Tainting the soul: Purity concerns predict moral judgments of suicide

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ABSTRACT

Moral violations are typically defined as actions that harm others. However, suicide is considered immoral even though the perpetrator is also the victim. To determine whether concerns about *purity* rather than harm predict moral condemnation of suicide, we presented American adults with obituaries describing suicide or homicide victims. While harm was the only variable predicting moral judgments of homicide, perceived harm (toward others, the self, or God) did not significantly account for variance in moral judgments of suicide. Instead, regardless of political and religious views and contrary to explicit beliefs about their own moral judgments, participants were more likely to morally condemn suicide if they (i) believed suicide tainted the victims' souls, (ii) reported greater concerns about purity in an independent questionnaire, (iii) experienced more disgust in response to the obituaries, or (iv) reported greater trait disgust. Thus, suicide is deemed immoral to the extent that it is considered impure.

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1. Introduction

Every year, approximately one million people take their own lives (World Health Organization, 2005). These acts of suicide elicit considerable moral condemnation (Gallup, 1978). Suicide represents an unusual kind of moral violation insofar as the perpetrator of the act is also the victim. This self-directed nature of suicide presents a puzzle for dyadic accounts of morality (Gray & Wegner, 2009, 2012), which require a violator (agent) and a victim (patient), and which identify other-directed concerns about harm as the cornerstone of moral psychology (Gray, Young, & Waytz, 2012; also see Royzman, Leeman, & Baron, 2009). If moral violations are typically considered wrong because of the harm inflicted on third parties, why is suicide so often judged to be immoral?

Some researchers have argued that objectively innocuous actions can nevertheless be *perceived* as causing unseen harm to others, which then renders these actions immoral (Gray & Wegner, 2012; Gray et al., 2012; Turiel, Killen, & Helwig, 1987). There are several ways in which suicide could be conceptualized as harmful; for example, suicide may be thought to cause damage to the deceased person's family, to their community, or even to God or to a "future self". In order for people to perceive harm, one of these potential victims must first be identified. In a recent study, when participants were asked whether anyone is wronged when an individual ends her life, the majority (71%) answered in the affirmative, typically designating either the person's family or the person herself as the victim (DeScioli, Gilbert, & Kurzban, 2012). These perceptions of victimhood, which could then lead to perceptions of harm, have been claimed to account for people's moral condemnation of suicide (Gray et al., 2012).

Here we test whether these inferences of harmed victims play a fundamental role in the moral judgment itself or, alternatively, whether they are more likely to reflect post hoc rationalizations in support of the initial moral judgment of suicide (DeScioli et al., 2012; Ditto, Liu, &

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Wojcik, 2012). As prior work has shown, explicit justifications do not always reflect the intuitive processes underlying moral judgments (Haidt, 2001; Hauser, Cushman, Young, Jin, & Mikhail, 2007). Recent research reveals that inferences of harm in moral violations where actual harm is absent (e.g., eating human tissue derived from cloning) tend to be effortful; harm inferences are impaired under cognitive load and are unrelated to the severity of moral judgments (Gutierrez & Giner-Sorolla, 2007). Thus, while justifications of moral judgments often include appeals to harm, actual or imagined harm are not necessarily the true causes of those judgments.

According to an alternative model of moral psychology, some moral concerns take the form of "sacred" or deontological values that are considered inviolable regardless of clear consequences for the wellbeing of others (Chakroff, Dungan, & Young, 2013; Ditto et al., 2012; Graham, Haidt, & Nosek, 2009; Haidt, 2012; Haidt, Koller, & Dias, 1993; Shweder, Mahapatra, & Miller, 1987; Tetlock, 2003). In particular, the "purity/sanctity" foundation of morality encompasses transgressions that are considered wrong because they contaminate or degrade a sacred entity (Haidt, 2012; Koleva, Graham, Iyer, Ditto, & Haidt, 2012). Because moral purity violations do not require harm to third parties, and because suicide is often described as a violation of God's holy dominion over human life (e.g., Bering, 2006), we suggest that moral judgments of suicide may be closely linked to concerns about impurity and sacrilege. Indeed, people with stronger beliefs that their life belongs to God (Ross & Kaplan, 1994) and that life is sacred (Sawyer & Sobal, 1987) are more disapproving of suicide, providing preliminary support for this claim. The present research provides a direct empirical test of the hypothesis that individual differences in the moral condemnation of suicide stem from variance in the tendency to value purity/sanctity, and, in particular, variance in concerns regarding the defilement of the soul. While it is possible that "purity" and "sanctity" have subtly different conceptual profiles, these concepts are often treated as synonymous (e.g., Graham et al., 2009), and we will use "purity" for the remainder of the paper as a shorthand term to refer to these concerns.

