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Leigh Lewis
llewis25@lion.lmu.edu

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**Religious Beliefs as They Relate to Beliefs about Free Will,
Including Determinism, Libertarianism, and Compatibilism**

A thesis submitted in partial satisfaction
of the requirements of the University Honors Program
of Loyola Marymount University

by

Leigh Lewis

May 4, 2021

**Religious Beliefs as They Relate to Beliefs about Free Will, Including Determinism,
Libertarianism, and Compatibilism**

Leigh Lewis

Department of Psychology, Loyola Marymount University

Psychology Honors Mentor: Dr. David Hardy

Abstract

Research on religion as it relates to free will suggests that one's religiosity and religious commitment may have an impact on their beliefs about free will and determinism. Previous research indicates a positive correlation between religiosity and belief in free will. When it comes to determinism, reported results are more complicated but lightly suggest that there is a negative correlation between religiosity and determinism--although different definitions of determinism impact the correlation (Carey & Paulhus, 2013). The present study, involving 170 college students, investigated how religiosity and levels of religious commitment may impact beliefs about free will and determinism. In addition, we found interesting results relating to more complex and nuanced beliefs about free will and determinism, namely libertarianism. Similar to previous research, we found that people who are religious have higher endorsement of free will than those who are not religious. However, contrary to past research, we found that those who are religious also have higher endorsement of determinism than those who are not religious. In line with our reported results that religious people have higher endorsement of determinism than non-religious people, we also found that those who are religious have lower endorsement of libertarianism than those who are not religious. It is proposed, based on these results, that those who are religious may interpret causal determinism as a type of divine determinism, also known as fatalism; and therefore, religious people tend to believe that the future is determined and caused by God's will (Vicens, 2012).

**Religious Beliefs as They Relate to Beliefs about Free Will, Including Determinism,
Libertarianism, and Compatibilism**

Free will has been a topic of contention for decades, but in general, this has been a discussion largely dominated by the philosophical community. In recent years, however, psychologists have begun to enter this conversation (Nadelhoffer, Shepard, Nahmias, Sripada, & Ross, 2014). The philosophical debate consists of how to define free will as well as questioning whether or not free will is compatible with determinism. Psychologists, on the other hand, are more focused on people's beliefs about free will; they examine the psychology of believing in free will in order to gain insight into the impacts believing in or not believing in free will can have on people's behaviors. Before discussing this psychological perspective on free will, it is crucial to define free will, determinism, libertarianism, and compatibilism.

Philosophers continue to debate the definition of free will, but for the present study, we define free will as the ability of people to exercise the sense of control over their actions necessary for moral responsibility, where moral responsibility is a person's responsibility for actions related to morality, or what is right and wrong (McKenna & Pereboom, 2016). As previously stated, when people think about free will, they also consider the topic of determinism. Determinism is the idea that at any time, there is only one possible future; it is the theory that every event is determined by a previous event (McKenna & Pereboom, 2016).

In folk language, people often consider free will and determinism to be incompatible in that it is not possible for both to be true. This understanding of or belief about free will relates to the idea of libertarianism, which is the belief that humans are able to act freely and that these actions are not determined by external factors (McKenna & Pereboom, 2016). However,

in the field of philosophy, this is not universally accepted. On the contrary, many philosophers accept the concept of compatibilism, or the idea that it is possible for determinism to be true and for some person to have free will (McKenna & Pereboom, 2016).

Regarding research on free will in the discipline of psychology, an abundance of researchers examine how people's beliefs about free will influence their prosocial or helping behaviors. For instance, Vohs and Schooler (2008) found that weaker endorsement of free will led to an increase in cheating on tasks. Similarly, Baumeister, Masicampo, and DeWall (2009) found that when people have been induced not to believe in free will, they exhibit more aggressive behaviors and are less likely to help. However, recent research on the impact of believing in free will on helping behaviors has also resulted in null findings (Harms, Liket, Protzco, & Schölmerich, 2017; Crone & Levy, 2019). Although there is conflicting research on whether free will beliefs increase helping behaviors, because these beliefs do appear to have some impact on behavior in general, it might be helpful to examine factors that may contribute to or be associated with people's beliefs about free will.

One such factor that might influence free will beliefs is religion. Many religious teachings endorse either free will or determinism. For instance, Martin Luther, in *Bondage of the Will* (1823) states, "it stands confirmed, even by your own testimony, that we do all things from necessity, not from Free-will: seeing that the power of Free-will is nothing . . .". Therefore, Luther's teachings suggest that free will does not exist. In addition, Calvinists are taught that God determines each person's fate (Nadler, 2019). The idea that God determines people's actions (or destinies) is divine determinism or fatalism: every event is determined by God

(Vicens, 2012). However, in Jewish teachings, there is no determinism. Rather, humans are understood to have free will (Nadler, 2019).

Because there is such diversity in religious teachings on free will, one might question how one's self identified religious beliefs and commitment more generally relate to their beliefs about free will. Previous research has briefly explored general relationships between religion and free will. For instance, Nadelhoffer et al. (2014) found a significant positive correlation between religiosity and agreement with a conditional account of free will utilizing their Free Will Inventory. However, Murray, Murray, & Nadelhoffer (2020) found that the relationship between Christianity and libertarian views of free will is not straightforward. Therefore, there is a need for more research that explores these relationships.

