

Is Religiosity a Barrier to Organ Donations?

Examining the Role of Religiosity and the Salience of a Religious Context on Organ-Donation Decisions

INBAL HAREL, MARCUS MAYORGA, PAUL SLOVIC, AND TEHILA KOGUT

ABSTRACT The disparity between the number of patients awaiting organ transplantation and organ availability increases each year. One of the chief obstacles to organ donation is religiosity. We examine the role of religiosity and other related beliefs in organ-donation decisions among Christians (studies 1 and 3) and Jews (study 2). In all samples, we found a significant interaction between religiosity and the salience of a religious context, manipulated by the order of the questions, such that religiosity (and specifically, extrinsic religion) was significantly associated with lower support for organ donations—but only when religious attitudes were elicited first, not when support for organ donation, or questions about other beliefs (study 3) appeared first. We examine possible mechanisms underlying this effect and discuss theoretical and practical implications of this finding to increase support for organ donations in both personal and policy decisions.

The disparity between patients awaiting organ transplantation and organ availability grows each year.¹ One of the chief obstacles to organ donation (OD) is religion—as demonstrated in research of evidence-based peer-reviewed articles of over 45 years (Da Silva and Frontera 2015). Since all major Abrahamic religions support OD as a charitable act, the opposition of religious individuals to ODs is somewhat surprising, and it is important to understand why it occurs and in what circumstances. Building upon research on *religious priming* (e.g., Shariff et al. 2016) and *order effects* (e.g., Strack, Martin, and Schwarz 1988; Schumann et al. 2014)—which suggest that religiously relevant contextual cues are likely to trigger psychological processes that make one’s religious identity temporarily more prominent or relevant (Weaver and Agle 2002)—in the present research we hypothesized that the negative link between religiosity and support for OD occurs only when the religious context is salient at the time of the decision and is negligible when prospective donors make decisions about OD issues indepen-

dently of a religious context. Moreover, we expected other beliefs that are related to religiosity but not exclusive to religious people (such as the wish to maintain the integrity of the body after death or the fear that brain death is not a complete, final death) to be more stably related to diminished support for ODs—irrespective of how dominant those thoughts are at the time of the decision. We demonstrate these patterns in three studies, with samples of different types (students vs. Amazon Mechanical Turk [MTurk] workers) and different religions: Christians (studies 1 and 3) and Jews (study 2).

The present research contributes to the existing literature in several ways. First, it provides insights into a growing body of literature that suggests that religiosity significantly affects consumers’ attitudes, values, and behavior (e.g., Mathras et al. 2016; Hyodo and Bolton 2021). Specifically, we suggest that when examining the link between religiosity and consumers’ behavior, one must consider (besides individual differences in religiosity) the salience of a religious

Inbal Harel, Department of Education & Decision Making and Economic Psychology Center, Ben-Gurion University of the Negev, Beer-Sheva 84105, Israel. Marcus Mayorga, Decision Research, Springfield, OR, USA. Paul Slovic, Decision Research and University of Oregon, 1585 E 13th Ave, Eugene, OR 97403, USA. Tehila Kogut (corresponding author: kogut@bgu.ac.il), Faculty of Humanities and Social Sciences, Department of Education & Decision Making and Economic Psychology Center, Ben-Gurion University of the Negev, Beer-Sheva 84105, Israel. This research was supported by National Science Foundation grant no. 1559546 and Israel Science Foundation grant no. 1426/20.

1. The Health Resources and Services Administration, <https://www.organdonor.gov/learn/organ-donation-statistics>.

Issue Editors: Dipankar Chakravarti, Jian Ni, and Meng Zhu

Published online March 10, 2022.

Journal of the Association for Consumer Research, volume 7, number 2, April 2022. © 2022 Association for Consumer Research. All rights reserved. Published by The University of Chicago Press for the Association for Consumer Research. <https://doi.org/10.1086/718459>

context at the time of the behavior. This hypothesis is in line with recent work that highlights the interaction between religiosity and the salience of a religious context on behavior (e.g., Carpenter and Marshall 2009; Casidy et al. 2021). Second, the findings of past research on the association between religious beliefs and willingness to donate (WTD) organs has, to date, been mixed (e.g., Demir and Kumkale 2013 vs. Vetterli et al. 2015), and our study suggests a possible explanation for that inconsistency—namely, the salience of the religious context at the time of the decision. Interestingly, among nonreligious respondents, increasing the salience of religious ideas increases their willingness to commit to ODs. Finally, we suggest practical implications for boosting support for ODs, in personal decisions and in policy making.

THEORETICAL OVERVIEW

Research on prosocial behavior points to a modest but consistent link between prosocial inclinations and religiosity (e.g., Saroglou 2013). However, the prosociality of religious people may be dependent on situational factors and context. For example, religious people are less likely to help causes or targets that are not commensurate with their group's values and norms (e.g., Pichon and Saroglou 2009), or their help may be restricted to in-group recipients (e.g., Batson, Schoenrade, and Ventis 1993) or may be driven by the wish to create a positive impression (Galen 2012). Unlike other prosocial behaviors, when it comes to OD decisions, religious beliefs have been found to be associated with reduced WTD organs and a negative attitude toward ODs among practitioners of Christianity, Judaism, and Islam (e.g., Demir and Kumkale 2013). The most common reason cited by Christians for the refusal to commit to ODs was the belief that people should not intervene with God's will by giving someone else's organs to a dying person (Davis and Randhawa 2006; Morgan et al. 2008). This belief may involve various levels of *divine attributions*—namely, the belief that God will directly help those who deserve it (Jackson and Gray 2019). In the context of ODs, people who make strong divine attributions may expect God to help a good person who is in need of organ transplantation, while feeling good about their own decision not to actively support ODs in general. A second reason that Christians may object to ODs is the need for the body to remain intact after death, so that it may be resurrected in the end of days. This belief is not limited to religious people and may reflect the general discomfort or anxiety that people may have about OD (e.g., Robinson et al. 2014).

Among religious Jews, concerns over support for OD are usually related to the notion of *brain death*—specifically,

the possible difference between brain death and cardiopulmonary death (Bülow et al. 2008). Nonetheless, the fear that brain death is not final, irreversible death is present among nonreligious people as well (worldwide) and is one of the major barriers to ODs (e.g., Da Silva and Frontera 2015).

