.47	0.43	0.42	0.34	0.37
	Engineering	0.42	0.42	0.37	0.42	0.32	0.33
	Science	0.40	0.44	0.39	0.43	0.35	0.37
	Social science	0.44	0.46	0.44	0.49	0.30	0.35
	Other	0.37	0.35	0.33	0.40	0.32	0.34
Politics							
	Left	0.39	0.41	0.38	0.50	0.35	0.38
	Right	0.46	0.44	0.42	0.47	0.30	0.35
Participation							
	Active	0.45	0.46	0.50	0.55	0.42	0.45
	Inactive	0.43	0.41	0.38	0.42	0.34	0.36
	Not a member	0.39	0.39	0.38	0.42	0.30	0.33
Birthday							
	Odd	0.46	0.47	0.44	0.52	0.34	0.40
	Even	0.48	0.47	0.46	0.49	0.34	0.39

Actions	Campus Role	Malaysia Sender	Receiver	China Sender	Receiver	UK Sender	Receiver
Baseline							
Gender		0.48	0.32	0.49	0.45	0.44	0.31
	Male	0.53	0.34	0.51	0.46	0.41	0.30
	Female	0.49	0.39	0.49	0.47	0.43	0.31
Age							
	<16	0.41	0.32	0.43	0.45	0.39	0.30
	16-20	0.49	0.35	0.47	0.43	0.41	0.29
	21-25	0.54	0.35	0.51	0.42	0.45	0.28
	26-30	0.47	0.32	0.44	0.44	0.42	0.28
	>30	0.46	0.32	0.45	0.43	0.42	0.29
Nationality							
	Same	0.51	0.35	0.51	0.46	0.44	0.31
	Different	0.51	0.34	0.50	0.44	0.44	0.29
Religion							
	Buddhist	0.49	0.33	0.52	0.45	0.46	0.32
	Christian	0.51	0.33	0.51	0.44	0.46	0.32
	Hindu	0.48	0.32	0.42	0.43	0.43	0.30
	Jew	0.45	0.31	0.45	0.45	0.41	0.29
	Muslim	0.50	0.32	0.41	0.44	0.43	0.30
	Other	0.46	0.32	0.43	0.43	0.41	0.29
	None	0.47	0.32	0.47	0.43	0.43	0.30
Religiosity							
	Low	0.44	0.32	0.44	0.44	0.40	0.31
	Medium	0.51	0.33	0.49	0.42	0.43	0.30
	High	0.49	0.33	0.47	0.46	0.45	0.30
Ethnicity							
	Black	0.42	0.31	0.45	0.43	0.42	0.30
	Chinese	0.53	0.35	0.53	0.46	0.44	0.30
	Indian	0.47	0.32	0.45	0.41	0.43	0.30
	Malay	0.46	0.29	0.48	0.40	0.43	0.30
	Middle East:	0.45	0.34	0.45	0.41	0.42	0.29
	White	0.52	0.34	0.53	0.44	0.44	0.30
	Other	0.49	0.32	0.44	0.40	0.40	0.29
Campus							
	Malaysia	0.55	0.36	0.47	0.40	0.42	0.27
	China	0.48	0.32	0.50	0.46	0.41	0.27
	UK	0.52	0.32	0.51	0.46	0.44	0.29
Education							
	Arts	0.46	0.30	0.48	0.45	0.43	0.29
	Business	0.51	0.34	0.50	0.43	0.42	0.28
	Economics	0.48	0.36	0.51	0.44	0.43	0.28
	Engineering	0.50	0.31	0.45	0.44	0.44	0.30
	Science	0.47	0.33	0.42	0.44	0.42	0.30
	Social science	0.50	0.33	0.47	0.43	0.45	0.29
	Other	0.46	0.33	0.43	0.43	0.40	0.30
Politics							
	Left	0.50	0.31	0.46	0.43	0.43	0.29
	Right	0.47	0.35	0.47	0.44	0.38	0.28
Participation							
	Active	0.50	0.32	0.54	0.45	0.46	0.30
	Inactive	0.44	0.29	0.44	0.42	0.41	0.29
	Not a membe	0.46	0.32	0.44	0.47	0.39	0.29
Birthday							
	Odd	0.49	0.32	0.51	0.44	0.42	0.30
	Even	0.50	0.32	0.48	0.43	0.42	0.29

A2) Religiosity does not increase trust or trustworthiness

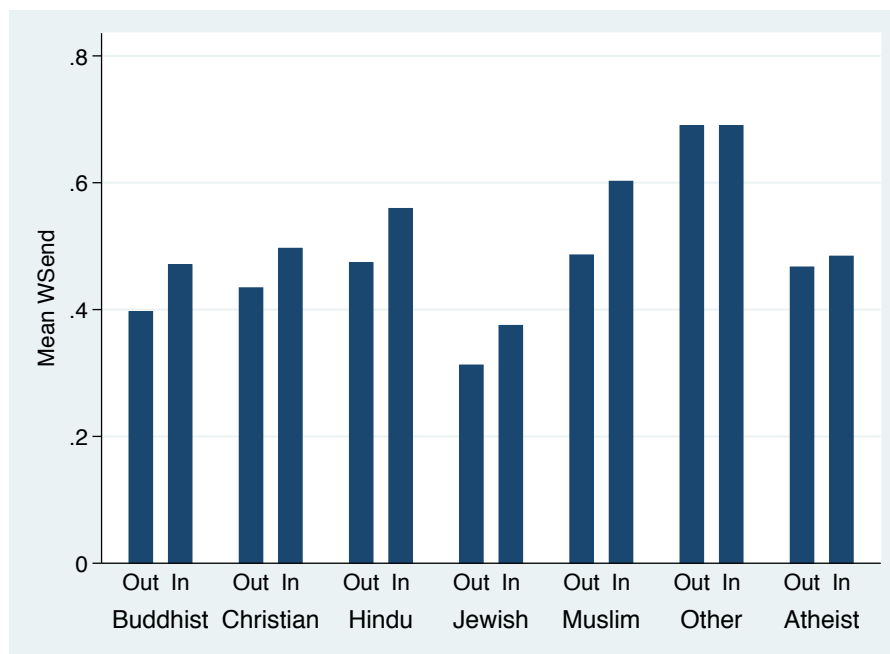
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	<i>WSEND</i>	<i>WRETURN</i>
	All	All
<i>BELIEF</i>	0.498 (0.344)	0.06 (0.545)
<i>STAKE</i>	-0.783*** (0.183)	-0.979*** (0.248)
<i>FEMALE</i>	0.229 (0.181)	-0.104 (0.318)
<i>RELI</i>	-0.011 (0.113)	-0.166 (0.192)
<i>CONSTANT</i>	0.007 (0.197)	-0.39 (0.309)
<i>LL</i>	-46.851	-308.114
<i>N</i>	516	502