Utilizing the Free Will Inventory (Nadelhoffer et al., 2014), the present study seeks to further examine associations between religious beliefs, religious commitment, and beliefs about free will, determinism, libertarianism, and compatibilism. This study tests the following hypotheses: (1) People who are religious are more likely to have stronger free will beliefs than those who do not affiliate with a religion; (1.1) People who self-identify as having strong religious commitment are more likely to have stronger free will beliefs than those who self-identify as having weaker religious commitment; (2) People who are religious are more likely to have weaker beliefs in determinism than those who are not religious; (2.1) People who self-identify as having strong religious commitment are more likely to have weaker beliefs in determinism than those who self-identify as having weaker religious commitment; (3) People who are religious are more likely to endorse libertarianism than those who have no religious affiliation; (3.1) People who self-identify as having strong religious commitment are more likely

to endorse libertarianism than those who self-identify as having weaker religious commitment; (4) People who are religious are less likely to endorse compatibilism than those who do not affiliate with a religion; and (4.1) People who self-identify as having strong religious commitment are less likely to endorse compatibilism than those who self-identify as having weaker religious commitment;.

Methods

Participants

Participants were 170 Loyola Marymount University (LMU) undergraduate students recruited online through LMU Psychology Department's Human Subject Pool. 24.7% of participants ($n = 43$) reported being male, 72.4% of participants ($n = 126$) reported being female, and 0.6% of participants ($n = 1$) reported other. 20.7% of participants ($n = 36$) reported being Asian or Asian American; 9.8% of participants ($n = 17$) reported being Black or African American; 9.2% of participants ($n = 16$) reported being Hispanic or Latinx; 0.6% of participants ($n = 1$) reported being Native American, or Pacific Islander, or Alaskan Native; 54% of participants ($n = 94$) reported being White or European American; and 3.4% of participants ($n = 6$) reported other. Participants' ages ranged from 18 to 23 with a mean age of 18.8. 53.4% of participants ($n = 93$) reported being first year students, 31% of participants ($n = 54$) reported being in their sophomore year, 8.6% of participants ($n = 15$) reported being in their junior year, and 4.6% of participants ($n = 8$) reported being in their senior year.

Regarding religious beliefs, 65.9% of participants ($n = 112$) reported being affiliated with an organized religion, and 31.1% ($n = 53$) reported not being affiliated with a religion. In

addition, 14.7% of participants ($n = 25$) reported having strong religious commitment 48.2% ($n = 82$) reported having a moderate level of religious commitment, and 34.7% ($n = 59$) reported having no religious commitment.

Measures

Religious Beliefs Measure

Religious beliefs were measured utilizing two self-report items that were embedded in the background questionnaire. The first item asked participants to self-identify their religious affiliation (Christian, Muslim, Jewish, Hindu, Atheist, Agnostic, or Other). The second item examined level of religious commitment on a 5-point scale (1 = No Commitment, 2 = Some Commitment, 3 = Moderate Commitment, 4 = Strong Commitment, and 5 = Extremely Devout).

The Religiosity variable was computed utilizing data collected in the background questionnaire on religious affiliation (see Appendix B). We created two groups in the variable: Religious or Not Religious. The groups were made based off of the assumption that being affiliated with an organized religion constituted someone as being religious. The Religious group was composed of participants who were Christian, Muslim, Jewish, Hindu, or Other. The Not Religious group was composed of participants who were Atheist, Agnostic, or None.

The Commitment variable was computed utilizing data collected in the background questionnaire on religious commitment (see Appendix B). Because there was only one participant who self-identified as Extremely Devout, and because we decided that Some Commitment and Moderate Commitment are too similar to differentiate the importance of having both, we decided to compute three commitment levels from the original five. We merged the Some Commitment and Moderate Commitment groups into a single Some

Commitment group, and we merged the Strong Commitment and Extremely Devout groups into a single Strong Commitment group, leaving three groups: No Commitment, Some Commitment, and Strong Commitment.

Free Will Beliefs Measure

Free will beliefs were measured utilizing the Free Will Inventory (FWI), a 29-item inventory with two parts. Part 1 has three 5-item subscales. Utilizing the first two subscales in Part 1 of the FWI, the present study explored the strength of participants' beliefs in free will and determinism (see Table 1). Part 2 has 14 items that examine more complex beliefs about free will and determinism. The present study looked specifically at items 1, 3, 4, and 13 to examine participants beliefs in libertarianism and compatibilism (see Table 2).

The Free Will (FW) and Determinism (Det) variables were computed utilizing data collected from Part 1 of the FWI (see Table 1). The FW variable was composed of the Free Will Subscale (items 1, 4, 7, 10, and 13 in Table 1), with a range between 5 and 35, higher scores indicating stronger endorsement of the concept of free will. The Det variable was composed of the Determinism Subscale (items 2, 5, 8, 11, and 14 in Table 1), with a range between 5 and 35, with higher scores indicating stronger endorsement of determinism. Both of these subscales are defined in "The Free Will Inventory: Measuring Beliefs about Agency and Responsibility" (Nadelhoffer et al., 2014).

The Libertarianism and Compatibilism variables were computed using data collected from Part 2 of the FWI (see Table 2). The Libertarianism variable was composed of items 4 and 6, with a range between 2 and 14, with higher scores suggesting a stronger endorsement of libertarianism. The Compatibilism variable was composed of items 3 and 13, with a range

between 2 and 14, with higher scores indicating a stronger endorsement of compatibilism (see Table 2).

Procedure

Participants were recruited through LMU Psychology Department's Human Subject Pool. All students in the Subject Pool were registered for a General Psychology course at LMU, and students volunteered for studies in order to receive credit for participating in psychology studies for their General Psychology course. The study was administered online through Qualtrics, a web-based tool that enables researchers to perform survey research and collect data. Participants first completed an informed consent form (see Appendix A). They then completed a background questionnaire (see Appendix B) followed by the FWI (see Table 1 and Table 2).

Results

Level of significance (or alpha level) for all statistical tests was set at $p = .05$.

Analyses of Variance

To examine the possible association between religiosity and beliefs about free will, determinism, libertarianism, and compatibilism, four one-way analyses of variance (ANOVA) were conducted with the quasi-independent variable of religiosity, which has two groups: religious or not religious. Means, standard deviations, probability values, measures of effect size (Partial Eta Squared), and F-ratios for this series of ANOVAs are presented in Table 3.

