# TOTEM

**Bacheloropgave**

Priming Effects of Religious Concepts on Moral Judgment: Between
Mean Values and Variation

Af stud. mag ved religionsvidenskab
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ABSTRACT: *This paper concerns religion and priming. In social psychology, researchers have found that almost all kinds of conceptual structures can be primed, that is, activated unobtrusively in one context and exert an influence on subsequent behavior without the person being aware of this influence. In the literature on priming and religion, researchers have found that priming with religious concepts can among other things lower cheating rates and increase cooperation between anonymous strangers. Inspired by such research and recent trends in moral psychology, I wanted to investigate whether religious priming could exert an influence on moral judgment, and did an experiment in which participants were primed with either words related to a punishing God or a forgiving Christian before rating five vignettes concerning various moral transgressions. Results showed that participants in the 'forgiving' condition on average made slightly less severe moral judgments than did participants in both the 'punishing' condition and a control condition. I discuss different explanations before criticizing earlier research for applying too monolithic an understanding of 'religious' words. Based on an understanding of concepts as complex conceptual structures (Lakoff & Johnson 2003), I suggest that the diversity in results is potentially more revealing than mean scores because of the variation in meanings attributed to different religious concepts.*

## 1. Introduction

Religion has traditionally been thought of as the foundation of morality by religious believers as well as by many researchers. Recent trends in moral psychology, however, claim that moral systems are built on the foundation of a small set of moral intuitions easily found in all societies and even across species (Haidt & Bjorklund 2008). But since this 'moral intuitionism' also notes how moral judgments are easily influenced by environmental influences, and since texts of all major religions explicitly encourage acts that benefit others at a personal cost, some researchers have examined the hypothesis that religions might facilitate such acts. A recent review concluded that thoughts of morally concerned deities do have a potential for increasing prosocial behavior when such thoughts are cognitively salient (Norenzayan & Shariff 2008).

Much of the evidence in this domain of research comes from priming studies, that is, studies investigating how exposure to one stimulus can subsequently influence the response to another stimulus. In this paper, I first review literature on priming, including priming with religious concepts. Subsequently, I present and discuss an experimental study of whether priming with words related to either a punishing God or a forgiving Christian can influence participants' subsequent moral judgment of various moral transgressions.

## 2. Introduction to priming studies

### 2.1. Priming in social psychology

In social psychology, 'priming' is commonly understood as an incidental or unobtrusive activation of social knowledge structures that exerts an influence on subsequent behavior without the person being aware of this influence (Bargh 2006, 147). In this area of study, social psychologists have found that nearly all forms of social representation can be primed, including activation of social norms of behavior within a situation and knowledge structures such as trait constructs and stereotypes, with various behavioral effects to follow (ibid., 147f). To mention a few examples, Srull & Wyer (1979) found that participants exposed to words semantically related to 'hostility' as part of a purported word comprehension test subsequently formed a more hostile impression of a target person on the basis of an ambiguous description, than a control group. Also, in an often-cited study by Bargh, Chen & Burrows (1996),

participants primed with words semantically related to an elderly stereotype in a purported study on language proficiency subsequently walked more slowly down a hallway when leaving the experiment than did control participants. In both of these studies, the priming procedure was a so-called 'scrambled-sentence' task, in which the participant is given a list of items, each consisting of typically five words, and is asked to make a complete sentence using only four of the words. For instance, the first item could be "he it hides finds instantly", from which the participant could form the sentence "he finds it instantly". Depending on the hypotheses of the experiment, different versions of the scrambled-sentence task are constructed, each containing words either related or neutral to the construct that should be primed. Thus, in the study mentioned by Bargh, Chen & Burrows two versions of the task were used: one containing words related to the elderly stereotype (such as *worried, old, lonely, grey,* and *bingo*) and one containing only neutral words, that is, neutral in respect to this stereotype (1996, 236). Various versions of this task have become a standard priming procedure in much of the literature.

## 2.2. Priming with religious concepts

The literature that has looked into effects of priming with religious concepts has primarily focused on relations between religion and prosocial behavior. As mentioned in the introduction, a recent review of the literature concerned with religious prosociality (Norenzayan & Shariff 2008), that is, "the idea that religions facilitate acts that benefit others at a personal cost" (ibid., 58), concluded that thoughts of morally concerned deities can facilitate prosocial behavior when such thoughts are cognitively salient (ibid., 62). More specifically, studies have shown that priming with religious concepts can lower cheating rates and increase cooperation between anonymous strangers; other studies have found a relation between displays of religious dedication and increased trust; and quantitative cross-cultural analyses have found a positive correlation between group size and belief in culturally sanctioned morally concerned deities, which points to how such beliefs might stabilize cooperation in larger groups (ibid.).[1]

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[1] We will not in the present paper go into the discussion of whether religion understood as belief in supernatural agents should then be seen as a mere by-product or an adaptation, but only remark that while some authors have suggested that the human ability to hold such beliefs is a byproduct of cognitive mechanisms genetically adapted for other purposes (e.g. Guthrie 1993; cf. McKay et. al 2010,

I will in a little more detail mention three studies of relevance to this paper: Firstly, Randolph-Seng & Nielsen (2007) found that participants primed with religious words cheated significantly less on a subsequent task. More specifically, in their first experiment participants completed one of three scrambled-sentence tasks, either containing religious, sports-related, or neutral words. In the religious condition, ten religious words were selected for inclusion such as *heaven, bless, gospel* and *cross*. After the task, participants did a 'circle task' in which they were required to write specific numbers in small circles while sitting alone in a room with their eyes closed. An earlier study on this task (Leming 1980) had established an upper limit of an honest response, and participants scoring above this limit were categorized as cheaters. There was a significant difference in the rate of cheating, with 50% of participants in the sports priming group and 44% of participants in the neutral priming group being classified as cheaters, compared to none of the participants in the religious priming group. The study found no effect of participants' self-reported religiosity (Randolph-Seng & Nielsen 2007).

Secondly, Shariff & Norenzayan (2007) found that participants primed with religious words allocated more money to anonymous strangers in an economic game known as the 'anonymous dictator game'. In this study, participants in the religious priming condition completed a scrambled-sentence task containing five religious words (*spirit, divine, God, sacred,* and *prophet*). After completion of the task, participants took part in the economic game. Here they were told that they had been chosen as the giver in a decision-making task and were to take and keep as many of 10 one-dollar coins as they liked, whereas the number of coins left would be given to the receiver participant. Participants were also told that their identity would be hidden from the receiver. The study found a statistically significant difference between the groups, with participants in the religious-prime condition leaving considerably more money than controls (religious-prime: $M = 4.2$ ($SD = 2.7$); no-prime: $M = 1.8$ ($SD = 1.8$)). In this study too, self-reported religiosity did not seem to be associated with the degree of prosocial behavior (Shariff & Norenzayan 2007).

Finally, McKay *et al.* (2010) found that religious priming could promote costly punishment of unfair behavior, but only for a subset of their participants, namely those

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4), others have noted how religions as cultural systems can exploit such byproducts to adaptive effect and thus be a target of cultural selection (e.g. Pyysäinen & Hauser 2010).

who had previously donated to a religious organization. The study used a subliminal priming procedure, in which participants were exposed to priming words on a monitor so briefly that the participants had no conscious knowledge of seeing the words. There were four different priming treatments, containing words either related to religion (e.g. *divine* and *holy*), punishment (e.g. *revenge* and *punish*), religion and punishment (e.g. *divine* and *revenge*), or only words neutral in respect to these themes. After the priming procedure, participants played a punishment game in which player A chooses between two different allocations of a number of points between the two players, namely a fair (150/150) and an unfair (590/60) option. Afterwards, player B chooses either to accept the allocation or to spend points of her own share to punish player A's choice. Results were that punishment primes marginally statistically significantly increased punishment of the unfair choice for all participants, whereas the only significant effect of religious primes was for participants who had previously donated to a religious organization. In this case, however, there was a strong increase in punishment of the unfair choice (0.84 of a standard deviation, see Mckay *et al.* 2010, 3).

## 3. A study on religious priming and moral judgment

As briefly mentioned in the introduction, recent research in moral psychology has lead psychologists to an intuitionist approach to moral judgment, claiming that quick and automatic 'gut feelings' has the upper hand in our moral reasoning, and showing experimentally how situational influences can bend moral judgments in one or the other direction (see e.g. Haidt & Bjorklund 2008, Haidt & Kesebir 2010). Thus, work by Jonathan Haidt and others have shown that induced feelings of disgust (e.g. through exposure to a bad smell) can increase the severity of moral judgments in comparison with participants in a control condition (Schnall, Haidt, Clore & Jordan 2008, see also Wheatley & Haidt 2005), and a study by Schnall, Benton, and Harvey (2008) suggested that priming participants with words related to cleanliness and purity (e.g. *pure, washed, clean*) can make moral judgments less severe.[2] Paired with results from the literature just reviewed on behavioral effects of priming with religious words, I

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[2] In their study, participants rated various moral transgressions in six vignettes after completing a scrambled-sentence task, which is very similar to the procedure of the experiment presented in the present paper.

found it interesting to investigate whether priming with religious concepts could exert an influence on moral judgment.

In addition, I saw a problem in the current literature on religious priming, in that most studies seem to apply too monolithic an understanding of 'religious' words, apparently assuming that all religious concepts have the same priming effects. This seems like a questionable assumption, especially considering that one interpretation of the effects is in terms of a 'behavioral priming' hypothesis, stating that the activation of conceptual representations increases the likelihood of exerting behavior associated with these concepts. If that is true, then different types or combinations of religious words ought to have different influences on behavior, corresponding to participants' associations. Therefore I found it interesting to conduct an experiment using different religious priming conditions, as well as to compare participants' explicit associations from the prime words with the direction of the priming effect.