However, several studies demonstrate no significant association between religiosity and support for ODs (e.g., Stephenson et al. 2008; Vetterli et al. 2015) and found no significant correlation between religiosity and attitudes toward OD, nor with the willingness to sign a donor card or to donate the organs of a deceased close relative. The contradictory results regarding the association between religiosity and support for ODs may stem from people's tendency to interpret religious attitudes toward ODs in various ways—in some instances, due to ignorance of their religion's actual stance on ODs (Morgan et al. 2008). Similarly, religious beliefs are often personalized interpretations of general religious precepts (Newton 2011). Moreover, in some instances, religious objections to ODs may be nothing more than a cover for general unease, negative affect, or anxiety over ODs, or as a buffer to justify other initial resistance to the topic (Morgan et al. 2008; Robinson et al. 2014).

Another explanation for the above contradictory results may stem from the extent to which the religious context was salient to the participants responding to the OD questions in the various studies. Although religious attitudes are part of people's personal identities, people tend to hold several identities, and nonreligious identities are likely to be more central and significant than religious ones, in certain times and contexts (e.g., Marty 2003). However, religiously relevant contextual cues are likely to trigger psychological processes that make the religious identity temporarily more prominent, or relevant (Weaver and Agle 2002). Religious priming manipulations have become a common method in research, as it allows for causal conclusions. Such investigations suggest that reminders about God, or other ways of priming religious concepts, may activate relevant cognitions and behaviors (e.g., Randolph-Seng and Nielsen 2007; Laurin, Kay, and Fitzsimons 2012). In the context of prosocial behavior, results of a meta-analysis show that religious priming has a robust impact on prosocial measures (Shariff et al. 2016). Moreover, several studies have shown that when the religious context is salient, personal religious beliefs come to the fore and more strongly affect the attitudes and behaviors of individuals (e.g., Carpenter and Marshall 2009).

One way to increase the salience of religious thoughts may be to ask people about their religious beliefs immediately

before asking them about their attitudes and decisions (e.g., Schumann et al. 2014). Question-order manipulation of this sort, in a bid to increase the salience of a specific context in subsequent judgments and decisions, has been widely used in the literature. A key example is the *focusing illusion* phenomenon in people's evaluations of their life satisfaction (e.g., Strack et al. 1988; Kahneman et al. 2006)—according to which considering one's satisfaction from a specific life domain increases the salience and accessibility of information relevant to this domain, thereby affecting the subsequent judgment of one's overall life satisfaction.

In the context of religiosity and ODs, in some studies people were asked about their religious beliefs immediately before being asked if they were willing to commit to donating their organs after death (e.g., Robinson et al. 2014). While this manipulation may increase accessibility to thoughts about religion and about one's religious beliefs—thereby increasing the correlation between the two—it may also increase the tendency to use these beliefs to justify an objection to OD. Conversely, enhancing accessibility to thoughts about religion may also increase support for ODs among nonreligious people, by reminding them of their own values, which are likely to include saving lives (e.g., Mazar, Amir, and Ariely 2008).

Based on the literature discussed above, we surmised that when the religious context is salient (such as when people are asked about their religious attitudes immediately before being asked about their willingness to support OD), the correlation between their religiosity and their diminished WTD organs would be stronger, and that religious people's decisions would be more affected by, and conform with, their perceptions of religious attitudes toward ODs than when religious issues are not salient. Conversely, we expected nonreligious people to express greater support for OD when religious attitudes are made salient than when they are not salient, because of the greater accessibility induced thereby to their own moral values, including the important value of saving lives. In contrast, we expected specific, more concrete fears and beliefs that inhibit support for OD (such as questioning whether brain death is indeed final, or the wish to preserve the integrity of the body after death) to affect people's decisions about OD, irrespective of their external salience at the time of the decision. While religious beliefs may serve to justify people's objection to OD when salient, specific fears and beliefs are more ingrained, as they are triggered by the OD context itself and therefore less likely to be affected by external manipulations.

In keeping with this thinking, in the present study we used the order of the questions about religious beliefs (i.e., before—vs. after—questions about ODs) to manipulate the salience

of a religious context, while participants made decisions about OD issues. This allowed us to examine the role played by personal religious beliefs and by the salience of religiosity in OD decisions. We examined our hypothesis in three studies, with samples from different religions—Christians (studies 1 and 3) and Jews (study 2)—using the same experimental design.

STUDY 1

Method

We recruited 401 MTurk workers (57% male, mean age = 34.48, SD = 10.57) to participate in a short survey, for a nominal fee of \$0.50. The sample size ($N = 400$) was determined from a power analysis with G*Power software 3.1 for a regression analysis with three predictors (two main effects and an interaction effect), 95% power, and an expected effect size of $f^2 = .05$.

Participants were randomly assigned to one of two between-subject question-order conditions: religious beliefs first, and donation decisions first. In the religious beliefs first condition, participants first answered 10 items from the revised intrinsic/extrinsic religion orientation scale (Gorsuch and McPherson 1989)—each item rated on a five-degree scale. Eight items were from the intrinsic scale (e.g., “My whole approach to life is based on my religion”), while the two other items gauged actual religious behaviors (“I often pray to God” and “I often go to church”). Next, participants were asked to rate their agreement with four statements—two for each of the two beliefs that were found in previous research to be related to people's refusal to donate organs—namely, the wish to keep the body untouched for resurrection (two statements: “I believe it is important to maintain the integrity of the body after death” and “I believe resurrection will occur”; $\alpha = .60$ —hereafter “body integrity”) and their concerns over the difference between brain death and cardiopulmonary death (two statements: “A person who is brain dead is not alive”; and “I believe that a doctor may declare a person suffering from brain death as dead”; $\alpha = .82$ —hereafter, “brain death”). All four items were rated on a seven-degree scale.

Next, participants were presented with two OD decisions—adopted from Harel et al. (2017). In the first one, they were asked to rate their WTD the organs of a close relative, to save the life of someone waiting for a kidney transplant (on a seven-degree scale).

The second OD decision was a policy-related decision. Participants read that according to the existing policy in the United States, citizens are not registered as organ donors after death unless they expressly register as such. Participants were then told that studies consistently show that

the percentage of organ donors is significantly higher under an opt-out policy regime than in the opt-in one (e.g., Johnson and Goldstein 2003). Finally, participants were asked to choose between keeping the current opt-in policy or changing it to an opt-out policy.