A similar series of ANOVAs were conducted on our secondary hypotheses, which examined how level of religious commitment may relate to or impact people's beliefs about free will, determinism, libertarianism, and compatibilism. Again, four ANOVAs were performed

on the quasi-independent variable of religious commitment including three groups: strong, moderate, and none. All means, standard deviations, probability values, measures of effect size (Partial Eta Squared), and F-ratios are presented in Table 4.

Correlational Analysis

Three Pearson Product Moment Correlational analyses were used to explore the relationships between endorsement of free will, endorsement of determinism, and endorsement of compatibilism.

The correlational analysis was statistically significant in a positive direction between the strength of one's endorsement of free will and the strength of one's endorsement of compatibilism (see Table 5), which suggests that those who have stronger endorsements of free will are more likely to endorse compatibilism than those who have weaker endorsements of free will (see Figure 1).

The correlational analysis's results indicated that there is a statistically significant negative correlation between the strength of one's endorsement of determinism and the strength of one's endorsement of compatibilism, (see Table 5; see Figure 2). This suggests that those who have stronger endorsements of determinism are less likely to endorse compatibilism than those who have weaker endorsements of determinism.

The third correlational analysis's results indicated that there is no correlation between free will and determinism (see Table 5), suggesting that one's endorsement of free will has no relation to their endorsement of determinism (see Figure 3).

Discussion

Recall that there were originally four primary hypotheses and four secondary hypotheses:

1. People who are religious are more likely to have stronger free will beliefs than those who do not affiliate with a religion.

- 1.1 Secondary Hypothesis: People who self-identify as having strong religious commitment are more likely to have stronger free will beliefs than those who self-identify as having weaker religious commitment.

2. People who are religious are more likely to have weaker beliefs in determinism than those who do not affiliate with a religion.

- 2.1 Secondary Hypothesis: People who self-identify as having strong religious commitment are more likely to have weaker beliefs in determinism than those who self-identify as having weaker religious commitment.

3. People who are religious are more likely to endorse libertarianism than those who do not affiliate with religion.

- 3.1 Secondary Hypothesis: People who self-identify as having strong religious commitment are more likely to endorse libertarianism than those who self-identify as having weaker religious commitment.

4. People who are religious are less likely to endorse compatibilism than those who do not affiliate with religion.

- 4.1 Secondary Hypothesis: People who self-identify as having strong religious commitment are less likely to endorse compatibilism than those who self-identify as having weaker religious commitment.

Primary hypothesis 1—people who are religious are more likely to have stronger free will beliefs than those who do not have any religious affiliation—and its secondary hypothesis 1.1 are notably related to endorsement of free will. We found a trend supporting this primary hypothesis ($p = .069$). Mean scores on the FWI did suggest that those who are religious have stronger free will beliefs than those who are not religious. However, although close, this difference was not statistically significant. In addition, we found no statistically significant difference in means between level of religious commitment and one's strength of beliefs in free will.

That said, with regards to this secondary hypothesis—people who self-identify as having strong religious commitment are more likely to have stronger free will beliefs than those who self-identify as having weaker religious commitment— looking at the mean scores in Table 3, the pattern shows an incremental increase in free will belief as religious commitment goes up. Both the patterns being shown in primary hypothesis 1 and its secondary hypothesis align with previous research showing a positive association between levels of religiosity and strength of belief in free will—as level of religious commitment increases, strength of belief in free will increases (Carey & Paulhus, 2013). It is possible that we did not find a statistically significant difference because of low statistical power. In Carey & Paulhus's study, their correlation was $r = .13$, which, while statistically significant, is a small correlation. In their study, the sample size was large ($N = 253$). Because this was such a small effect, the large sample size enabled Carey & Paulhus to find a statistically significant result. In addition, in Carey & Paulhus's study, if we square their r to find effect size, we get $r^2 = .017$. In our study, we found the same effect size ($\eta^2 = .017$). This, in addition to the fact that our sample size was smaller ($N = 170$) than Carey &

Paulhus's study shows that we are likely under-powered, and more participants are likely needed to find a statistically significant result.

Our 2nd primary hypothesis (people who are religious are more likely to have weaker beliefs in determinism than those who do not affiliate with a religion) was not supported by our study. Instead, a statistically significant difference in means indicated that those who are religious have higher endorsement of determinism than those who are not religious. This finding does not fully align with previous research. When it comes to research on religiosity as it relates to determinism, reported results are complicated but suggest that there is a negative correlation between religiosity and determinism—increased religiosity associates with lower endorsement of determinism—although different definitions of determinism impact this association (Carey & Paulhus, 2013). For instance, when looking at fatalistic determinism, Carey & Paulhus found a statistically significant small positive correlation ($r = .24$) between religiosity and belief in fatalistic determinism—as religiosity increases, belief in fatalistic determinism increases. However, when it came to scientific determinism, Carey & Paulhus found no statistically significant correlation between religiosity and belief in scientific determinism. This relationship regarding different definitions and understandings of determinism will be further discussed below.

With regards to the secondary hypothesis here, namely that people who self-identify as having strong religious commitment are more likely to have weaker beliefs in determinism than those who self-identify as having weaker religious commitment, we found no statistically significant difference between level of religious commitment and one's strength of beliefs in determinism. In addition, looking at Table 3, we found no pattern suggesting any impact of level

of religious commitment on strength of endorsement of determinism. Because in previous research, there appears to often be some kind relationship between religious commitment and belief in determinism, it is possible that this, again, is due to our study being under-powered (Carey & Paulhus, 2011; Caspar, Verdin, Rigoni, Cleeremans, & Klein, 2017). However, because we don't see a pattern, it is difficult to assess whether or not this is true. In addition, because the FWI is actually interested in causal determinism, whereas Carey & Paulhus (2011) and Caspar et al. (2017) examined scientific determinism and fatalism, perhaps we just see that level of religious commitment has little or no association to belief in causal determinism.