Finally, the relationship between priming effects of religious concepts and participants' personal religiosity is another unresolved question in the literature, with some studies finding little to no interaction (e.g. Randolph-Seng & Nielsen 2007 and Shariff & Norenzayan 2007) and others finding an interaction (e.g. McKay *et al.* 2010). I also wanted to do a study to collect more empirical data on this topic.

On these grounds, the hypotheses that my study tested were as follows:
1) Priming with religious words can influence moral judgment
2) The direction of the effect is dependent on participants' associations from the specific religious words being used: priming with words related to a punishing, wrathful God might lead to more severe moral judgments, whereas priming with words related to a forgiving Christian might lead to less severe moral judgments
3) The priming effect is (at least partly) independent of explicit religious beliefs and practices

## 3.1. Method

*Participants*
A total of 63 participants (mean age = 23.4 years ($SD$ = 6.0); 39 females and 21 males) were recruited for the study. 48 were recruited at The Faculty of Theology, Aarhus

University, whereas 15 were recruited at a dormitory for students in the city center of Aarhus ('KFUM Kollegiet'). 16 participants were either majoring or minoring in Theology, 33 in the Study of Religion, and 14 in various other subjects.

*Procedure and materials*

Participants recruited at The Faculty of Theology were tested in groups of various sizes at the university in silent classrooms and auditoriums. Participants recruited at the dormitory were tested in silence in groups at the dormitory. The whole experiment was a pen-and-paper task, with each participant completing the experiment in one session.

Before beginning the experiment, participants were informed by me that I had studied Psychology as my minor, and was doing a BA-project related to Psychology, in which I collaborated with some people at the Department of Psychology. Therefore the study would contain a number of tasks testing different cognitive skills, including mental rotation and language understanding. Since most participants were tested at the Faculty of Theology and I did not want the participants to know from the outset that the experiment was related to religion, this introduction served as a cover story. (The introduction can be found as appendix A).

Participants first completed a scrambled-sentence task adapted from Bargh, Chen & Burrows (1996), which served as the priming procedure. The task contained 14 items each consisting of five words and the participants were required to use four of the words to make a complete sentence (see appendix B for an example). Participants randomly received one of three scrambled-sentence tests containing words either related to a punishing God (the 'punishing' condition)[3], a forgiving Christian (the 'forgiving' condition)[4] or exclusively neutral words. Prime words were chosen on the basis of words used in previous research literature (Randolph-Seng & Nielsen 2007; Shariff & Norenzayan 2007), as well as from asking 10 different students at The Faculty of Theology to list which words best fitted their image of the 'punishing God', as well as their image of a 'forgiving Christian'.

Immediately after the scrambled-sentence task participants rated five moral vignettes concerning various moral transgressions (see appendix C): adultery (cheating on one's wife at an office party at Christmas), nepotism (using one's political connections to get one's daughter ahead in the queue for an apartment), stealing (stealing a book at the

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[3] The seven words selected for the punishing condition were: punishment (*straf*), day of judgment (*dommedag*), commandments (*bud*), God (*Gud*), sin (*synd*), almighty (*almægtig*), and hell (*helvede*).

[4] The seven words selected for the forgiving condition were: forgiving (*tilgivende*), Christian (*kristen*), priest (*præst*), mercifulness (*barmhjertighed*), the church (*kirken*), love of one's neighbor (*næstekærlighed*), and prayer (*bøn*).

library), tax cheating (falsely stating that personal expenses are business expenses), and résumé lying (putting false information on one's résumé, thereby getting a job on false qualifications)[5]. Participants rated the actions described in the vignettes on a scale from 1 (*not morally wrong*) to 9 (*extremely morally wrong*), with the 5-point marked 'morally wrong'. The order in which participants read and rated the moral vignettes was randomized.

Subsequently, participants indicated their feelings at the moment for the following items: *relaxed, angry, happy, sad, afraid, depressed, disgusted*, and *confused*. Ratings were given on a visual analog scale labeled "don't feel at all" at one end and "feel very much" at the other (see appendix D), which was translated into a score from 1 to 21. The measure was adapted from Schnall, Benton & Harvey (2008) and was intended to see if the different conditions on the scrambled-sentence task induced any specific mood.

Afterwards, participants did a filler task consisting of a few mental rotation tasks and some simple arithmetic tasks (see appendix E). These tasks were intended to make participants think of something completely different and possibly clear out priming influences (see Randolph-Seng 2007, 10) before the second half of the experiment.

After the filler task, participants were randomly presented with the prime words used in either the 'punishing' or 'forgiving' scrambled-sentence task, and were asked to imagine a person from all the words combined (see appendix F). They were then asked to rate the moral vignettes from the first half of the experiment once more, but this time from the perspective of the imagined person. That is, they were to conjure up an image of a person on the basis of prime words used in one of the religious priming conditions and rate the vignettes as they thought this person would do it.

Subsequently, participants were probed for suspicion by asking whether they believed any of the tasks had influenced their behavior on other tasks, what they thought the purpose was of the tasks of the experiment, and if there was anything they found particularly odd about the experiment (see appendix G).

After that, participants filled out a questionnaire concerning their image of God (the 'Questionnaire God Image' (QGI) adapted from Jonker et al. 2008, see appendix H), consisting of 33 items concerning feelings towards God and statements regarding

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[5] Three of the vignettes were adapted from or inspired by previous research, whereas two vignettes were created for the experiment. The vignettes on tax cheating and résumé fraud were adapted from Greene et *al.* 2008; the vignette on nepotism where loosely inspired by Wheatley & Haidt 2005.

God's actions, with participants rating each item on a Likert scale from 1 (*not applicable*) to 5 (*completely applicable)*. The scale condensates to six dimensions, namely 1) *positive feelings*, 2) *anxiety*, or 3) *anger* in regards to feelings towards God, and 4) *supportive,* 5) *ruling/punishing*, or 6) *passivity* in regards to God's actions. Participants were instructed to fill out the questionnaire even if they were not themselves religious, arguing that they might have a personal image or idea of God even if they did not believe in the existence of this God.

Finally, participants filled out demographic information (gender, age, and direction of study), rated their belief in the existence of God (on a scale from 1 to 9), their frequency of religious practice on a public (e.g. church going) as well as private (e.g. prayer) dimension, and listed which, if any, religious group they identified themselves with (see appendix I).

Participants were thanked for their participation and put their email addresses on a list for a full debriefing after all the experimental data had been gathered.

See Table 1 (p. 43) for a schematic overview of the procedure.


## 3.2. Results[6]

### 3.2.1. Various results

The key question in the suspicion probe was whether participants were aware of the connection between the scrambled-sentence task and their subsequent responses on the moral judgment. 3 participants expressed such awareness and were therefore dropped from analysis.

Mean completion time was 23.3 minutes (*SD* = 4.7). Neither completion time, location of participation (university or dormitory), or gender seemed to have any noteworthy influence on results.

When grouping participants on basis of their direction of study ('Theology', 'Study of Religion', and 'other') there was some variation between groups in average scores on religious variables and average moral judgment. This systematic variation associated with direction of study was ignored since the groups of participants assigned to each priming condition ('punishing', 'forgiving' or 'neutral') did not differ significantly from each other with regards to direction of study, that is to say, no condition

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[6] Because of space limitations on this paper, various results of potential interest are not reported. Requests for additional results or calculations can be submitted to ulrik.lyngs@gmail.com

contained significantly more participants studying e.g. Theology than any other condition.

Regarding the mood measure, one-way analyses of variance (ANOVAs) were done on the individual items with priming condition as a factor to test whether the priming had an effect on emotion ratings. No group differences were found on any of the emotion ratings ($p \geq .547$). Thus, the different priming conditions did not appear to induce any specific mood.