In the donation decisions first condition, participants were first presented with the above two OD decisions and then completed the religious attitudes and beliefs questionnaire. On completing the questionnaire, participants in both conditions provided their demographics, including answers to two important questions: whether they are registered as organ donors after death (yes/no—hereafter “OD consent”) and how they would define their religious stance (ratings on a 4-point scale, ranging from “religious” to “secular”).

Results

The 10 items examining the participants’ religiosity were highly correlated (Cronbach’s alpha = .87), so we computed a “religiosity scale,” comprising the mean scores of the 10 items for each participant.

To examine the effect of religiosity and its salience (hereafter the “question order”) on the WTD the organs of a deceased relative, a hierarchical regression analysis was conducted on the WTD. The two main effects—religiosity and question order—were entered in step 1 of the model and the interaction between them in step 2. The model entered in step 1 was found to be significant: $F(2, 397) = 8.15$, $p < .001$, $r^2 = .04$. Only religiosity made a significant contribution to the model ($t = -4.03$, $\beta = -.20$, $p < .001$)—such that overall, it was related to lower WTD, while the effect of question order was not significant ($t = .33$, $\beta = .02$, $p = .74$). The second step of the model was also significant: $F(3, 396) = 8.46$, $p < .001$, $r^2 = .06$. Importantly, the interaction between religiosity and question order was highly significant ($t = -2.96$, $\beta = -.41$, $p = .003$). As illustrated in figure 1, when questions about religiosity appeared first, religiosity significantly predicted lower WTD: $F(1, 197) = 24.55$, $p < .001$, $r^2 = .11$. However, when WTD was assessed before mention of the religious context was made, no significant associations were found between religiosity and WTD of the organs of a deceased relative: $F(1, 199) = .48$, $p < .49$, $r^2 = .02$.² Similar results were also obtained in analysis with participants’ self-definition of their religiosity (see appendix, available online). An analysis of the different levels of religiosity show that the effect is significant for

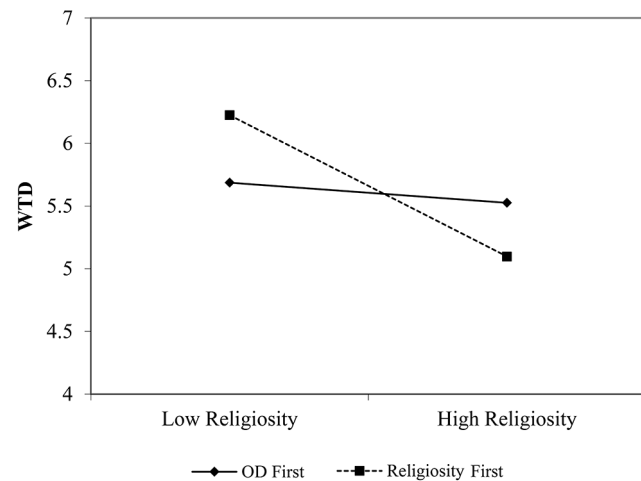


Figure 1. WTD the organs of a deceased relative as a function of religiosity and question order, in study 1. The interaction was plotted per Aiken and West’s (1991) recommendation: 1 SD (.98) above and 1 SD below the mean (2.33) of the religiosity scale, in each question-order condition.

both people who score lower on the religiosity scale and those who score higher on that scale in the other direction (see the appendix).

Next, we examined the role played by the two specific beliefs (body integrity and brain death) in predicting WTD, in the two question-order conditions. Two hierarchical regression analyses were conducted on WTD. The first regression was of body integrity and question order in step 1, and the interaction between them in step 2. The first step was significant: $F(2, 397) = 28.87$, $p < .001$, $r^2 = .13$ —only the role of body integrity significantly contributed to the model ($t = -7.60$, $\beta = -.36$, $p < .001$, while the effect of question order was not significant ($t = .30$, $\beta = .01$, $p = .76$). The second step of the model was significant: $F(3, 396) = 19.75$, $p < .001$, $r^2 = .13$, but the interaction in question was not ($t = 1.20$, $\beta = .13$, $p = .23$).

The second regression—involving brain death—revealed similar results. Step 1 was significant: $F(2, 397) = 8.49$, $p < .001$, $r^2 = .04$ —only brain death was significant ($t = 4.11$, $\beta = .20$, $p < .001$) but not question order ($t = -.10$, $\beta = -.01$, $p = .92$). Step 2 was also significant: $F(3, 396) = 6.26$, $p < .001$, $r^2 = .04$, but the interaction between brain death and question order was not ($t = 1.33$, $\beta = .23$, $p = .18$). Thus, it appears that beliefs in the case of both body integrity and brain death significantly affect WTD, irrespective of the question-order manipulation.

The results of a moderated-mediation analysis suggest that body integrity belief mediated the association between

2. Repeating the regression with participants’ OD consent revealed similar results in all studies and in all analyses in this article.

religiosity and WTD irrespective of the question order, while accepting brain death as irrevocable mediated the association between religiosity and WTD only in the religious-first condition and thus may partially explain the above order effect (see the appendix).

Analyses of participants' support for the transition to an opt-out policy revealed very similar results. Specifically, religiosity significantly predicted lower support for the transition to an opt-out policy only when religious questions appeared first. For the complete set of analyses, see the appendix.

The results of study 1 support the idea that religious people's objection to OD is more dominant and significant only when thoughts about religious issues are raised prior to the consideration of OD issues. The specific concerns regarding the integrity of the body and brain death, however, were significantly related to the two OD decisions, irrespective of the order manipulation. This suggests that OD decisions naturally prompt thoughts about such specific beliefs (that are not necessarily related to religious ones). Conversely, thoughts about religion per se are related to OD decisions only when they are made salient at that time. In the following study, we sought to replicate these results with a Jewish sample, while employing a similar method and procedure.

STUDY 2

Method

We recruited 295 Jewish Israeli undergraduate university students (69.6% female, mean age = 27.79, SD = 5.95) from a university online pool, to complete a short survey in exchange for entering a raffle, with five prizes of NIS 100 each (~USD25). The sample size was determined by power analysis using G*Power software 3.1, based on the effect size obtained in study 1 ($r^2 = .06$), with 95% power.