We also did not find evidence supporting our 3rd primary hypothesis, which stated that people who are religious are more likely to endorse libertarianism than those who do not associate with some religion. Rather, a statistically significant difference showed the opposite: those who are not religious have higher endorsement of libertarianism than those who are religious. We believe that this finding aligns with our finding that religious people have higher endorsement of determinism than those who are not religious. If religious people are more likely to endorse determinism than non-religious people, it makes logical sense that they would then have weaker endorsement of libertarianism, or the belief that people have free will and determinism *does not* exist. With reference to our 3rd secondary hypothesis (people who self-identify as having strong religious commitment are more likely to endorse libertarianism than those who self-identify as having weaker religious commitment), we found no statistically significant difference between level of religious commitment and endorsement of libertarianism. In addition, we see no patterns, and therefore see no reason to believe that level of religious commitment has an impact on strength of beliefs in libertarianism. Rather, we

think that only religiosity (whether or not one is affiliated with a religion) relates to the strength of one's endorsement of libertarianism.

Our final primary hypothesis was that people who are religious are less likely to endorse compatibilism than those who are not affiliated with a religion. Regarding this hypothesis, evidence did not show any support. We found no statistically significant difference in endorsement of compatibilism between those who are and those who are not religious. However, we see a very small, not statistically significant, pattern suggesting that it is possible that those who are religious have higher endorsement of compatibilism than those who are not religious (see Table 4). In addition, regarding our final secondary hypothesis—people who self-identify as having strong religious commitment are less likely to endorse compatibilism than those who self-identify as having weaker religious commitment—we found no statistically significant difference in belief of compatibilism between different levels of religious commitment. But, again, looking at Table 3, there is small, non-statistically significant pattern hinting that it is plausible that those with higher religious commitment have higher endorsement of compatibilism than those with lower religious commitment. Both of the patterns found in these primary and secondary hypotheses align with our results relating to our first and second primary hypotheses: if religious people have higher endorsement of free will and higher endorsement of determinism than those who are not religious, it follows that religious people would have higher endorsement of compatibilism, or the belief that free will and determinism can exist together.

Before making interpretations or drawing any conclusions about our results, we want to discuss possible limitations of our study. For instance, the fact that the effect sizes found for

each statistical analysis (see Table 3 and Table 4) were very low suggests that these topics might be too nuanced to find statistically significant differences. Therefore, detecting a true effect in these nuanced philosophical topics might be less likely. In addition, because the study was run through the LMU Psychology Department's Human Subject Pool, all of the participants are undergraduate students at a Jesuit, Catholic university all taking a general psychology course. Our study looks at religious beliefs, but since LMU students are all in a Jesuit curriculum, it is likely that some of these beliefs are influenced by this curriculum. In addition, it is possible that there are some nuances in how such students taking similar courses may think as compared to the general population, so we want to be careful of over-generalizing our results.

However, we do believe that our results suggest something interesting about the association between religious beliefs and nuanced beliefs about free will. Our results suggest that religious people are more likely to endorse free will *and* determinism as compared to those who are not religious. In accordance with this, religious people are less likely to endorse libertarianism—the idea that humans have free will and are *not* determined by external factors (McKenna & Pereboom, 2016). And, we found a possible pattern indicating that religious people are more likely to endorse compatibilism than those who are not religious. These findings are interesting when compared to both general folk intuitions about free will and folk understanding of free will as it relates to religious teachings.

Folk Understanding of Free Will, and Determinism, and Religion

Philosophers often consider non-philosophers' intuitions about free will and determinism, and it is understood that non-philosophers often have a premonition that free will is not compatible with determinism. In other words, some philosophers believe that those

who are not philosophers often begin as incompatibilists and believe that there is some innate conflict between free will and determinism (Kane, 1999). If this is true, our results that religious people are more likely to endorse both free will and determinism may appear confusing.

However, more in line with our results, there are findings that contradict this idea that people are, at first, incompatibilists. For instance, previous research has found statistically significant results showing that, even with an understanding that there is a deterministic universe, participants still responded that some person has free will (Nahmias, 2011). These results motivate us to understand our results not as confusing but rather possibly common among a general population.

In addition to such intuitions non-philosophers have about free will and determinism, people might assume that the fact that religious people are more likely to endorse both free will and determinism than non-religious people is *illogical*.

In common theism God is understood to be omnipotent, omnibenevolent, and omniscient (Speak, 2014). Put simply, God is then all-powerful, good, and *all-knowing*. I will focus here on this idea of omniscience. An omniscient being is understood to be a being that is all-knowing and one that holds no false beliefs, and therefore, if God is omniscient (as theists understand God to be), nothing God believes can be false. (Pike, 1965). In addition, God being omniscient means that God knows *everything*—past, present, and future. Therefore, we can look at the following example. Let's say a woman has a choice to either go to the grocery store or not go to the grocery store. If this woman has free will, it is within her complete power to choose to go to the grocery store or stay home. However, God, being an omniscient being, must have held, at any time in the past, a belief about whether the woman would choose to go

to the grocery store. Since God can have no false beliefs, the woman's choice had to have been the choice God believed she would make. This example shows a possible incompatibility between God's omniscience and the existence of freedom of will within theistic teachings (Basinger, 1984). This helps to show why the idea that religious people would be more likely to endorse *both* free will and determinism might, at first glance, seem illogical.

Religious Teachings and Free Will

Before we take a deeper look into how we may be able to use this idea of God's omniscience to actually motivate our findings, we must take a look more deeply at religious teachings regarding free will. There is a lack of consistent teachings on free will and determinism among common Abrahamic religions, namely Christianity, Islam, and Judaism. This inconsistency could, on its own, possibly explain our study's findings.