### 3.2.2. Priming condition and participants' own moral judgment

Participants' mean ratings of the moral vignettes are shown next to the bar graphs on the next page illustrating the distribution of participants' ratings in each of the conditions on each of the vignettes (Fig. 1), but can also be seen in table 2 (p. 44).
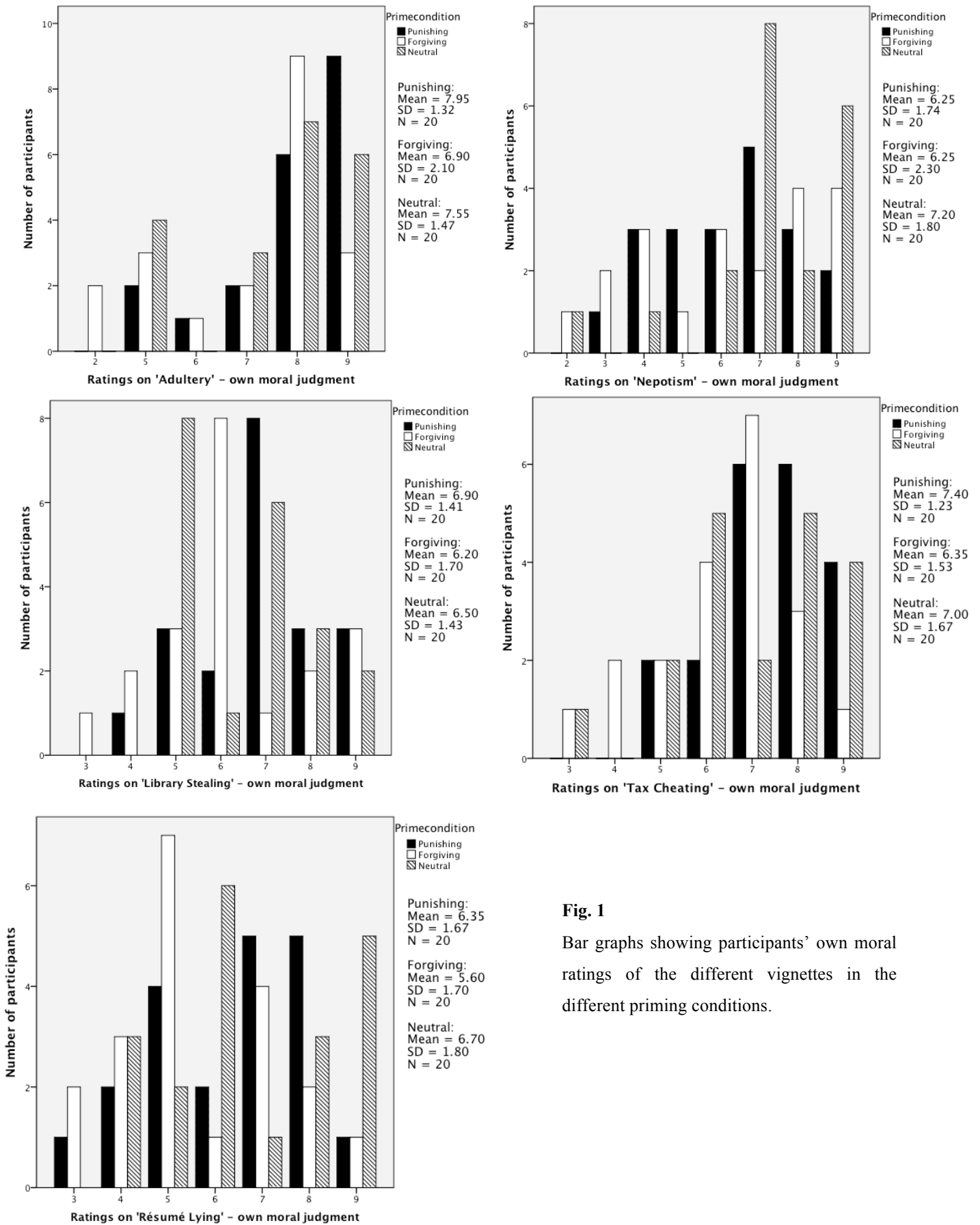
One-way ANOVA was conducted on the sample means[7] with priming condition as a factor. There was a main effect of priming condition (punishing: $M = 6.97$, $SD = 0.71$; forgiving: $M = 6.26$, $SD = 1.17$; neutral: $M = 6.99$, $SD = 1.17$), $F(2, 57) = 3.2$, $p = 0.048$, $\eta^2 = 0.10$, with participants in the 'forgiving' condition on average making slightly less severe moral judgments than did participants in both the 'punishing' and 'neutral' conditions.

When analyzed individually, no single vignette showed a significant difference between priming conditions ($p \geq .087$, see table 3 (p.44)). Thus, the statistically significant main effect showing itself between conditions on participants' sample means seems to be a product of all the vignettes combined, rather than any single vignette.

The variation in ratings was considerable, as can be seen in the bar graphs on the next page.

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[7] By 'sample mean' I mean the mean rating of all vignettes collapsed.

**Fig. 1**

Bar graphs showing participants' own moral ratings of the different vignettes in the different priming conditions.
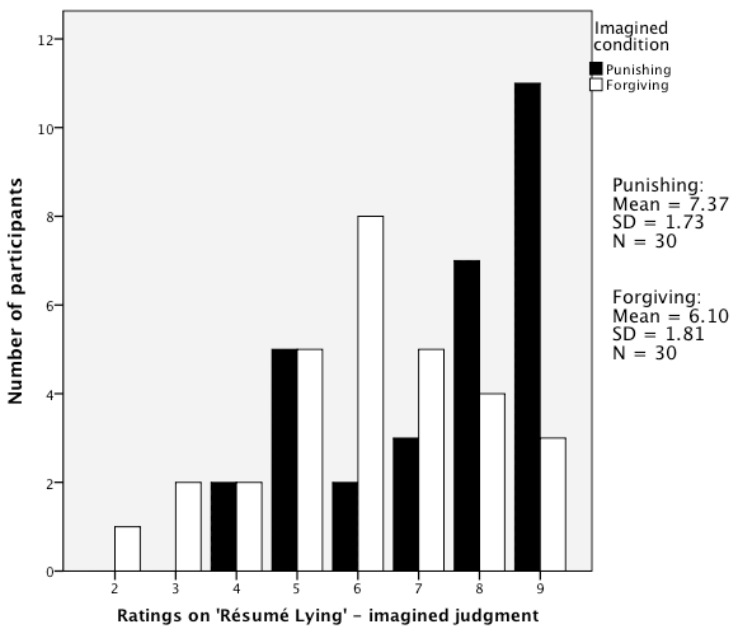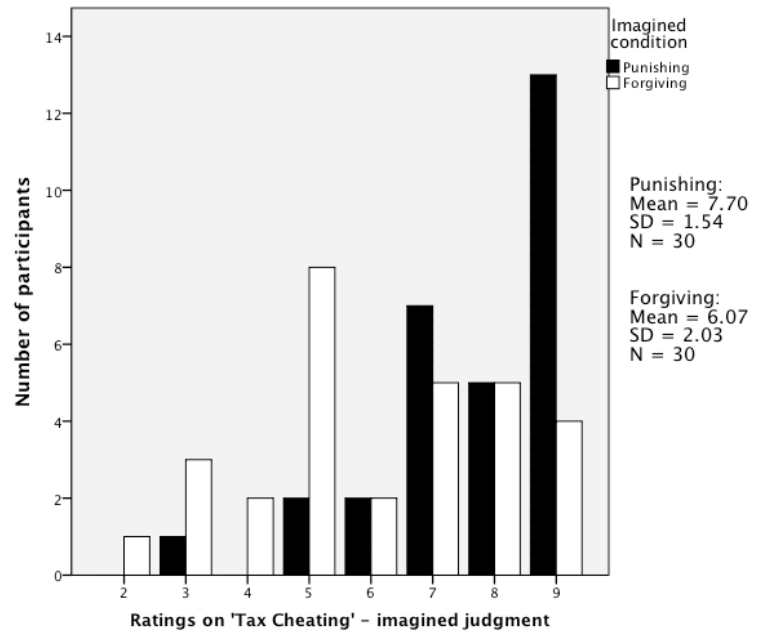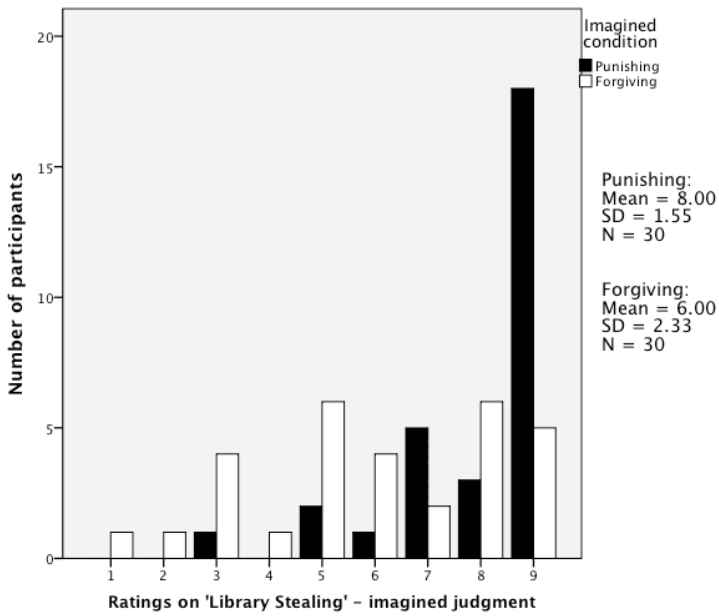
### *3.2.3. Priming condition and imagined moral judgment*

First, one-way ANOVA was done on the sample means of both the 'punishing' and 'forgiving' perspective with priming condition (punishing, forgiving, or neutral) as a factor. There were no statistically significant differences between groups in ratings given from neither the 'punishing' nor the 'forgiving' perspective ($p \geq .321$), which suggests that participants' priming condition did not have any significant influence on ratings given from the imagined perspective. Consequently, priming condition was ignored in calculating the mean ratings of participants' imagined moral judgment.

Participants' mean ratings of the moral vignettes are shown next to the bar graphs on the next page illustrating the distribution of participants' ratings in each of the imagined conditions on each of the vignettes (Fig. 2), but can also be seen in table 4 (p. 45).

One-way ANOVA was conducted on the sample means with imagined condition as a factor. There was a main effect of imagined condition (punishing: $M = 7.60$, $SD = 1.35$; forgiving: $M = 6.39$, $SD = 1.49$), $F(1, 58) = 12.32$, $p = 0.0009$, $\eta^2 = 0.18$. Thus, participants on average made less severe moral judgments from the 'forgiving' perspective than from the 'punishing'.

When analyzed individually, ratings on four of the vignettes were statistically significantly different between imagined conditions, see table 5 (p. 45). Thus, participants made significantly less severe judgments from the 'forgiving' than 'punishing' perspective on all vignettes, except for 'nepotism' (though the difference between means on this vignette were in the same direction).