Participants were randomly assigned to one of the two question-order conditions: decisions first versus religious attitudes questionnaire first, as in study 1. To boost reliability, the religious questionnaire used was the Duke University Religion Index (DUREL; Koenig and Büssing 2010), which is a validated five-item measure of religiosity (Cronbach's alpha in the current study = .95). Participants rated their agreement with each item on a five-degree scale. Next, participants completed the four beliefs questions on the issues of preserving body integrity and brain death (see study 1). As in study 1, participants completed these two sections before, or after, they answered the two OD decisions questions (WTD the organ of a deceased family member, and support for the transition to an opt-out policy in Israel), according to condition.

Results

As in study 1, a hierarchical regression analysis was conducted on WTD. Step 1 of the model, which included question order and religiosity, was significant: $F(2, 292) = 5.36$, $p = .005$, $r^2 = .03$: Only religiosity made a significant contribution to model ($t = -3.27$, $\beta = -.19$, $p = .001$)—such that overall, religiosity correlated with a lower WTD, while the effect of question order was not significant ($t = -.20$, $\beta = -.01$, $p = .84$). The second step of the model was also significant: $F(3, 291) = 5.08$, $p = .002$, $r^2 = .05$. Once again, the interaction between religiosity and question order was significant ($t = -2.10$, $\beta = -.27$, $p = .037$). As illustrated in figure 2, when questions about religiosity appeared first, religiosity significantly predicted lower WTD: $F(1, 141) = 13.83$, $p < .001$, $r^2 = .09$. However, when WTD was assessed before the religious context was mentioned, no significant associations were found between religiosity and WTD the organs of a deceased relative, $F(1, 150) = .78$, $p = .38$, $r^2 = .005$. Similar results were also obtained in an analysis with participants' self-definition of their religiosity (see the appendix). An analysis of the different levels of religiosity shows that in this sample, the effect was driven by the more religious participants (see the appendix).

To examine the role of the two beliefs in predicting WTD under the two orders, two hierarchical regression analyses were conducted: the first step of the regression with body integrity ($\alpha = .69$) revealed significant results: $F(2, 292) = 23.10$, $p < .001$, $r^2 = .14$ —only the role of body integrity

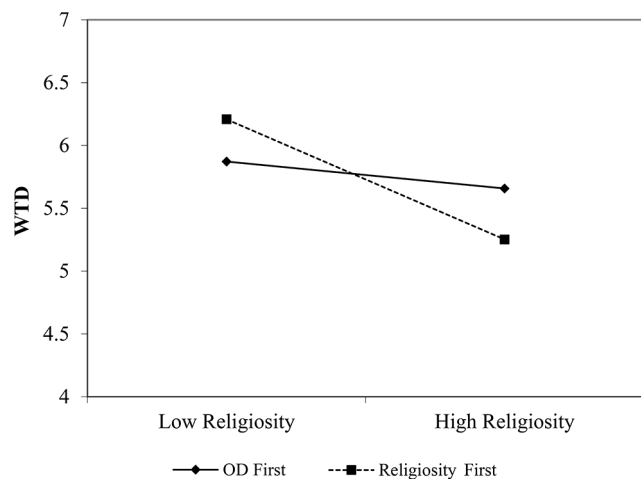


Figure 2. WTD the organs of a deceased relative, as a function of religiosity and question order—study 2. The interaction was plotted per Aiken and West's (1991) recommendation: 1 SD (1.41) above and 1 SD below the mean (2.57) of the religiosity scale in each question-order condition.

significantly contributed to the model ($t = -6.80$, $\beta = -.37$, $p < .001$, while the effect of question order was not significant ($t = .23$, $\beta = .01$, $p = .82$). The second step of the model was significant: $F(3, 291) = 15.64$, $p < .001$, $r^2 = .14$, but the interaction in question was not ($t = -.87$, $\beta = -.11$, $p = .38$). Repeating the regression, with participants' and all interactions between that variable and the other predictors, revealed similar results.

The regression with brain death ($\alpha = .80$) revealed significant results for step 1: $F(2, 292) = 31.02$, $p < .001$, $r^2 = .17$, to which brain death made a significant contribution ($t = 7.88$, $\beta = .42$, $p < .001$) but not question order ($t = -.27$, $\beta = -.01$, $p = .79$). The second step was also significant: $F(3, 291) = 22.14$, $p < .001$, $r^2 = .19$: The interaction between brain death and question order approached significance ($t = 1.95$, $\beta = .38$, $p = .053$), but regression analysis conducted separately on each order condition revealed that brain death significantly predicts WTD in both order conditions (religious questions first: $F(1, 141) = 55.21$, $p < .001$, $r^2 = .28$, and OD first—step 1, $F(1, 150) = 12.73$, $p < .001$, $r^2 = .08$), although in the religious questions first condition it played a greater role. Results of a moderated mediation analysis revealed that both beliefs mediate the effect of question order on WTD in both orders but cannot account for the interaction found between religiosity and order (see the appendix). Results for participants' support for the transition to an opt-out policy were very similar (see the appendix).

The results of the second study replicated the pattern found in study 1 but among Jewish participants. Once again, religiosity reduced WTD and support for a transition to an opt-out policy—but only when it was made salient to the participants immediately before their decisions, not when the decision was made first without the religious context. The specific beliefs regarding maintaining body integrity and brain death were significantly related to both OD decisions but less affected by question order and predicted support for ODs—even when they were not salient at the time of the decision.

One limitation of studies 1 and 2 is that religious beliefs were manipulated along with the specific beliefs (before or after the decisions). Accordingly, in study 3, we included three between-subject conditions: Decision first, religious questions first, and questions about specific beliefs first (“beliefs first”). In addition, in study 3, we included all 14 items of the revised intrinsic/extrinsic religion orientation scale (Gorsuch and McPherson, 1989), to examine the specific contribution of *intrinsic* and *extrinsic* religiosity to the

understanding of the interaction between religiosity and question order in predicting OD decisions. Finally, in this study we sought to explore possible mechanisms that may derive the order effect observed in the previous studies. This included possible reasons for the decision and individual differences in divine attributions and in perceptions of human intervention in God's plans—concepts that we discussed earlier but did not examine in the previous studies.