Now, first let's take a look at the fact that those who are religious appear to be more likely to have higher endorsement free will than those who are not religious. Depending on what religion we are looking at, we will find different teachings regarding free will. However, in Judaism, Protestantism, and Catholicism we find that people are taught to believe that there is free will. Jewish teachings often state that free will is "bestowed" upon all humans (Nadler, 2019). In the Jewish faith, people believe that freedom of will is the only way that moral responsibility can be preserved, and Jewish people do believe that moral responsibility has been preserved (Nadler, 2019). In terms of Christianity, we see conflicting teachings on freedom of the will. However, many common Protestant denominations endorse free will. For instance, the founder of Methodism, John Wesley, rejects any kind of predestination or determinism (Cary, 2007). Catholicism also argues for a strong doctrine of free will (Cary, 2007;

Glaeser & Glendon, 1998). These religious teachings may explain why we see in our study that religious people are possibly more likely to have stronger endorsement of free will than non-religious people.

Religious Teachings and Determinism

Contrary to religious teachings that argue for the existence of free will, other religious teachings argue for the existence of predestination, fatalism, or divine determinism.

Lutheranism, Calvinism, and Islam all have religious teachings that endorse a deterministic type of universe. In Luther's teachings, he believes that humans are incapable of making good choices by their own will; he accepts that, therefore, it is not up to humans to be able to make choices (Cary, 2007; Luther & Cole, 1823). Calvinist teachings are very similar to Lutheran teachings—they accept predestination by God rather than free will (Cary, 2007). In Islam (and Eastern religions in general), teachings often emphasize divine dominion and predestination, hinting more at the existence of determinism than the existence of free will (Watt, 1982). These religious teachings may explain the fact that in our study we found that religious people are more likely to have higher endorsement of determinism than those who are not religious.

But what type of determinism is it that religious people are likely to endorse? There are many different definitions of determinism. In this discussion, we will discuss the general definition of causal determinism and divine determinism (also referred to as theological determinism and fatalism). Because our study utilized the Free Will Inventory, we look at the following definition of determinism: the idea that given the past and the laws of nature, there is only one possible future (Nadelhoffer et al., 2014). This definition is a general definition of causal determinism. It is the idea that given the way things were in the past, the events in the

future must be fixed by natural law (Hoefer, 2003). However, this definition is notably general and could be interpreted in different ways. Therefore, it is possible that the reason we found that religious people are more likely to endorse determinism than non-religious people is because they interpreted this causal determinism as a type of divine determinism.

Divine determinism includes many things. First, it is the idea that God causally determines everything (McKenna & Pereboom, 2016). It is also the understanding that this determinism arises from God's exertion of power (Hunt, 2002). In addition, divine determinism is the idea that every event is necessitated and caused by God's will (Vicens, 2012). Each of these definitions of divine determinism can easily go along with the general definition of determinism utilized in the Free Will Inventory—given the past, God determines all future events. Especially if some religious teachings point to the existence of determinism, and all religions tend to accept that God is all-knowing, it follows that religious people might interpret causal determinism as divine determinism. Therefore, they might be more likely to have stronger beliefs in determinism than those who are not religious.

Omniscience and Compatibilism

So far, we have been looking at the fact that we found that people who are religious are more likely to have higher endorsement of both free will and determinism as compared to non-religious people. It is possible that this is true without suggesting that religious people actually endorse the idea that both exist *together*. But recall that we also saw a very slight trend showing that it is possible that those who are religious are more likely to also have higher endorsement of compatibilism than non-religious people. This would be the idea that religious

people have higher endorsement of the idea that free will and determinism exist *together* in our universe. To motivate this possible result, we must return to the idea of omniscience.

Remember that in common theism, God is omniscient. This belief is true even in those religions that teach that free will exists and determinism does not exist. Therefore, we think that even if religions like Judaism, Methodism, and Catholicism say that there is no determinism, they still endorse the fact that God is all-knowing and has no false beliefs. These seem to be contradictory endorsements. This contradiction, and folk inability to reconcile such a contradiction, might in itself explain our results (Watt, 1982). Perhaps some religious people have been taught that free will exists, and therefore, they have higher endorsement of free will than non-religious people. In addition, because religious people are also taught to believe in an omniscient God, they tend to have some inkling towards accepting that determinism exists in addition to free will.

Discussion of Exploratory Analyses

In addition to the results discussed above, we want to discuss our exploratory analyses. Recall that we performed three Pearson Product Moment Correlations as a part of an exploratory analysis in our study: (1) the association between strength of endorsement of free will and strength of endorsement in compatibilism, (2) the association between strength of endorsement of determinism and strength of endorsement in compatibilism, and (3) the association between strength of endorsement of free will and strength of endorsement in determinism.

We found that there was a small positive correlation between strength of belief in free will and strength of belief in compatibilism (see Table 5), meaning that as strength of belief in

free will increases, strength of belief in compatibilism also increases. When we look at the demographics of the present study's participants, we see that the majority of participants reported being affiliated with an organized religion (65.9%), and the majority of participants reported having moderate or strong religious commitment (62.9%). If we look at the trend we found showing that those who are religious have higher endorsement of free will, and if most of the participants in the present study are religious, it makes sense that we would see a positive correlation between free will beliefs and compatibilism beliefs based on our discussion above about religious teachings on free will and determinism. If religious people accept the idea that God is omniscient and if they endorse free will, they may be likely to also endorse determinism, and therefore, endorse compatibilism. Accepting this possibility and noting that the majority of our participants are in some way or another religious, points to the idea that those who then endorsed free will in our study may also be more likely to have stronger endorsement of compatibilism.

In addition, we found that there was a small negative correlation between strength of belief in determinism and strength of belief in compatibilism (see Table 5), meaning that as strength of belief in determinism increases, strength of belief in compatibilism decreases and vice versa. Again, because most of our participants are religious, we can point to religious teachings to possibly explain why this correlation might exist. Because in common theism God is understood to be omniscient, it is easy to see how religious people might endorse determinism. In addition, because there are quite a few religions in which people are taught that free will does not exist, it is possible that this could influence participants not to endorse compatibilism.