Once again, variation between participants was considerable, as illustrated by the bar graphs on the next page. As we shall come back to, this variation is important, since it gives us an idea of what priming effects to expect on participants' own moral judgment.
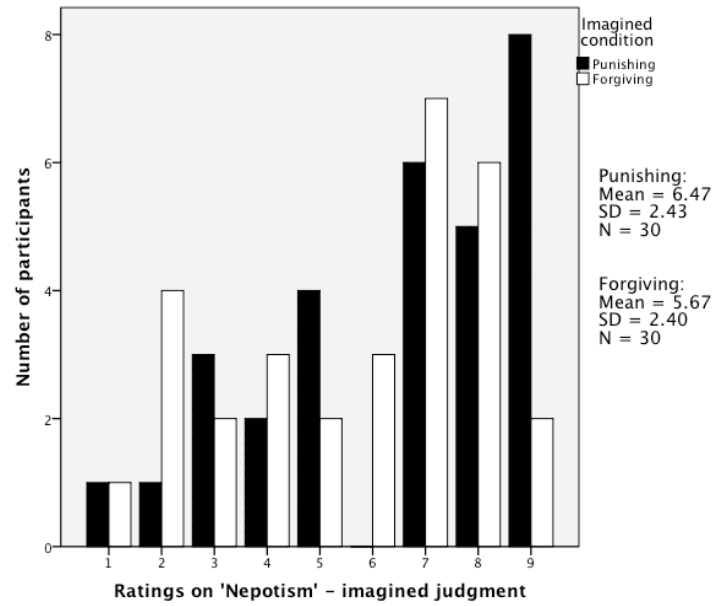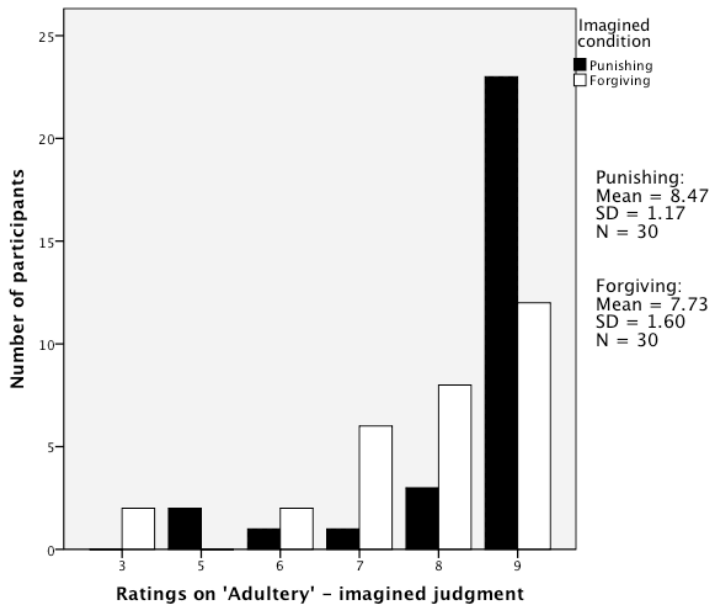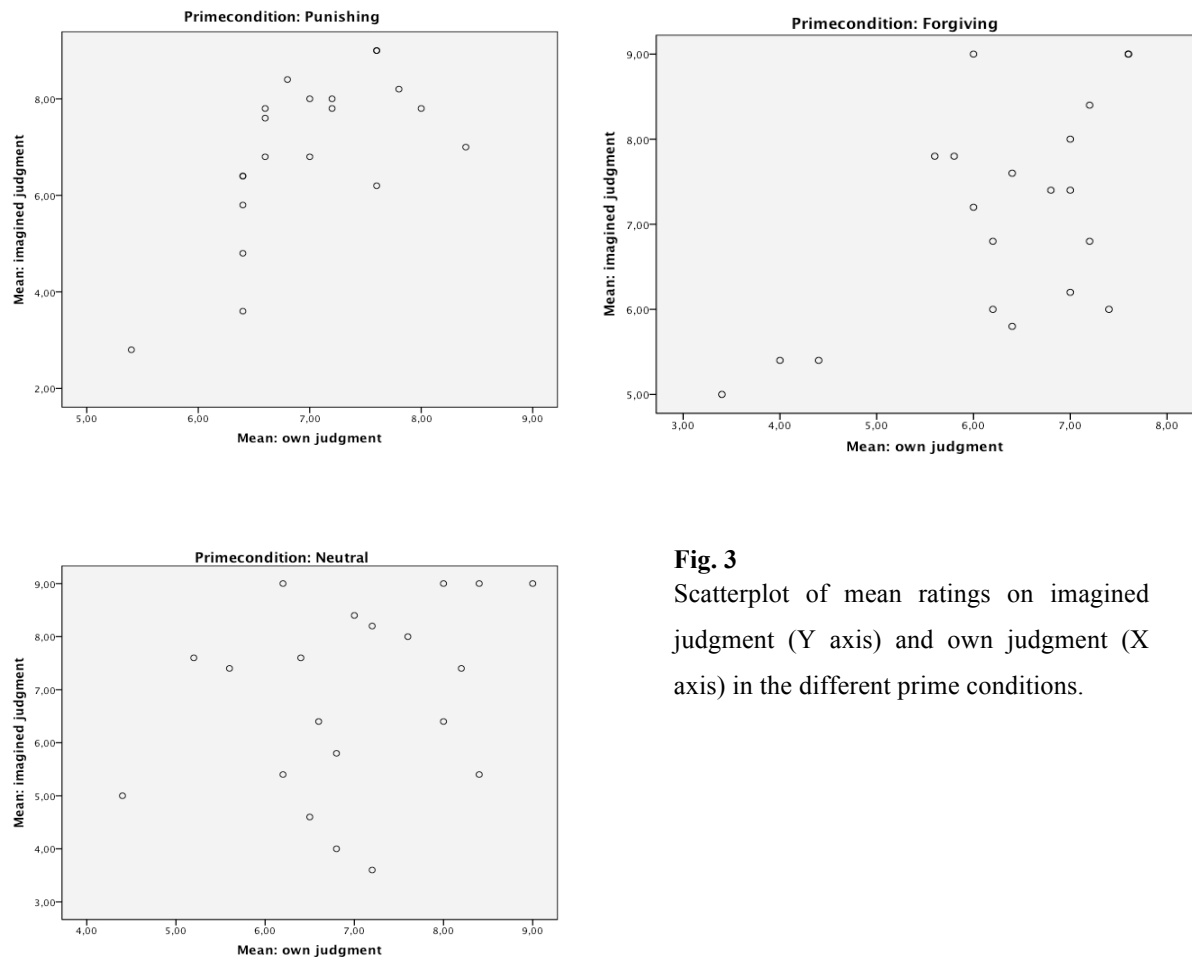
**Fig. 2**

Bar graphs showing participants' imagined moral ratings of the different vignettes in the different priming conditions.

Finally, an interesting relation showed itself between priming condition, the sample mean of participants' own moral judgment, and the sample mean of participants' imagined moral judgment. See Fig. 3.



**Fig. 3**
Scatterplot of mean ratings on imagined judgment (Y axis) and own judgment (X axis) in the different prime conditions.

For participants in both the punishing and the forgiving priming condition, there was a significant relationship between the sample mean of their own moral judgments and the sample mean of their imagined moral judgments, disregarding imagined condition (punishing: $r = 0.66$, $p = .0017$; forgiving: $r = 0.60$, $p = .0051$). This was not the case in the neutral condition ($r = 0.30$, $p = .198$). The fact that mean ratings on own and imagined judgments were then well correlated for participants in the religious priming conditions does not necessarily mean that these ratings have the same value (if all participants rated, say, twice as high on imagined judgment as they did on own judgment, the ratings would be perfectly correlated, but significantly different from each other). *T*-test was therefore done, showing that for participants in the 'punishing' priming condition there was no significant difference between the sample mean of own moral judgment and sample mean of imagined moral judgment, whereas this

difference was highly significant for participants in the 'forgiving' priming condition (punishing: $t(19) = 0.205$, $p = .840$; forgiving: $t(19) = -3.45$, $p = .0027$)

When including participants' imagined condition in the analysis, the correlations look as in table 6 (p. 46). I should emphasize strongly that including imagined condition reduces the number of participants in each category of analysis to 10, making the risk of results being due to random individual differences between participants rather than experimental conditions very high. In spite of this, it does yield some very interesting explorative results:

First, for participants in the neutral priming condition, mean ratings of their own moral judgments were not at all correlated with their ratings from the 'forgiving' perspective (see [1] in the table). For participants in the 'forgiving' priming condition, this same correlation was statistically significant ([2]), and there was no significant difference between their own and their imagined moral judgments, as measured by the $t$-test ([3]). Second, in relation to imagined moral judgment from the 'punishing' perspective, the correlation between own moral judgment and imagined moral judgment was statistically significant for participants in both the 'punishing' and 'neutral' priming condition ([4] and [5]), but only for participants in the 'punishing' priming condition was there no significant difference between the ratings ([6], cp. [7] and [8]).

We shall return to how these results might be interpreted.

### 3.2.4. Interactions with religious beliefs and practices

One-way ANOVAs were done to assess whether there were any important differences between participants in the three priming conditions on religious variables, namely belief in the existence of God, scores on the QGI, and religious practices. No such differences reached statistical significance.

Subsequently, correlation analyses were done to investigate possible relations between religious variables and participants' own moral judgment. Results showed that score on the passivity dimension of the QGI was negatively correlated with the grand mean[8] of participants' own moral judgment, $r = -.2816$, $p = .0293$. That is, the higher participants scored on the 'passivity'-dimension of the QGI, the less severe were their own moral judgments on average, independently of priming condition. No other correlation reached statistical significance. Thus, except for score on the 'passivity'-

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[8] That is, participants' mean score on all vignettes collapsed, disregarding priming condition.

dimension of the QGI, neither score on the QGI, existence in the belief of God, or frequency of public or private religious practice were statistically significantly related to participants' own moral judgment. Neither mean ratings on moral judgments in general, nor the differences between groups on basis of experimental condition then seem to be accounted for by participants' image of God as measured by the QGI (except for the 'passivity'-dimension), explicit belief in the existence of God, or religious practices.