STUDY 3

Method

We recruited 270 MTurk workers (53% male, mean age = 40.77, SD = 11.85) to participate in a survey for nominal fee of \$0.60. They were recruited from a pool of 400, who had answered a short survey of individual differences a week before. We decided to include all participants who would complete the second part within 48 hours (which served as our stopping rule). Sensitivity power analysis indicated that given $N = 270$, $\alpha = .05$ and power of .80, statistical significance would be detected with a small effect size ($f^2 = 0.05$, critical $F = 2.25$).

At time 1—a week before the study—we examined individual differences in divine attributions, using Jackson and Gray's (2019) divine attribution scale followed by four items that directly assess participants' thoughts about human intervention in God's plans (see the appendix).

At time 2, participants were randomly assigned to one of three between-subjects question-order conditions (decision first, religious first, and beliefs first). They were asked about their WTD the organs of a deceased relative (as in studies 1 and 2) before or after completing the revised intrinsic/extrinsic religion orientation scale (Gorsuch and McPherson 1989) in the religious-first condition—or in the beliefs-first condition, the four specific beliefs questions (about body integrity and brain death). Immediately after the decision, participants in all conditions were asked to write their main reason for the decision, in an open-ended fashion. They were then asked to rate the extent to which each of five considerations figured in their decision—namely, their religious beliefs, the importance of maintaining the body's integrity after death, thoughts about whether brain death is irrevocable (final) death, the belief that people must not intervene in the world's justice, and the desire to do something good. Next, participants completed the other parts of the questionnaire (religious beliefs or the specific beliefs, according to the missing section in each condition).

Results

Religiosity and Question Order. We computed a “religiosity scale” made up of the mean scores of the 14 items for each participant ($\alpha = .89$). To examine the effect of religiosity and question order on their WTD the organs of a deceased relative, a hierarchical regression analysis was conducted on the WTD. Three main effects were entered at step 1: Religiosity and two dummy variables—*dummy-religious* (i.e., the religious questions first vs. the two other conditions), and *dummy-beliefs* (the beliefs questions first vs. the two other conditions). The two-way interactions were entered at step 2. The model entered in step 1 was significant: $F(2, 266) = 2.75, p = .04, r^2 = .03$: Only religiosity made a significant contribution to model ($t = -2.69, \beta = -.16, p = .008$)—such that overall, religiosity was linked to lower WTD. The second step of the model was also significant: $F(5, 264) = 2.72, p = .021, r^2 = .05$. Only the interaction between the dummy-religious and religiosity was significant ($t = -2.03, \beta = -.41, p = .04$). As illustrated in figure 3, when questions about religiosity appeared first, religiosity significantly predicted lower WTD $F(1, 87) = 15.81, p < .001, r^2 = .15$. However, in the two other order conditions, no significant associations were found between religiosity and WTD: $F(1, 87) = .17, p = .67$ in the decision-first condition, and $F(1, 90) = .45, p = .50$ in the beliefs-first condition.

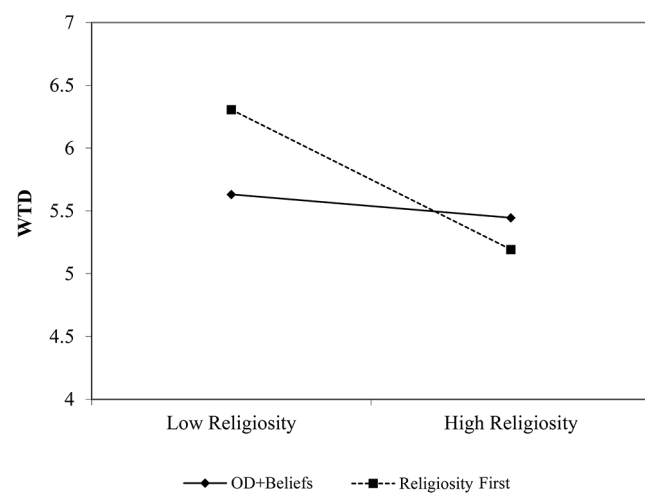


Figure 3. WTD the organs of a deceased relative as a function of religiosity and question order (dummy religious)—study 3. The interaction was plotted per Aiken and West’s (1991) recommendation: 1 SD (1.33) above and 1 SD below the mean (3.45) of the religiosity scale in each question-order condition.

Intrinsic and Extrinsic Religiosity. Looking at the religiosity subscales, we found that the interaction between the religious scale and question order was driven mainly by extrinsic religious beliefs—such as the use of religion for relief, comfort, and protection (see the appendix). Results of a moderated mediation analysis suggest that body integrity belief mediated the association between religiosity and WTD, irrespective of the question-order manipulation, while the fear that brain death is not true death mediated the association between religiosity and WTD only in the religious-first condition, which thus (as in study 1) may explain the observed questions’ order effect.

Reasons for the Decision. Coding participants’ explanations of the main reason for their donation decision revealed no meaningful results (see the appendix). An analysis of participants’ ratings of the five specific reasons for their decision appears in the appendix; none of the reasons significantly explained the order effect in question. Specifically, results of a moderated mediation analysis revealed that both body integrity and the reluctance to intervene with world justice mediated the association between religiosity and WTD in both question-order conditions.

Analyses of individual differences in divine attributions (Jackson and Gray 2019) and in thoughts about human intervention in God’s plans revealed that only the later may partially explain the interaction between religiosity and question order in predicting the WTD (see the appendix).

The Body Integrity Belief and Question Order. We next examined the role played by beliefs in predicting WTD in the various question-order conditions. A hierarchical regression analysis was conducted of WTD—with the body-integrity belief and the two dummy variables entered in step 1, and the two-way interactions (between each dummy variable and the body-integrity belief) in step 2. The model entered in step 1 was significant: $F(2, 266) = 8.82, p < .001, r^2 = .09$: only the body-integrity belief made a significant contribution to model ($t = -5.04, \beta = -.29, p < .001$)—such that overall, greater belief was related to lower WTD. The second step of the model was also significant: $F(5, 264) = 6.06, p < .001, r^2 = .10$, but none of the predictors significantly contributed to the model. Specifically, the interaction between the belief-dummy and the body integrity belief was not significant ($p = .18$). A regression with brain death beliefs (as opposed to those of body integrity) did not yield significant results.