Regarding our last exploratory correlational analysis, we found a very slight correlational trend in a negative direction (as strength of belief in free will increases, strength of belief in determinism decreases). However, the correlation was slight and was not statistically significant (see Table 5). Therefore, we are inclined to think there is no true correlational relationship between free will and determinism. In some ways, this does not seem to follow folk understanding of free will and determinism. Intuitively, non-philosophers might expect free will and determinism to be negatively correlated. However, the fact that this does not appear to truly be the case parallels all of our other results. Again, we found that those who have some religious affiliation are possibly more likely to believe in free will, appear to be more likely to believe in determinism, and seem to be less likely to believe in libertarianism than those who are not affiliated with a religion. Considering that most of our participants do affiliate with some organized religion, it would be less likely that we would find such a negative correlation (or any correlation) between free will and determinism. If our participants are less likely to be libertarians, and they believe in free will, they are not incompatibilists. Therefore, there would not be any strong negative correlation between free will and determinism. Because we do not see a strong trend showing that those who are religious are more likely to, overall, have stronger beliefs in compatibilism than those who are not religious, it also makes sense that we do not see a positive correlation between free will and determinism.

Conclusion

In analyzing our results, we found that religious affiliation and level of religious commitment may have some relation to strength of beliefs in free will, determinism, libertarianism, and compatibilism. It appears that those with some religious affiliation are more

likely to have stronger endorsement both free will and determinism than those who have no religious affiliation. It seems to make intuitive sense that those who are religious are more likely to endorse free will than non-religious people. However, although it may be surprising that religious people have stronger endorsement of determinism than those who are not religious, we believe that this could be due to the fact that religious people have a tendency to believe in God's omniscience. Therefore, it is possible that those who are affiliated with some organized religion understand causal determinism to be divine determinism and endorse the idea that God's will causes the future.

Future Research

Our study gives some insight into how our beliefs about religion can be related to and potentially impact beliefs about other topics. However, we only looked at people's beliefs about free will, and therefore, future research could be done to evaluate what other topics of belief might be related to religious beliefs.

In addition, we might be interested in how other types of beliefs relate to the strength of belief in free will. For example, how might one's political beliefs be associated with their endorsement of free will? How might one's nationality relate to their beliefs about free will?

We also believe that future research in the area of religious beliefs and free will should examine ethical considerations of both religious beliefs and the belief in free will. For instance, we want to understand how one's belief or disbelief in free will may be related to their ethical considerations and vice versa. In addition, it may be interesting to consider how religious traditions' ethical teachings might be related to beliefs about free will.

Our results thus far appear to shine light on relationships between religious endorsement and beliefs about free will, determinism, libertarianism, and compatibilism, and further examination of research in these areas may allow us to better understand how people's different sets of beliefs might be significantly interconnected.

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Table 1

Free Will Inventory Part 1 Items

#	Statements
1	People always have the ability to do otherwise.
2	Everything that has ever happened had to happen precisely as it did, given what happened before.
3	The fact that we have souls that are distinct from our material bodies is what makes humans unique.
4	People always have free will.
5	Every event that has ever occurred, including human decisions and actions, was completely determined by prior events.
6	Human action can only be understood in terms of our souls and minds and not just in terms of our brains.
7	How people's lives unfold is completely up to them.
8	People's choices and actions must happen precisely the way they do because of the laws of nature and the way things were in the distant past.
9	Each person has a non-physical essence that makes that person unique.
10	People ultimately have complete control over their decisions and their actions.
11	A supercomputer that could know everything about the way the universe is now could know everything about the way the universe will be in the future.
12	The human mind cannot simply be reduced to the brain.
13	People have free will even when their choices are completely limited by external circumstances.
14	Given the way things were at the Big Bang, there is only one way for everything to happen in the universe after that.
15	The human mind is more than just a complicated biological machine.

Note. Items 1, 4, 7, 10, and 13 make up the Free Will (FW) Subscale; and items 2, 5, 8, 11, and 14 make up the Determinism (DE) Subscale.

Table 2

Free Will Inventory Part 2 Items

#	Statements
1	Free will is the ability to make different choices even if everything leading up to one's choice (e.g., the past, the situation, and their desires, beliefs, etc.) were exactly the same.
2	Free will is the ability to make a choice based on one's beliefs and desires such that, if one had different beliefs or desires, one's choice would have been different as well
3	People could have free will even if scientists discovered all of the laws that govern all human behavior
4	To have free will means that a person's decisions and actions could not be perfectly predicted by someone else no matter how much information they had
5	If it turned out that people lacked non-physical (or immaterial) souls, then they would lack free will
6	To have free will is to be able to cause things to happen in the world without at the same time being caused to make those things happen
7	People have free will as long as they are able to do what they want without being coerced or constrained by other people
8	To be responsible for our present decisions and actions we must also be responsible for all of our prior decisions and actions that led up to the present moment
9	People deserve to be blamed and punished for bad actions only if they acted of their own free will
10	People who harm others deserve to be punished even if punishing them will not produce any positive benefits to either the offender or society—e.g., rehabilitation, deterring other would-be offenders, etc.
11	People who perform harmful actions ought to be rehabilitated so they no longer pose a threat to society
12	People who perform harmful actions ought to be punished so that other potential offenders are deterred from committing similar harmful actions
13	People could be morally responsible even if scientists discovered all of the laws that govern human behavior
14	If it turned out that people lacked non-physical (or immaterial) souls, then they would lack moral responsibility

Note. Items 4 and 6 suggest a belief in libertarianism. Items 3 and 13 suggest a belief in compatibilism.