As a side note, it is interesting to correlate scores on belief in existence of God with participants' answers on the QGI, since this gives us a better idea about what participants' score on belief in the existence of God actually tells us. This is an important topic, but space limitations unfortunately do not allow us to follow this question in the present paper.

## 3.3. Discussion of results

To sum up, results showed a statistically significant main effect of priming condition on sample means of participants' own moral judgments with participants in the 'forgiving' condition on average making less severe moral judgments than participants in both the 'punishing' and 'neutral' conditions. Even though no differences between priming conditions were statistically significant when analyzing the individual vignettes, the existence of the main effect is tentatively supported by correlations between sample means of own and imagined moral judgment: The ratings of participants with 'forgiving' as both priming condition and imagined condition were statistically significantly correlated between own and imagined moral judgment with these ratings not differing significantly from each other, which was not the case for participants in the 'neutral' priming condition.

On the other hand, compared to participants in the 'neutral' condition, the 'punishing' priming did not seem to make moral judgments more severe. However, correlations between sample means of own and imagined moral judgment showed that participants with 'punishing' as both priming condition and imagined condition had statistically significant correlations between own and imagined moral judgment, with these ratings not differing significantly from each other. This was not the case for participants having either 'forgiving' or 'neutral' as priming condition and 'punishing' as imagined condition, for whom there was a significant difference between own and imagined

ratings. As I noted earlier, these correlations are very insecure because of the small sample size, but they do tentatively suggest some effect also of the 'punishing' priming condition, even though this did not on average manifest itself as more severe moral judgments, possibly because the 'default' moral rating on most vignettes was already quite severe moral judgments, as indicated by the ratings of participants in the 'neutral' priming condition.

Next, participants' ratings in the imagined condition give us information about their explicit associations from the prime words. Results showed that the 'forgiving' perspective was associated with less severe moral judgments than the 'punishing' perspective, both on the sample mean and on the individual vignettes (only on 'nepotism' did the difference between means not reach statistical significance). To the extent that the possible effects of the prime words included in the scrambled-sentence test are in alignment with participants' explicit associations, the scores on imagined moral judgment give us an idea of what differences to look for between conditions.[9] Thus, the main effect of less severe moral judgments in the 'forgiving' priming condition fits with the sample mean of imagined moral judgments from the 'forgiving' perspective. Just as importantly, however, the imagined moral ratings tell us something about the variation in participants' associations with the prime words, both between the different vignettes and between individual participants. For instance, when considering mean ratings both the 'punishing' and 'forgiving' perspective seem to be associated with extreme moral condemnation of adultery, whereas they are both associated with relatively more tolerance towards nepotism than participants' own moral judgment in the neutral condition. If we then zoom in on the data distribution on e.g. the nepotism vignette, we can see that participants apparently disagree on how this vignette should be judged from the 'punishing' perspective, with participants being split in two, some thinking that it would be seen as minor a transgression and some thinking that it would be condemned severely. Depending of course on the research question of concern, this variation in participants' associations with the prime words

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[9] It would be obvious in a follow-up study to use some sort of Implicit Association Test (IAT) rather than the imagined moral judgment as a measure of participants' associations from the prime words, since participant's explicit associations are not necessarily identical with their implicit (i.e. not conscious) associations, which are presumably responsible for the priming influences.

might be more interesting than mean values, since the priming effects cannot be separated from participants' individual perception of the prime words.

Finally, scores on religious variables did not differ significantly between participants in the different experimental conditions; neither did any religious variable have any significant correlations with moral judgment for participants in any of the experimental conditions (the negative correlation across all participants with scores on the 'passivity'-dimension of the QGI being the only exception). Thus, the priming effect seems to be at least partly independent of religiosity. I agree, however, with McKay *et al.* (2010, 4) that the effect of activating a certain set of cultural norms or concepts through priming might be stronger for those who have internalized those norms, and thus the relation between priming condition, own moral judgment, and imagined moral judgment might be stronger for participants who hold strong personal beliefs related to the prime words. Unfortunately, the sample size of my experiment has not allowed me to follow this adequately, as it would require too fine a subdivision of participants to give statistically reliable results.

## 3.4. General discussion

### 3.4.1. Explanations – behavioral priming vs. the supernatural watcher

In the religious priming literature, two different possible proximate explanations are typically discussed to account for the experimental results, namely a 'behavioral priming' explanation and a 'supernatural watcher' explanation (e.g. McKay et al. 2010 and Shariff & Norenzayan 2007). The former explanation is consistent with the evidence showing that activation of conceptual representations increases the likelihood of behaviors consistent with those representations. Thus, much as participants in the earlier mentioned study by Bargh, Chen and Burrows (1996) walked more slowly down a corridor when primed with words related to the concept of the 'elderly', religious primes might lead to behavioral effects such as increased fairness, honesty, etc., by virtue of being semantically associated with such behaviors (McKay et al. 2010, 3).

The second explanation, the 'supernatural watcher' account, claims that religious primes can activate the notion that a supernatural agent is observing one's behavior. Thus, much as different studies suggest that subtle cues that one is being watched can affect giving behavior (see e.g. Haley & Fessler 2005, in which almost twice as many

participants gave money to their partners in an anonymous economic dictator game compared to controls when using a computer displaying eyespots), religious primes might function as inputs for mental mechanisms detecting when one's behavior is being observed, thereby increasing prosocial behavior (McKay et al. 2010, 3; see Shariff & Norenzayan 2007).

These two explanations are not mutually exclusive, as McKay *et al.* notes – multiple psychological mechanisms may be operative and even mutually reinforcing (2010, 4). In addition I will argue that these explanations also differ on an important point. Whereas the 'behavioral priming' hypothesis suggests great cultural and individual variation as different cultures and individuals might assign different meanings and behavioral associations to 'religious' concepts, the 'supernatural watcher' hypothesis suggests universal priming effects of concepts related to omniscient gods, in so far as such concepts can activate (presumably universal) cognitive mechanisms for detection of observation.

In considering these explanations it is a fallacy, however, to try to condense 'religious' concepts into an essence. 'Religious' concepts show both immense cultural variations as well as important commonalities. It is true that one of the most important common traits is that religious concepts are often about supernatural agents with full access to 'strategic information', that is, information that regulate social interaction (see Boyer 2001), which lends credibility to the 'supernatural watcher' account. This feature, however, might be more important when doing experimental studies where any reduction of anonymity presumably has importance for the dependent variable in question, such as the studies earlier mentioned on cheating (Randolph-Seng & Nielsen 2007) or cooperation in an anonymous economic dictator game (Norenzayan & Shariff 2007). In my study the dependent variable was participants' more distanced moral judgment on five moral vignettes with participants sitting in groups while doing the task. In this setting, the potential for some religious concepts to invoke a feeling of observation presumably did not make too much of a difference compared to the importance of the behavioral priming from participants' associations with the words. Therefore, I favor the 'behavioral priming' hypothesis in interpreting the results of the experiment presented in this paper.

### 3.4.2. How can 'mere words' have priming effects?

As described by John A. Bargh (2006), the amount of empirical findings gathered in the social psychological priming literature over the past 25 years has outstripped the theoretical understanding of what is going on in such experiments. For our purpose we will focus on Bargh's suggestion that Lakoff & Johnson's model of complex conceptual structures (2003 (orig. 1980)) might hold an important key to how the multiple effects of primes occur (Bargh 2006). In their seminal book Lakoff & Johnson argued that we think metaphorically, that is to say, we systematically use inference patterns from one conceptual domain to reason about another conceptual domain. According to their theory, concepts are not defined in an isolated fashion, but in terms of their roles in natural kinds of experience (Lakoff & Johnson 2003, 125). Our concepts are *experiential gestalts* or complex conceptual structures that emerges directly from interaction with and in our environment, an interaction upon which our bodies and our physical and cultural environment imposes a structure. The first complex conceptual structures to develop are those that come from our direct experience as infants and young children, such as one's orientation in space. Because many other important concepts are either abstract or not clearly delineated in our experience (such as the emotions), we get a grasp on them by means of basic concepts that we understand in clearer terms, and thus other conceptual structures are scaffolded onto more basic structures (e.g. 'I'm feeling *up* today') (ibid., 115; Bargh 2005, 154).

The point in our context is that Bargh notes how Lakoff & Johnson's theory gives a plausible frame for explaining how priming of a single concept (such as *generous*) can account for multiple effects: What is primed is not merely a single concept, but a complex conceptual structure, and behavioral effects can be expected to be found in the entire domain of experience giving rise to the concept (Bargh 2006, 152). Furthermore, Bargh suggests that conceptual structures developed earlier should prime those that are later scaffolded onto them by analogy (Bargh 2006, 152). Concepts are, then, not 'mere words' but taps into complex conceptual structures, and the various effects found in the priming literature should be seen in this light.

### 3.4.3. The importance of goals, and individual and cultural differences

People are, of course, not just passive 'priming machines', automatically assimilating behavior to every single environmental cue available. First of all, one's current goal or motivational state plays a main role in deciding whether an environmental stimulus

will exert an influence on behavior (Bargh 2006, 159; cf. Bargh, Chen, & Burrows 1996, 240). One's current goal helps drive selective attentional processes, with priming influences more likely to occur among selected than nonselected information, and a motivational state corresponding to the priming stimulus can furthermore be a prerequisite for priming to occur (see e.g. Strahan, Spencer & Zanna 2002). Just as importantly, there is considerable individual variation in the degree that situational influences induce e.g. gut feelings in participants and in whether participants follow or override such feelings in their current task (Haidt & Kesebir 2010, 805).