The results of study 3 replicated those of the previous studies by showing that religious beliefs reduce the WTD

organs after death only when the religious context is salient. Moreover, we found that this effect held true when religious beliefs were manipulated independently of questions about the body-integrity belief and the concerns over brain death. Importantly, these specific beliefs were related to the WTD organs irrespective of their salience at the time of the decision. Interestingly, we found that only the extrinsic religious scale (but not the intrinsic one) significantly interacted with question order in predicting WTD. This finding may help in understanding the mechanism behind this interaction. Extrinsic religious orientation was found to be related to people's tendency to conform to social norms, and to the use of religious beliefs to serve their own goals—such an increased sense of security and self-justification (Whitley and Kite 2009). Reminding people of their religious beliefs before OD decisions may make them more likely to make decisions in accordance with those beliefs and to avoid conflicts (in a bid to boost their sense of security and comfort), which may involve refusing to donate organs.

Our investigations into other mechanisms that may explain the interaction in question revealed some evidence that the concerns over the finality of brain death and over interfering with God's justice partially mediate this interaction. However, while other variables (such as the body integrity belief) mediate the link between religiosity and WTD organs, they do not explain the unique interaction between the salience of the religious context and religiosity.

GENERAL DISCUSSION

Research on the association between religiosity and attitudes toward organ donations has, to date, been mixed (e.g., Demir and Kumkale 2013 vs. Vetterli et al. 2015). The present study offers several explanations for this inconsistency. First, we show that this association is largely dependent on the salience of the religious context at the time of the decision. Second, we found that only extrinsic religious attitudes, and not intrinsic ones, predicted lower support for ODs. Finally, we show that religious salience may affect religious and secular people in opposite ways, which may have mitigated the link between religiosity and WTD organs in previous studies.

However, beyond the salience of the religious context, the results of our studies—in both the Christian and Jewish samples—support an overall negative association between religiosity and attitudes toward ODs. Religious people were less willing to donate the organs of a deceased family member and less willing to support the transition to an opt-out policy. Our findings also replicate previous findings regard-

ing people's belief in the need to preserve the body's integrity (Davis and Randhawa 2006); their belief that brain death is not a true, final death (Lewis, Varelas, and Greer 2016); and their belief that people must not interfere with God's plans (Davis and Randhawa 2006; Morgan et al. 2008), as obstacles to supporting ODs (Da Silva and Frontera 2015). These beliefs appear to be more entrenched in the context of ODs and therefore affect such decisions, irrespective of external manipulations to increase their salience.

Most importantly, our investigation into the role of religiosity in OD decisions revealed innovative findings to the effect that religious people are significantly less willing to donate organs, or to support a transition to an opt-out policy—but only when they had been asked about their religious attitudes immediately before the questions about OD issues. This finding is in line with research that found that when studying the role of religiosity in people's decisions, it is important to consider the combined effect of individual differences in religiosity, and the salience of the religious context at the time of the decision (e.g., Carpenter and Marshall 2009; Casidy et al. 2021).

Previous research posits that religious people's prosociality may be driven by the desire to create a positive impression (Galen 2012); this becomes more likely when the prosocial action is consistent with the respondent's religious beliefs and the particular conventions of the religious society in question (Pichon and Saroglou 2009). Being asked about one's religious beliefs before being asked if one is willing to donate organs appears to highlight possible contradictions and discrepancies between one's religious beliefs and conventions, and the desire to behave prosocially and to potentially save lives. Being asked about one's WTD organs immediately after being asked about one's incidental religious beliefs appears to heighten religious people's desire to appear as though they are doing the right thing and to cause them to adhere to the conventions of religious society that apparently influences their decisions, further decreasing their support for ODs. Similarly, the salience of the religious context may have served as a cue for being watched, which has been found to heighten reputational concerns in people's behavior (Bateson, Nettle, and Roberts 2006). The finding that the extrinsic, rather than intrinsic religiosity orientation was at the core of the interaction between question order and religiosity supports this notion; people who score highly in extrinsic religious orientation tend to conform to social norms and demands and are often prone to skew their religious beliefs to suit their own goals, or to gain sense of security and comfort, or for self-justification (Whitley and Kite 2009).

The tendency of secular people to be more supportive of OD when they made their decision immediately after questions about religiosity is also an important phenomenon—and in line with previous research, which found that enhancing the salience of religious ideas and ethics increase moral behavior in religious and nonreligious individuals alike, by heightening attention and accessibility to their own moral standards (e.g., Bazerman and Sezer 2016). Secular people who were asked about their religious beliefs apparently became more aware of their own standards, including the importance of saving lives through ODs (Mazar et al. 2008).

In the present research, we made an initial attempt to examine the mechanisms that may underpin this effect. We found that divine attitudes, and the belief in the need to maintain the integrity of the body after death, mediated the overall association between religiosity and WTD. We also found initial evidence that the concern that brain death is not true, irrevocable death mediates the interaction between religious salience and religiosity. In both Christian samples (studies 1 and 3) this belief mediated the interaction between question order and religiosity only in the religious-first condition, not when religious beliefs were assessed after the OD decision. In addition, thoughts about human interference with God's plans (study 3) reduced WTD only when religiosity was salient, and not when the OD decision featured first. Nonetheless, religiosity remained significant in this analysis, suggesting that thoughts about human interference with God's plans may only partially explain the question-order effect observed in our studies. Future research is needed to further examine the mechanisms that may underpin this effect, since the priming manipulation may have affected identities, emotions, motivations, and cognitive orientations (e.g., Karataş and Gürhan-Canlı 2020). For example, religiosity tends to correlate with concerns over purity (e.g., Van Tongeren et al. 2021). Thus, triggering religious identities may highlight related kinds of moral emotions (such as disgust, in this case) that are associated with purity concerns over so-called body-envelope violations. These kinds of violations appear to be more disturbing when disgust is more strongly activated (e.g., Tracy, Steckler, and Heltzel 2019). Another possible mechanism may spring from the *moral credential effect* (e.g., Monin and Miller 2001; Sachdeva, Ilic, and Medin 2009)—namely, that religious priming may provide moral credentials for religious people, thereby reducing their feelings of obligation to prove their merit in terms of OD intentions. Conversely, the same priming may be a moral threat to secular people (admitting that one is not religious

may raise doubts about one's virtuousness), thereby enhancing their need to prove their prosociality by supporting OD.