Table 3

One Way Analysis of Variance Results with Religiosity as the Quasi-Independent Factor

	Religious		Not Religious		<i>F</i>	<i>p</i>	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Free Will	25.08	5.17	23.52	5.10	3.35	.069	.020
Determinism	18.53	4.89	16.58	5.67	5.10	.025	.030
Libertarianism	9.30	1.93	10.11	1.90	6.42	.012	.038
Compatibilism	10.43	1.99	10.17	2.15	0.58	.448	.004

Table 4

One Way Analysis of Variance Results with Religious Commitment as the Quasi-Independent Factor

	Strong Commitment		Moderate Commitment		No Commitment		<i>F</i>	<i>p</i>	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Free Will	25.84	4.94	24.72	5.05	23.85	5.39	1.37	.257	.017
Determinism	17.76	5.13	18.40	4.84	17.39	5.80	0.66	.519	.008
Libertarianism	9.36	1.95	9.43	1.97	9.85	1.90	0.97	.381	.012
Compatibilism	10.84	1.95	10.35	2.01	10.12	2.09	1.11	.332	.013

Table 5

Pearson Correlations between Belief in Free Will vs. Belief in Compatibilism, Belief in Determinism vs. Belief in Compatibilism, and Belief in Free Will vs. Belief in Determinism

	Free Will	Determinism	Compatibilism
Free Will	—	-.008(.918)	.253(.001)
Determinism	-.008(.918)	—	-.289(.000)
Compatibilism	.253(.001)	-.289(.000)	—

Note. *p* values are in parentheses next to *r* values.

Alpha level set at $\alpha < .05$.