Finally, it follows from an understanding of concepts in terms of 'experiential gestalts' that there is plenty of potential variation between individuals' and cultures' understanding of the concept under investigation, which is a particularly important point to keep in mind regarding possible influences of 'religious' primes, as earlier noted. As Lakoff & Johnson states, complex conceptual structures emerges from natural kinds of experiences that are a product of our body, our interactions with the physical environment, and our interactions with other people socially and culturally. This means that some concepts may be universal, emerging naturally in all people's ordinary interactions with their physical, cultural, and social environments, while others will vary from culture to culture (2003, 117f). It might then be justified to have mean scores of participants as the primary concern when studying priming effects of concepts that are presumably relatively universal, but when it comes to religious priming studies, we have to think twice before blindly focusing on mean values.

Some religious priming studies have been making the assumption that religious words is something in and by itself, searching for priming effects of religious words without paying much attention to the broad scope of different words that can be termed 'religious', or to the meaning different religious words can have for participants. As an example, the earlier mentioned study by McKay *et al.* (2010) tried to investigate whether subliminally presented religious primes can increase participants' punishment of unfair behavior, and found a such effect for a subset of participants, namely for those who had previously donated to a religious organization. Rather than interpreting this result as an effect on those participants of 'religious' words as such, I will argue that it should be seen only as an effect of the particular selection of words. McKay *et al.* might have found an effect in the opposite direction on the same subset of participants had they also had a 'religious-forgiving' condition, as the results of my experiment on moral judgment suggests.

Furthermore, no studies have shown much interest in the potentially just as important in-group vs. out-group distinction in this matter. Most studies have been done in an American context with 'religious' words generally being equated with 'words related to Christianity', and it is very likely that the discovered priming effects of 'religious' words had been different, had a study used e.g. prime words associated with Islamic beliefs on the same sample of participants.

Thus, the priming effects depend on the chosen combination of religious concepts as well as on the meaning they have for the individual. This is of course also true for other concepts, but I will argue that the breadth of what concepts can be termed 'religious' and of what individual meanings can be assigned to these concepts, potentially makes the diversity in results more interesting than the mean.

## 4. Conclusion

Although I have emphasized the variation in data, I did find that participants primed with words related to a 'forgiving Christian' on average made less severe moral judgments than did both participants primed with words related to a 'punishing God' and participants receiving only neutral words. This main effect was in agreement with participants' explicit associations when imagining a person from the prime words, as indicated by their average ratings in the imagined moral judgment, and furthermore seemed to be independent of participants' scores on religious variables. On the other hand, there were no statistically significant differences between the moral judgments of participants in the neutral and the 'punishing' condition, suggesting that the 'punishing' priming did not make participants' judgments more severe. However, correlation scores tentatively suggests some priming effect also of the 'punishing' priming, since participants' own moral judgments in this priming condition were on average not differing significantly from their ratings given from the imagined 'punishing' perspective, which was not the case for participants in neither the 'forgiving' nor neutral priming condition.

I have discussed the 'behavioral priming' and the 'supernatural watcher' explanation, as well as how Lakoff & Johnson's model of complex conceptual structures is a plausible theoretical frame for interpreting conceptual priming effects. In light of their model, I have also noted how a focus on mean scores in priming studies might be justified when investigating concepts that are presumably universal, that is, emerge naturally in most people's interactions with their physical, cultural, and social

environments, whereas we have to think twice before exclusively going for the mean when it comes to 'religious' priming studies. Thus, I have criticized other studies for searching for universal priming effects of 'religious' words, as the priming effects depends on the chosen combination of 'religious' concepts as well as on the meaning they have for the individual.

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# 6. Appendixes: Experimental materials

*Appendix A: introduction to participants*

"Tusind tak for at I gerne vil deltage.

Jeg har læst psykologi på sidefaget og laver et psykologisk BA-projekt. Vi er nogle stykker på psykologi, som hjælper hinanden med hinandens projekter, så vi kan få en bredere kreds af respondenter. Det er derfor en række lidt forskellige opgaver, som jeg vil bede jer om at udføre. Det tester forskellige kognitive evner, som for eksempel sprogforståelse og mental rotation, men også en række andre ting.

I skal udføre opgaverne i kronologisk rækkefølge. De skulle gerne være selvforklarende, men hvis der er noget I ikke forstår undervejs, så ræk hånden op. Så kommer jeg hen til jer og hjælper.

Hele besvarelsen tager omkring 20 minutter."

## *Appendix B: scrambled-sentence task (punishing condition)*
**Instruktioner**:

Lav en grammatisk korrekt 4-ordssætning ud fra hvert af nedenstående sæt af ord, og skriv den i den ledige plads til højre. Ligesom det er vist i eksemplet nedenfor. Når du har forstået instruktionerne, må du gerne gå i gang.

Eksempel:

blev   vente   forsinket   han   lidt          <u>**han      blev      lidt**</u>

<u>**forsinket**</u>

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
-

1. træet grene kop har mange

   _____

2. hans tung straf streng var

   _____

3. høflig er kort altid hun

   _____

4. hun for råbte interessant helvede

   _____

5. bud hun hans fulgte bord

   _____

6. er kjole prikket nylon pigens

   _____

7. rød lækker en er bøf

   _____

8.  som ville eksamen dommedag føltes

_____

9.  synd det hest meget var

_____

10. tilpas temperaturen var du meget

_____

11. den hund røde Gud lille

_____

12. skole bil cyklede jeg til

_____

13. haven leger vind i børnene

_____

14. følte peber sig almægtig han

_____

## *Appendix C: moral vignettes*

Søren er 31 år og har siden færdiggørelsen af sin uddannelse på Handelshøjskolen arbejdet i et reklamefirma. Han blev for seks år siden gift med den kæreste, som han har haft siden starten af gymnasiet, men de har endnu ingen børn. En af Sørens kollegaer på arbejdet er en meget attraktiv kvinde. Denne kvinde flirter ofte med Søren på jobbet, og de ved begge, at hun vil være villig til at have en affære med ham. Ved firmaets julefrokost bliver de begge meget fulde, og er sammen på Sørens kontor.

Hvor moralsk forkert er Sørens handling? (sæt ring om et tal)

| Ikke moralsk forkert | | | | Moralsk forkert | | | | Ekstremt moralsk forkert |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Jens er politiker og sidder i Folketinget for et venstreorienteret parti. En af hans politiske mærkesager er, at det skal være lige let for alle studerende at finde en bolig, uanset forældrenes økonomiske status. Jens har en datter, der gerne vil flytte til København for at studere på universitetet. Hun er lige kommet hjem efter en lang udlandsrejse, og derfor er hun alt for sent begyndt at lede efter et sted at bo. Jens trækker derfor på sine politiske forbindelser og sørger for, at hans datter kan springe over ventelisten til et lækkert og nyt boligkompleks, der oveni købet er billigt og centralt beliggende.

Hvor moralsk forkert er Jens' handling? (sæt ring om et tal)

| Ikke moralsk forkert | | | | Moralsk forkert | | | | Ekstremt moralsk forkert |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Angelique er udvekslingsstuderende og har svært ved at få sine penge til at slå til i Danmark. Den lejlighed, hun efter meget besvær har anskaffet sig, er alt for dyr, men det var den eneste hun kunne finde. På studiet følger hun et fag, hvor der er en meget vigtig bog, som underviseren siger, at de *skal* anskaffe sig. Bogen er imidlertid meget, meget dyr og Angelique ved ikke, hvordan hun skal få råd til den. Hun har prøvet at finde den brugt uden held. Til sidst går hun på biblioteket, og finder den her. Mens ingen kigger, piller hun stregkoden af, stopper bogen i tasken, og tager den med hjem.

Hvor moralsk forkert er Angeliques handling? (sæt ring om et tal)

| Ikke moralsk forkert | | | | Moralsk forkert | | | | Ekstremt moralsk forkert |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Peter har en lille virksomhed, men har svært ved at få sin personlige økonomi til at hænge sammen. Han finder ud af, at han kan betale mindre i skat ved at lade som om, at nogle af hans personlige udgifter er udgifter til virksomheden. Eksempelvis kan han trække sit stereoanlæg i stuen fra i skat, hvis han overfor skattevæsenet siger, at anlægget bliver brugt i virksomhedens kunde-lounge. Han beslutter sig for at trække alle sine nye møbler i stuen fra i skat, idet han vil sige til skattevæsenet at de har været en nødvendig udgift til hans private virksomhed.

Hvor moralsk forkert er Peters handling? (sæt ring om et tal)

| Ikke moralsk forkert | | | | Moralsk forkert | | | | Ekstremt moralsk forkert |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Anne har på det seneste arbejdet hårdt for at finde et job, men uden resultat. Hun overvejer, om ikke det ville være lettere at finde et job, hvis hendes cv var mere imponerende, og hun beslutter sig efter længere tids overvejelser for at skrive falsk information på sit cv. Efter et stykke tid bliver hun ansat i et job, hvor hun bliver valgt frem for andre ansøgere, der egentlig var mere kvalificerede end hende.

Hvor moralsk forkert er Annes handling? (sæt ring om et tal)

| Ikke moralsk forkert | | | | Moralsk forkert | | | | Ekstremt moralsk forkert |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

### *Appendix D: Mood measure*
**Instruktioner**:

Angiv, hvordan du har det lige nu, på disse områder: (sæt kryds et sted på linjen)


Føler du dig...