Random effects regressions to test for religiosity effects. The data is from the religious affiliation condition. For senders, we use the dependent variable $WSEND = WTD * a_{type} + (1 - WTD) * a_{default}$, where WTD = stated willingness to discriminate, a_{type} = the conditional action chosen for a certain receiver type, and $a_{default}$ = the default action. For receivers, the dependent variable is $WRETURN$, and computed as such. Random effects are at the participant level. Significance levels are denoted by *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$. Standard errors are in parentheses.

A3) Ingroup favoritism is consistent across religious denominations

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	Buddhist	Christian	Hindu	Jew	Muslim	Other	None
Outgroup	0.40 (0.02)	0.43 (0.02)	0.47 (0.03)	0.31 (0.06)	0.49 (0.04)	0.69 (0.06)	0.47 (0.01)
Ingroup	0.47 (0.04)	0.50 (0.05)	0.56 (0.08)	0.38 (0.18)	0.60 (0.08)	0.69 (0.15)	0.48 (0.03)

Note: Standard errors are in parentheses.

A4) Table of main regression variables

Variable	Values	Description
<i>WTD</i>	0 to 1	Percentage spent on implementing action conditional on co-participant's type.
<i>BELIEF</i>	0 to 1	Sender's (receiver's) stated belief that receiver's (sender's) will return (send).
<i>WSEND</i>	0 to 1	$WTD * \text{conditional action} + (1 - WTD) * \text{default action}$.
<i>RISK</i>	0 or 1	0 for low risk game, 1 for high risk game.
<i>FEMALE</i>	0 or 1	0 if male, 1 if female.
<i>RELI</i>	-1.48 to 2.27	Participant's religiosity, mean centered average of items from religiosity inventory.
<i>RLEV</i>	0, 1 or 2	Co-participant's religiosity level, 0 if low, 1 if medium, 2 if high.
<i>INGROUP</i>	0 or 1	0 if co-participant is of a different type than the self, 1 if of the same type.
<i>AFFILIATE</i>	0 or 1	0 if participant or co-participant are atheists, 1 if both have a religion.

A5) Regressions for ingroup biases in non-religious categories with condition-specific ingroup dummies “IN[condition]”

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	<i>WTD</i>	<i>BELIEF</i>	<i>WSEND</i>
	All	All	All
<i>STAKE</i>	0.019*** (0.003)	-0.048*** (0.003)	-0.154*** (0.005)
<i>FEMALE</i>	0.017 (0.025)	-0.009 (0.021)	0.05 (0.035)
<i>RELI</i>	0.035** (0.016)	0.027** (0.013)	0 (0.022)
<i>INAGE</i>	0.007 (0.007)	0.051*** (0.007)	0.011 (0.011)
<i>INGENDER</i>	0.029*** (0.005)	0.009* (0.005)	-0.01 (0.008)
<i>INNATIONALITY</i>	-0.008 (0.007)	0.053*** (0.007)	0.012 (0.012)
<i>INETHNICITY</i>	0.017*** (0.004)	-0.005 (0.004)	0.003 (0.007)
<i>INCAMPUS</i>	0.015*** (0.006)	0.043*** (0.006)	0.008 (0.01)
<i>INEDUCATION</i>	0.050*** (0.004)	0.012*** (0.004)	0.001 (0.007)
<i>INPOLITICS</i>	-0.031*** (0.007)	0.013* (0.007)	-0.016 (0.011)
<i>INPARTICIPATION</i>	0.007 (0.006)	0.029*** (0.006)	-0.014 (0.01)
<i>INGROUP</i>		-0.003 (0.003)	0.025*** (0.006)
<i>INGROUP by RELI</i>		0.005 (0.004)	0.007 (0.007)
<i>BELIEF</i>			0.161*** (0.011)
<i>CONSTANT</i>	0.188*** (0.017)	0.398*** (0.014)	0.449*** (0.025)
<i>Overall r²</i>	0.016	0.02	0.06
<i>N</i>	22962	21770	21770

Random effects regressions to test for non-religious condition-specific ingroup effects.

The data is from the non-religious conditions on senders. We use the dependent variable $WSEND = WTD * a_{type} + (1 - WTD) * a_{default}$, where WTD = stated willingness to discriminate, a_{type} = the conditional action chosen for a certain receiver type, and $a_{default}$ = the default action. Random effects are at the participant level. Significance levels are denoted by *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$. Standard errors are in parentheses.