Figure 1

Pearson Correlation between Free Will and Compatibilism

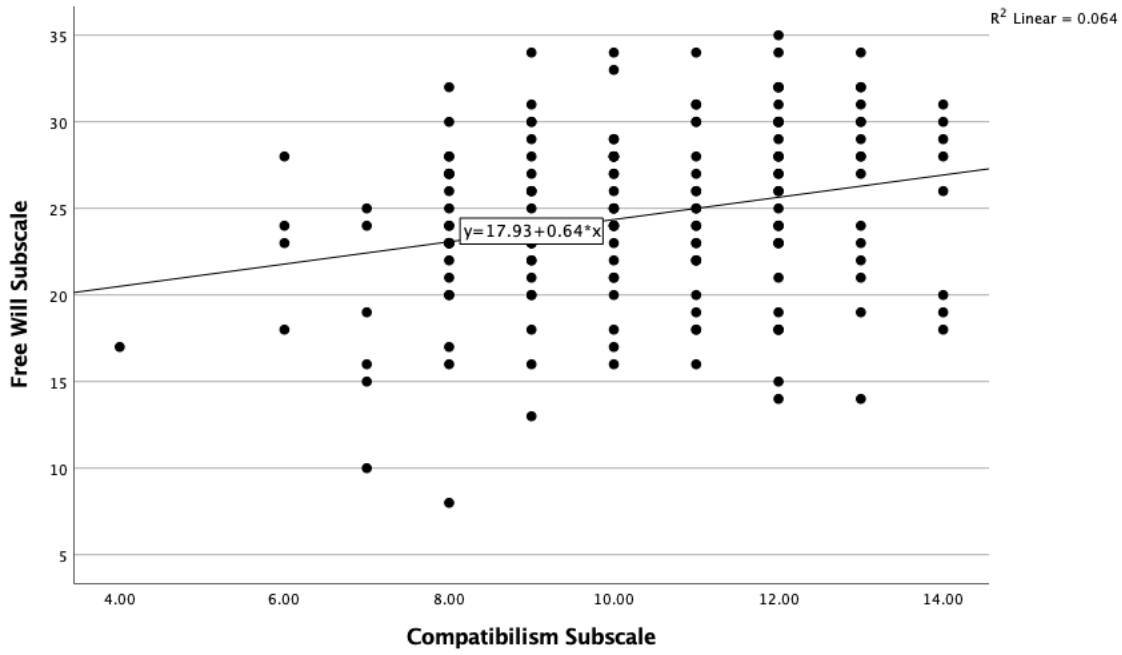


Figure 2

Pearson Correlation between Determinism and Compatibilism

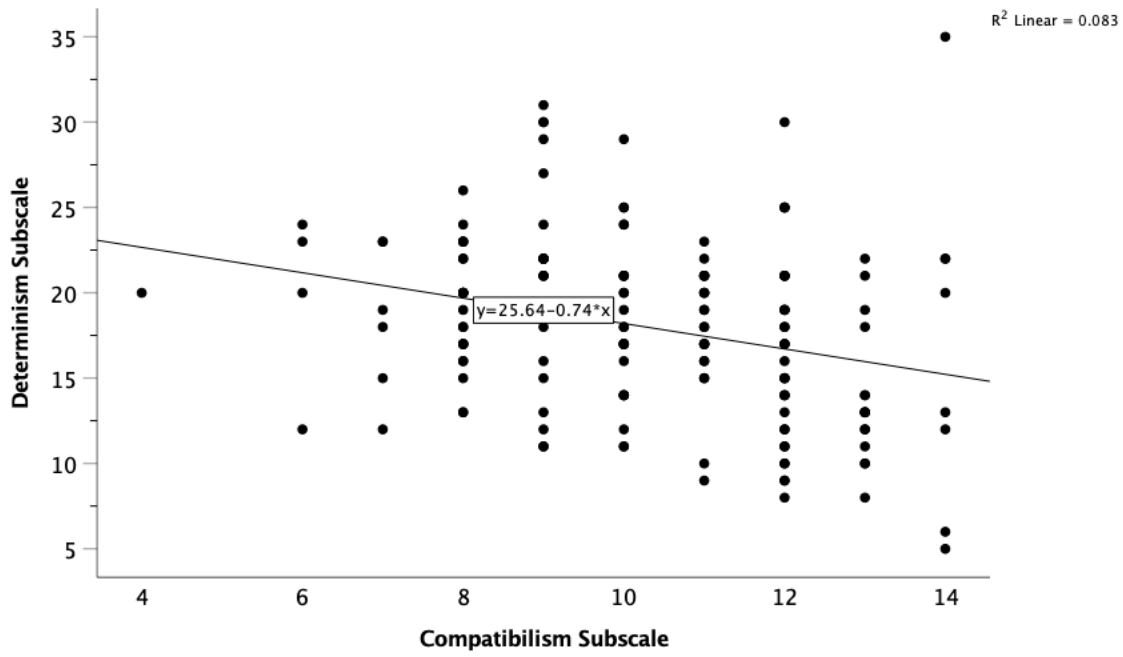
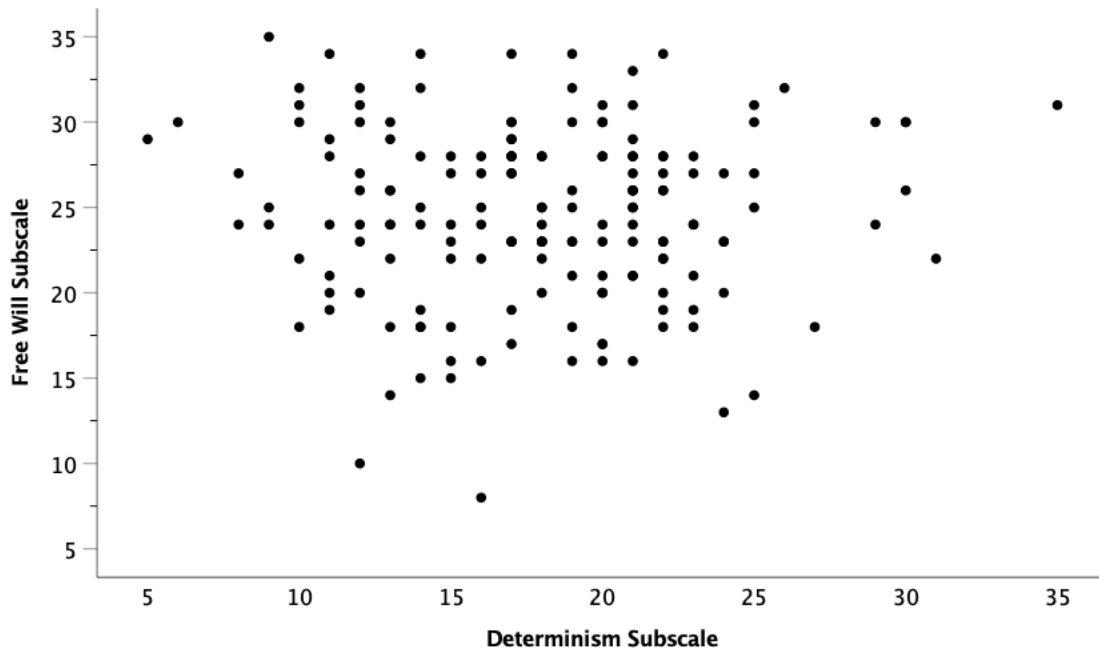


Figure 3

Pearson Correlation between Free Will and Determinism



Appendix A

Informed Consent Form

Loyola Marymount University
Informed Consent Form

TITLE: Religious Commitment and Free Will

INVESTIGATOR: Leigh Lewis, Psychology Department, Loyola Marymount University

ADVISOR: Dr. David Hardy, Ph.D., Psychology Department, Loyola Marymount University

PURPOSE: You are being asked to participate in a research project that seeks to investigate how a person's religious commitment is related to his/her/their free will beliefs. You will be asked to complete a brief demographic questionnaire, to self-identify your level of religious commitment, and complete a survey on your beliefs about free will. You will not be audio or videotaped. The survey will take less than one hour.

RISKS: Risks associated with this study include: NONE

BENEFITS: Furthering understanding of how religious commitment might be related to beliefs about free will.

INCENTIVES: Participation will satisfy partial course requirements for General Psychology.

CONFIDENTIALITY: No personal or demographic information about you will be collected.

RIGHT TO WITHDRAW: Your participation in this study is voluntary. You may withdraw your consent to participate at any time without penalty. Your withdrawal will not influence any other services to which you may be otherwise entitled, your class standing or relationship with Loyola Marymount University.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon request, approximately one month after completion of the study, by contacting the primary investigator, Leigh Lewis, at llewis25@lion.lmu.edu.

VOLUNTARY CONSENT: I have read the above statements and understand what is being asked of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason, without penalty. If the study design or use of the information is changed, I will be informed and my consent reobtained. On these terms, I certify that I am willing to participate in this research project.

I understand that if I have any further questions, comments or concerns about the study or the

informed consent process, I may contact Dr. David Moffet, Chair, Institutional Review Board, Loyola Marymount University, 1 LMU Drive, Los Angeles, CA 90045-2659 or by email at David.Moffet@lmu.edu.

Appendix B**Background Questionnaire**

1. Please type your age (in years): _____
2. Select the choice that best represents your sex: Female Male Other
3. Select the choice that best represents your ethnicity:
 Asian or Asian American
 Black or African American
 Hispanic or Latino
 Native American or Pacific Islander or Alaskan Native
 White or European American
 Other (please describe or explain): _____
4. What is your major(s)? _____
5. Please select your class standing: First Year Sophomore Junior Senior
6. Please select the option that best describes your religious orientation / affiliation:
 Christian
 Muslim
 Jewish
 Hindu
 Atheist
 Agnostic
 Other (please describe or explain): _____
 None

Please select the choice that best represents your degree of religious commitment:

- 1 no commitment
- 2 some commitment
- 3 moderate commitment

4 strong commitment

5 extremely devout