### … afslappet?

*Slet ikke*                                                                 *I meget høj grad*
  |- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -|



### … vred?

*Slet ikke*                                                                 *I meget høj grad*
  |- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -|



### … glad?

*Slet ikke*                                                                 *I meget høj grad*
  |- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -|



### … trist?

*Slet ikke*                                                                 *I meget høj grad*
  |- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -|

**… bange?**

*Slet ikke*                                                                                    *I meget høj grad*

|- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -|
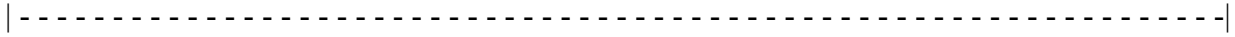
**… nedtrykt?**

*Slet ikke*                                                                                    *I meget høj grad*

|- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -|
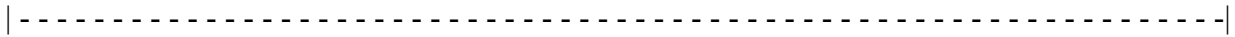
**… frastødt?**

*Slet ikke*                                                                                    *I meget høj grad*

|- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -|
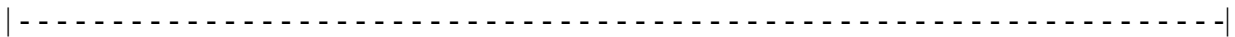
**… forvirret?**

*Slet ikke*                                                                                    *I meget høj grad*

|- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -|
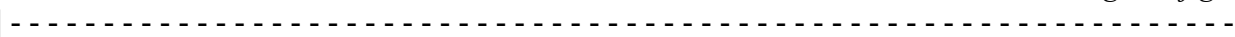
***Appendix E: Filler task***
**Instruktioner**:

Denne opgave handler om mental rotation. Nedenfor er der tre figurpar. Overvej for hvert par, om den venstre figur kan roteres, så den bliver identisk med den højre. Sæt kryds ud for det rigtige svar.
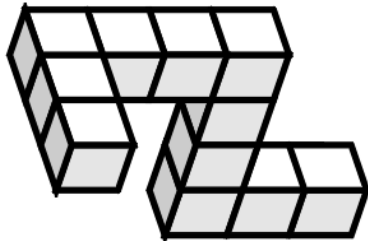
A
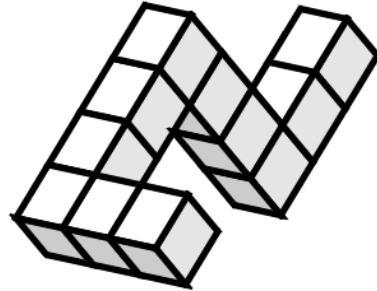
Identiske? __ ja        __ nej
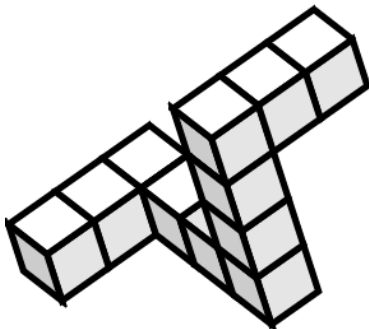
B
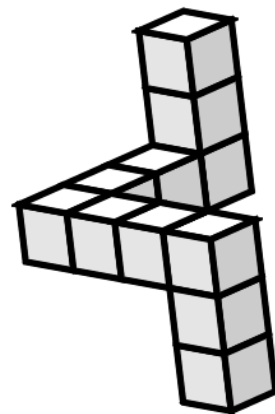
Identiske? __ ja        __ nej
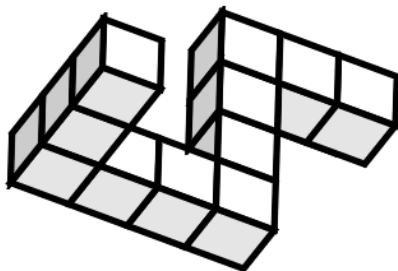
C
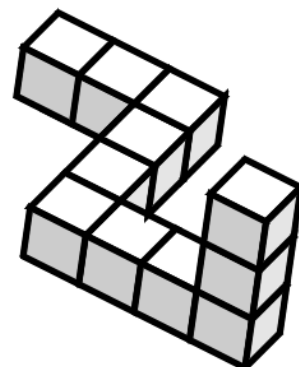
Identiske? __ ja        __ nej
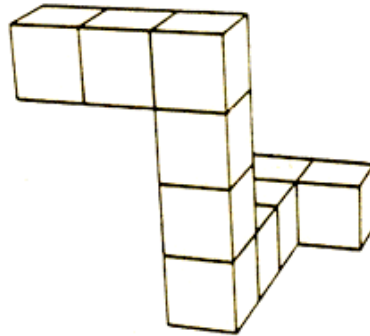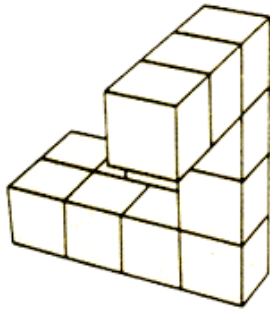
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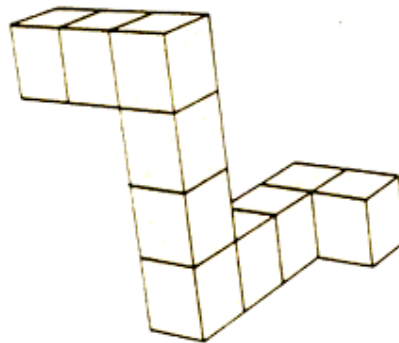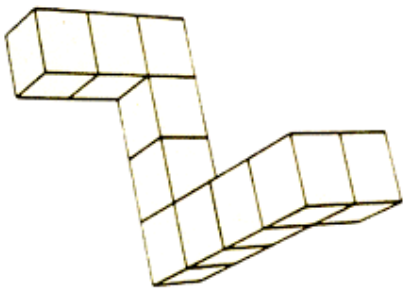
Identiske? __ ja      __ nej

**Instruktioner**:

Løs venligst disse matematiske opgaver:

27 + 30 =                                            288 + 20 =

289 + 150 =                                          27 : 9 =

37 – 17 =                                            18 : 6 =

### *Appendix F: Imagined moral judgment (forgiving condition)*

**Instruktioner:**

Nu skal du bruge din fantasi en smule. Prøv så ubesværet som muligt at forestille dig en person ud fra ordene, der står herunder:

*tilgivende*

*kristen*

*præst*

*barmhjertighed*

*kirken*

*næstekærlighed*

*bøn*

Du skal nu angive, hvordan du tror denne person ville vurdere de moralske problemstillinger fra tidligere i testen. Du skal altså bedømme de samme 5 historier, men nu ud fra, hvor forkert denne religiøse person ville synes handlingerne var. **Jeg vil bede dig undlade at kigge på din tidligere bedømmelse af historierne.**

Hvis du har nogen spørgsmål, så ræk en hånd i vejret.

### *Appendix G: Suspicion Probe*

**Instruktioner**:

Besvar venligst disse spørgsmål så ærligt som muligt.

1. Var der noget du gjorde i en opgave, som påvirkede hvad du gjorde i en anden opgave? (hvis ja) På hvilken måde påvirkede det dig?

2. Hvad tror du formålet er med de forsøgsopgaver, du har udført indtil nu?

3. Var der noget, som du undrede dig særligt over?

### *Appendix H: Questionnaire God Image*
**Instruktioner:**

Når du tænker på Gud, har du måske bestemte følelser. Nedenfor finder du nogle følelser, som folk kan opleve overfor Gud. Angiv for hver følelse i hvor høj grad, du oplever den (sæt kryds).

Hvis du ikke tror på Gud, så prøv alligevel at svare, hvad der falder dig ind ud fra dit eget begreb om Gud. Du kan godt have en opfattelse af Gud, og følelser forbundet med denne opfattelse, selv om du ikke er troende.

| |
|---|
| 1 = passer absolut <u>ikke</u> på mig |
| 2 = passer stort set ikke på mig |
| 3 = passer delvist / passer delvist ikke |
| 4 = passer stort set på mig |
| 5 = passer fuldstændigt på mig |

Når jeg tænker på Gud oplever jeg…

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| taknemmelighed | ❏ | ❏ | ❏ | ❏ | ❏ |
| nærhed | ❏ | ❏ | ❏ | ❏ | ❏ |
| tillid | ❏ | ❏ | ❏ | ❏ | ❏ |
| frygt for at blive afvist | ❏ | ❏ | ❏ | ❏ | ❏ |
| respekt | ❏ | ❏ | ❏ | ❏ | ❏ |
| | | | | | |
| skuffelse | ❏ | ❏ | ❏ | ❏ | ❏ |
| tilfredshed | ❏ | ❏ | ❏ | ❏ | ❏ |
| sikkerhed | ❏ | ❏ | ❏ | ❏ | ❏ |
| kærlighed | ❏ | ❏ | ❏ | ❏ | ❏ |
| frygt for ikke at være god nok | ❏ | ❏ | ❏ | ❏ | ❏ |
| | | | | | |
| solidaritet | ❏ | ❏ | ❏ | ❏ | ❏ |
| vrede | ❏ | ❏ | ❏ | ❏ | ❏ |
| skyld | ❏ | ❏ | ❏ | ❏ | ❏ |
| usikkerhed | ❏ | ❏ | ❏ | ❏ | ❏ |
| ømhed | ❏ | ❏ | ❏ | ❏ | ❏ |
| | | | | | |
| frygt for at blive straffet | ❏ | ❏ | ❏ | ❏ | ❏ |
| utilfredshed | ❏ | ❏ | ❏ | ❏ | ❏ |

De følgende udsagn handler om Gud.