While the interaction between religiosity and the salience of a religious context was significant in all our studies, it is important to note that our samples did not include highly religious people (the average of religiosity, 2.33 in study 1 and 2.57 in study 2, on a 5-point response scale; and 3.35 in study 3, on a 7-point scale). Thus, the question remains is whether the interaction we observed would replicate among highly religious individuals. We tried to address this question in our analysis of the various levels of the religiosity scale. In the Christian sample, we found that the effect of question order on WTD was significant among the more religious participants (SD above the mean) and not significant among the more secular participants (SD below the mean). In the Jewish sample, the effect was significant only among the more religious participants (SD above the mean). Interestingly, participants in the middle of the scale were less affected by the question-order effect. Possibly for those people, both religious restrictions and the wish to save lives were triggered by the religious priming manipulation, leading to a compromised decision. Although the analysis encompassed various religious levels, it remains unclear how the salience of the religious context might affect highly religious people. There is evidence that individuals with a stronger, more prominent religious identity (whose religious identity is central and significantly more dominant than their other identities) behave in ways that are consistent with their religious attitudes even in the absence of religiously-relevant contextual cues (Weaver and Agle 2002). Thus, future research is needed to examine the effect of the salience of a religious context among highly religious individuals.

Finally, besides these theoretical contributions, our study has practical implications for drumming up support for ODs—both in private decisions of families who are asked if they are willing to donate the organs of a close deceased relative and in policy making. When appealing to families to donate the organs of their loved ones, we suggest that the medical staff take into account the family's religious orientation. Specifically, it would be better to avoid a discussion about the family's religious attitudes—especially when the family appears to be religious. This idea is consistent with the concept of *culture-sensitive health communication* (Betsch et al. 2016), which underscores the importance of the congruence between recipients' cultural background and health messages, when seeking to improve medical decision making. With regard to secular populations, our findings suggest that the salience of a religious context in fact increases their WTD

organs, possibly because it heightens their attention and accessibility to their own moral standards. These findings highlight the importance of emphasizing life-saving values when discussing OD issues (e.g., Harel et al. 2017). This proposition is also in line with a recent field experiment (Robitaille et al. 2021) that demonstrated that simple, low-cost interventions have the potential to increase organ donor registrations.

REFERENCES

- Aiken, Leona S., and Stephen G. West (1991), *Multiple Regression: Testing and Interpreting Interactions*, London: Sage.
- Batson, Melissa, Daniel Nettle, and Gilbert Roberts (2006), "Cues of Being Watched Enhance Cooperation in a Real-World Setting," *Biology Letters*, 2 (3), 412–14.
- Batson, Charles D., Patricia Schoenrade, and W. Larry Ventis (1993), *Religion and the Individual: A Social-Psychological Perspective*, Oxford: Oxford University Press.
- Bazerman, Max H., and Ovuł Sezer (2016), "Bounded Awareness: Implications for Ethical Decision Making," *Organizational Behavior and Human Decision Processes*, 136, 95–105.
- Betsch, Cornelia, Robert Böhm, Collins O. Airhihenbuwa, Robb Butler, Gretchen B. Chapman, Niels Haase, Benedikt Herrmann, Tasuku Igarashi, Shinobu Kitayama, Lars Korn, Ülla-Karin Nurm, Bernd Rohmann, Alexander J. Rothman, Sharon Shavitt, John A. Updegraff, and Ayse K. Uskul (2016), "Improving Medical Decision Making and Health Promotion through Culture-Sensitive Health Communication: An Agenda for Science and Practice," *Medical Decision Making*, 36 (7), 811–33.
- Bülow, Hans-Henrik, Charles L. Sprung, Konrad Reinhart, Shirish Prayag, Bin Du, Apostolos Armaganidis, Fekri Abroug, and Mitchell M. Levy (2008), "The World's Major Religions' Points of View on End-of-Life Decisions in the Intensive Care Unit," *Intensive Care Medicine*, 34 (3), 423–30.
- Carpenter, Thomas P., and Margaret A. Marshall (2009), "An Examination of Religious Priming and Intrinsic Religious Motivation in the Moral Hypocrisy Paradigm," *Journal for the Scientific Study of Religion*, 48 (2), 386–93.
- Casidy, Riza, Adam Duhachek, Vishal Singh, and Ali Tamaddoni (2021), "Religious Belief, Religious Priming, and Negative Word of Mouth," *Journal of Marketing Research*, 58 (4), 762–81.
- Da Silva, Ivan Rocha Ferreira, and Jennifer A. Frontera (2015), "Worldwide Barriers to Organ Donation," *JAMA Neurology*, 72 (1), 112–18.
- Davis, Cynthia, and Gurch Randhawa (2006), "The Influence of Religion on Organ Donation and Transplantation Among the Black Caribbean and Black African Population: A Pilot Study in the United Kingdom," *Ethnicity and Disease*, 16 (1), 281–85.
- Demir, Başar, and G. Tarcan Kumkale (2013). "Individual Differences in Willingness to Become an Organ Donor: A Decision Tree Approach to Reasoned Action," *Personality and Individual Differences*, 55 (1), 63–69.
- Galen, Luke W. (2012), "Does Religious Belief Promote Prosociality? A Critical Examination," *Psychological Bulletin*, 138 (5), 876–906.
- Gorsuch, Richard L., and Susan E. McPherson (1989), "Intrinsic/Extrinsic Measurement: I/E-Revised and Single-Item Scales," *Journal for the Scientific Study of Religion*, 28 (3), 348–54.
- Harel, Inbal, Tehila Kogut, Meir Pinchas, and Paul Slovic (2017), "Effect of Media Presentations on Willingness to Commit to Organ Donation," *PNAS*, 114 (20), 5159–64.
- Hyodo, Jaime D., and Lisa E. Bolton (2021), "How Does Religion Affect Consumer Response to Failure and Recovery by Firms?" *Journal of Consumer Research*, 47 (5), 807–828.
- Jackson, Joshua Conrad, and Kurt Gray (2019), "When a Good God Makes Bad People: Testing a Theory of Religion and Immorality," *Journal of Personality and Social Psychology*, 117 (6), 1203–17.
- Johnson, Eric J., and Daniel Goldstein (2003), "Do Defaults Save Lives?" *Science*, 302 (5649), 1338–39.
- Kahneman, Daniel, Alan B. Krueger, David Schkade, Norbert Schwarz, and Arthur A. Stone (2006), "Would You Be Happier if You Were Richer? A Focusing Illusion," *Science*, 312 (5782), 1908–10.
- Karataş, Mustafa, and Zeynep Gürhan-Canli (2020), "A Construal Level Account of the Impact of Religion and God on Prosociality," *Personality and Social Psychology Bulletin*, 46 (7), 1107–120.
- Koenig, Harold G., and Arndt Büssing (2010), "The Duke University Religion Index (DUREL): A Five-Item Measure for Use in Epidemiological Studies," *Religions*, 1 (1), 78–85.
- Laurin, Kristin, Aaron C. Kay, and Gráinne M. Fitzsimons (2012), "Divergent Effects of Activating Thoughts of God on Self-Regulation," *Journal of Personality and Social Psychology*, 102 (1), 4–21.
- Lewis, Ariane, Panayiotis Varelas, and Daivd Greer (2016), "Prolonging Support after Brain Death: When Families Ask for More," *Neurocritical Care*, 24 (3), 481–87.
- Marty, Martin E. (2003), "Non-religion, Religion, and Spirituality: Competing for Business," in *Business, Religion, and Spirituality: A New Synthesis*, ed. Oliver F. Williams, Notre Dame, IN: University of Notre Dame Press, 31–52.
- Mathras, Danielle, Adam Cohen, Naomi Mandel, and David Glen Mick (2016), "The Effects of Religion on Consumer Behavior: A Conceptual Framework and Research Agenda," *Journal of Consumer Psychology*, 26 (2), 298–311.
- Mazar, Nina, On Amir, and Dan Ariely (2008), "The Dishonesty of Honest People: A Theory of Self-Concept Maintenance," *Journal of Marketing Research*, 45 (6), 633–44.
- Monin, Benoît, and Dale T. Miller (2001), "Moral Credentials and the Expression of Prejudice," *Journal of Personality and Social Psychology*, 81 (1), 33–43.
- Morgan, Susan E., Tyler R. Harrison, Walid A. Affif, Shawn D. Long, and Michael T. Stephenson (2008), "In Their Own Words: The Reasons Why People Will (Not) Sign an Organ Donor Card," *Health Communication*, 23 (1), 23–33.
- Newton, Joshua D. (2011), "How Does the General Public View Posthumous Organ Donation? A Meta-Synthesis of the Qualitative Literature," *BMC Public Health*, 11 (1), 791.
- Pichon, Isabelle, and Vassilis Saroglou (2009), "Religion and Helping: Impact of Target Thinking Styles and Just-World Beliefs," *Archive for the Psychology of Religion*, 31 (2), 215–36.
- Randolph-Seng, Brandon, and Michael E. Nielsen (2007), "Honesty: One Effect of Primed Religious Representations," *International Journal for the Psychology of Religion*, 17 (4), 303–15.
- Robinson, Dana H. Z., Susan M. Gerbensky Klammer, Jennie P. Perryman, Nancy J. Thompson, and Kimberly R. Jacob Arriola (2014), "Understanding African American's Religious Beliefs and Organ Donation Intentions," *Journal of Religion and Health*, 53 (6), 1857–72.