Angiv i hvor høj grad udsagnene passer på hvem/hvad Gud er for dig (sæt kryds).

Ligesom på den foregående side, så kan du også her svare, selv om du ikke er religiøs. Du kan godt have en opfattelse af hvem/hvad Gud er, selv om du mener, at denne Gud ikke findes.

| | |
|---|---|
| 1 = | passer absolut <u>ikke</u> på min opfattelse |
| 2 = | passer stort set ikke på min opfattelse |
| 3 = | passer delvist / passer delvist ikke |
| 4 = | passer stort set på min opfattelse |
| 5 = | passer fuldstændigt på min opfattelse |

Gud…

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| udøver magt | ❑ | ❑ | ❑ | ❑ | ❑ |
| trøster mig | ❑ | ❑ | ❑ | ❑ | ❑ |
| straffer | ❑ | ❑ | ❑ | ❑ | ❑ |
| giver mig styrke | ❑ | ❑ | ❑ | ❑ | ❑ |
| har tålmodighed med mig | ❑ | ❑ | ❑ | ❑ | ❑ |
| lader mig vokse som person | ❑ | ❑ | ❑ | ❑ | ❑ |
| er troværdig | ❑ | ❑ | ❑ | ❑ | ❑ |
| styrer | ❑ | ❑ | ❑ | ❑ | ❑ |
| lader alting gå sin gang | ❑ | ❑ | ❑ | ❑ | ❑ |
| blander sig ikke i hvordan folk lever deres liv | ❑ | ❑ | ❑ | ❑ | ❑ |
| sætter mig fri fra min skyld | ❑ | ❑ | ❑ | ❑ | ❑ |
| beskytter mig | ❑ | ❑ | ❑ | ❑ | ❑ |
| sender folk til helvede | ❑ | ❑ | ❑ | ❑ | ❑ |
| vejleder mig | ❑ | ❑ | ❑ | ❑ | ❑ |
| giver mig sikkerhed | ❑ | ❑ | ❑ | ❑ | ❑ |
| er ubetinget åben overfor mig | ❑ | ❑ | ❑ | ❑ | ❑ |

### *Appendix I: Demographics, religious belief and practices*
**Instruktioner**:

Som det sidste skal du udfylde dette skema. Al information bliver behandlet anonymt.

Alder: _____ år

Køn: __ mand                    __ kvinde

Er du studerende?

___    Ja        ___    Nej

Hvis ja, angiv studie: _____

Tror du, at Gud eksisterer? (sæt ring om et tal)

| Tror slet ikke, at Gud eksisterer | | | | | | | | Helt sikker på, at Gud eksisterer |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Hvor ofte deltager du i religiøse handlinger sammen med andre? (fx gudstjenester eller bønnemøder)

___ Dagligt

___ Flere gange om ugen

___ En gang om ugen

___ Et par gange om måneden

___ En gang om måneden

___ Et par gange om året

___ En gang om året

___ Aldrig

Uddyb gerne:

_____

_____

Hvor ofte udfører du religiøse handlinger alene? (fx aftenbøn eller religiøs meditation)

     \_\_\_ Dagligt

     \_\_\_ Flere gange om ugen

     \_\_\_ En gang om ugen

     \_\_\_ Et par gange om måneden

     \_\_\_ En gang om måneden

     \_\_\_ Et par gange om året

     \_\_\_ En gang om året

     \_\_\_ Aldrig

Uddyb gerne:

_____

_____

Hvilken eller hvilke religiøse grupper identificerer du dig med?

Den danske folkekirke:

     \_\_\_ Almindelig folkekirke

     \_\_\_ Valgmenighed

\_\_\_ Pinsebevægelsen

\_\_\_ Anden kristen frikirke

\_\_\_ Den katolske kirke

\_\_\_ Den jødiske menighed

\_\_\_ Den ortodokse græske eller russiske kirke

\_\_\_ Muslimsk fællesskab

Andet: _____

\_\_\_ Intet religiøst tilhørsforhold

Uddyb gerne:

_____

_____

# 7. Appendixes: Tables

## *Table 1: Schematic overview of the procedure*

**TABLE 1**

**A schematic overview of the procedure**

| | |
|---|---|
| 1. Scrambled-sentence task | 3 conditions: <br><br> 1) Punishing, 2) Forgiving, <br><br> 3) Neutral |
| 2. Rating of moral vignettes – own perspective | 5 moral vignettes: <br><br> 1) Adultery, 2) Nepotism, <br><br> 3) Library Stealing, 4) Tax Cheating, <br><br> 5) Résumé Lying |
| 3. Mood measure | |
| 4. Filler task | |
| 5. Rating of moral vignettes – imagined perspective | The same 5 moral vignettes as used earlier in the experiment |
| 6. Post-interview | - Suspicion probe <br> - Personal image of God <br> - Demographics <br> - Belief in existence of God <br> - Personal religious practices (public vs. private) <br> - Religious identification |

## *Table 2: Mean ratings on moral vignettes – own moral judgment*

**TABLE 2**

**Mean ratings for moral vignettes (own moral judgment)**

| Condition | Adultery | Nepotism | Library Stealing | Tax Cheating | Résumé Lying | Sample Mean |
|---|---|---|---|---|---|---|
| Punishing God ($n = 20$) | 7.95 (1.32) | 6.25 (1.74) | 6.90 (1.41) | 7.40 (1.23) | 6.35 (1.67) | 6.97 (0.71) |
| Forgiving Christian ($n = 20$) | 6.90 (2.10) | 6.25 (2.30) | 6.20 (1.70) | 6.35 (1.53) | 5.60 (1.70) | 6.26 (1.17) |
| Neutral ($n = 20$) | 7.55 (1.47) | 7.20 (1.80) | 6.50 (1.43) | 7.00 (1.67) | 6.70 (1.80) | 6.99 (1.17) |

## *Table 3: One-way ANOVA of participants' own moral judgment*

**TABLE 3**

**One-way ANOVA on the individual vignettes (own moral judgment), with priming condition (punishing, forgiving, or neutral) as a factor**

| Vignette | Mean ratings | df | F | *p* |
|---|---|---|---|---|
| Adultery | See table 2 | 2, 57 | 2.03 | 0.141 |
| Nepotism | | 2, 57 | 1.57 | 0.217 |
| Library Stealing | | 2, 57 | 1.07 | 0.351 |
| Tax Cheating | | 2, 56 | 2.55 | 0.087 |
| Résumé Lying | | 2, 57 | 2.12 | 0.129 |

## Table 4: Mean ratings on moral vignettes – imagined moral judgment

**TABLE 4**

**Mean ratings for moral vignettes (imagined moral judgment)**

| Condition | Adultery | Nepotism | Library Stealing | Tax Cheating | Résumé Lying | Sample Mean |
|---|---|---|---|---|---|---|
| Punishing God ($n = 30$) | 8.47 (1.17) | 6.47 (2.43) | 8.00 (1.55) | 7.70 (1.54) | 7.37 (1.73) | 7.60 (1.35) |
| Forgiving Christian ($n = 30$) | 7.73 (1.60) | 5.67 (2.40) | 6.00 (2.33) | 6.07 (2.03) | 6.10 (1.81) | 6.31 (1.49) |

## Table 5: One-way ANOVA of participants' imagined moral judgment

**Table 5**

**One-way ANOVA on the individual vignettes of imagined moral judgment, with imagined condition (punishing vs. forgiving) as a factor**

| Vignette | Mean ratings | df | F | $p$ |
|---|---|---|---|---|
| Adultery | See table 4 | 1, 58 | 4.13 | 0.047 |
| Nepotism | | 1, 58 | 1.65 | 0.205 |
| Library Stealing | | 1, 58 | 15.26 | < 0.001 |
| Tax Cheating | | 1, 58 | 12.36 | 0.001 |
| Résumé Lying | | 1, 58 | 7.68 | 0.007 |

## *Table 6: Correlations and t-test between own and imagined moral judgment*

**Table 6**

**Correlations and *t*-test (paired samples) between own and imagined moral judgment**

| *Priming condition* | *Imagined condition* | *Means of moral judgment* 1) *Own* 2) *Imagined* | *Correlation* | t-*test* |
|---|---|---|---|---|
| Punishing | Punishing (*n* = 10) | 1) 7.08 (0.54) 2) 7.40 (1.64) | **[4]** *r* = .67 *p* = .033 | **[6]** *t*(9) = 0.76 *p* = .470 |
|  | Forgiving (*n* = 10) | 1) 6.86 (0.86) 2) 6.42 (1.61) | *r* = .66 *p* = .038 | *t*(9) = 1.14 *p* = .285 |
| Forgiving | Punishing (*n* = 10) | 1) 6.24 (1.00) 2) 7.44 (1.18) | *r* = .57 *p* = .088 | **[8]** *t*(9) = -3.67 *p* = .005 |
|  | Forgiving (*n* = 10) | 1) 6.28 (1.38) 2) 6.76 (1.29) | **[2]** *r* = .68 *p* = .030 | **[3]** *t*(9) = -1.42 *p* = .190 |
| Neutral | Punishing (*n* = 10) | 1) 6.98 (1.54) 2) 7.96 (1.24) | **[5]** *r* = .71 *p* = .021 | **[7]** *t*(9) = -2.84 *p* = .020 |
|  | Forgiving (*n* = 10) | 1) 6.99 (0.70) 2) 5.76 (1.51) | **[1]** *r* = -.05 *p* = .899 | *t*(9) = 2.29 *p* = .048 |