- Robitaille, Nicole, Nina Mazar, Claire I. Tsai, Avery M. Haviv, and Elizabeth Hardy (2021), "Increasing Organ Donor Registrations with Behavioral Interventions: A Large-Scale Field Experiment," *Journal of Marketing*, 85 (3), 168–83.
- Sachdeva, Sonya, Rumen Iliev, and Douglas L. Medi (2009), "Sinning Saints and Sainly Sinners: The Paradox of Moral Self-Regulation," *Psychological Science*, 20 (4), 523–28.
- Saroglou, Vassilis (2013), "Religion, Spirituality, and Altruism," in *APA Handbook of Psychology, Religion, and Spirituality*, Vol. 1: *Context, Theory, and Research*, Washington, DC: American Psychological Association, 439–57.
- Schumann, Karina, Ian McGregor, Kyle A. Nash, and Michael Ross (2014), "Religious Magnanimity: Reminding People of Their Religious Belief System Reduces Hostility after Threat," *Journal of Personality and Social Psychology*, 107 (3), 432–53.
- Shariff, Azim F., Aiyana K. Willard, Teresa Andersen, and Ara Norenzayan (2016), "Religious Priming: A Meta-Analysis with a Focus on Pro-sociality," *Personality and Social Psychology Review*, 20 (1), 27–48.
- Stephenson, Michael T., Susan E. Morgan, Samaria D. Roberts-Perez, Tyler Harrison, Walid Afifi, and Shawn D. Long (2008), "The Role of Religiosity, Religious Norms, Subjective Norms, and Bodily Integrity in Singing an Organ Donor Card," *Health Communication*, 23 (5), 436–47.
- Strack, Fritz, Leonard L. Martin, and Norbert Schwarz (1988), "Priming and Communication: Social Determinants of Information Use in Judgments of Life Satisfaction," *European Journal of Social Psychology*, 18 (5), 429–42.
- Tracy, Jessica L., Conor M. Steckler, and Gordon Heltzel (2019), "The Physiological Basis of Psychological Disgust and Moral Judgments," *Journal of Personality and Social Psychology*, 116 (1), 15–32.
- Van Tongeren, Daryl R., Nathan C. DeWall, Zhansheng Chen, Chris G. Sibley, and Joseph Bulbulia (2021), "Religious Residue: Cross-Cultural Evidence That Religious Psychology and Behavior Persist Following Deidentification," *Journal of Personality and Social Psychology*, 120 (2), 484–503.
- Vetterli, D. C. M., Sebastiano A. G. Lava, Stefan Essig, Gilgor Milosevic, Gian Cajöri, D. E. Uehlinger, and Matthias B. Moor (2015), "Risk Behavior and Reciprocity of Organ Donation Attitudes in Young Men," *Transplantation Proceedings*, 47 (6), 1560–66.
- Weaver, Gary R., and Bradley R. Agle (2002), "Religiosity and Ethical Behavior in Organizations: A Symbolic Interactionist Perspective," *Academy of Management Review*, 27 (1), 77–97.
- Whitley, Bernard E., and Mary E. Kite (2009), *The Psychology of Prejudice and Discrimination*, 2nd ed., Belmont, CA: Thomson and Wadsworth.