In Study 1, half of the participants were presented with a series of obituaries describing cases of suicide. The remaining participants were assigned to a control condition in which they were presented with obituaries describing cases of homicide, a prototypical harm-based violation. We asked all participants to rate each obituary according to five dimensions (i.e., how morally wrong, how harmful, how impure, how angering, how disgusting), and we entered these variables into a regression analysis to assess which factors predicted individual differences in judgments of moral wrongness. We hypothesized that participants would judge a suicide as morally wrong to the extent that they perceived the suicide to have diminished the victim's purity, but not to the extent that they perceived the suicide to have caused harm. We expected to find the opposite pattern for homicide. Additionally, because harm violations have been found to selectively elicit anger, whereas purity violations have been shown to selectively elicit disgust (Horberg, Oveis, Keltner, & Cohen,

2009; Inbar, Pizarro, & Bloom, 2009; Rozin, Lowery, Imada, & Haidt, 1999; Russell & Giner-Sorolla, 2013; Russell, Piazza, & Giner-Sorolla, 2013; Seidel & Prinz, 2013; but see Chapman & Anderson, 2013), we investigated whether individual differences in moral judgments of suicide and homicide are associated with distinct emotional responses.

Because some researchers define harm very broadly (e.g., Gray et al., 2012), Study 2 aimed to ensure that the purity item in Study 1 (which asked about "taint to the soul") was not being re-construed as a form of actual or symbolic harm. We therefore focused on suicide obituaries and asked participants to report the harm they perceived being done to others, to the self, and to God, in addition to reporting perceived impurity as in Study 1. Again, a regression analysis assessed the degree to which these factors independently predicted individual differences in moral judgments of suicide.

2. Study 1

2.1. Participants

Adults ($n = 224$) living in the United States were recruited from Amazon Mechanical Turk, an online crowdsourcing website that has been found to yield valid and reliable data (Buhrmester, Kwang, & Gosling, 2011). Participants were excluded from analyses if they completed the survey very quickly (less than 1 SD below the mean response time: 18 participants), missed at least one of two "catch questions" used as attention checks (19 additional participants), or reported being non-American (13 additional participants).[1] The final sample comprised 174 participants (114 female; $M_{age} = 21.14$, $SD = 13.96$). Participants were generally liberal ($M = 3.35$, $SD = 1.74$) and non-religious ($M = 3.34$, $SD = 2.22$), as confirmed by one-sample t-tests (scale midpoint = 4), $ps < .001$.

2.2. Materials and procedure

2.2.1. Obituary task

Participants were randomly assigned either to the Suicide condition or to the Homicide condition. In each condition, participants read eight fabricated obituaries (presented in randomized order) describing men and women who had either taken their own lives (Suicide condition) or who had been killed (Homicide condition). Crucially, the obituaries were identical across conditions except for a single word stating the cause of the death. The nature of the suicide or homicide was intentionally left unspecified, both in order to prevent extraneous factors from influencing the moral judgments and in order to make the obituaries more realistic. (All participants were debriefed at the conclusion of the study and told that the obituaries were fictitious.) A sample obituary is as follows (other obituaries are reproduced in online supplementary materials):

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[1] We restricted the Turk participants to the United States in order to obtain a higher proportion of native English speakers. However, the results did not change when the 13 non-Americans were included in the sample.

Table 1

Questions asked about each suicide/homicide obituary in Study 1.

Variable	Question
Wrong	Was it morally wrong for [name] *to kill [himself/herself]/to be killed*?
Anger	When you think about [name]'s *suicide/death*, do you experience feelings of anger?
Disgust	When you think about [name]'s *suicide/death*, do you experience feelings of disgust?
Harm	Did [name]'s *suicide/homicide* cause harm?
Purity	Was the purity of [name]'s soul tainted as a result of [his/her] *suicide/homicide*?

Louise Parker, who was 68 years old, died on January 11, 2008 due to [suicide/homicide].

Louise had always been very close with her siblings, and had recently spent the holidays with all five of them. Her brother Roger wrote, "Louise was a terrific sister. She was a joy to be around, and always knew how to make a person laugh. Her charm and energy were contagious and appreciated by everyone who met her. Louise couldn't go anywhere without running into people she knew. I've been truly lucky to have spent so many quality years with her."

Louise is survived by her brothers, Mark and Roger, and three sisters: Geraldine, Karen, and Theresa. Her memory will live on in the hearts of many.

All participants answered five questions about each obituary: how morally *wrong* the death was, how *angry* it made them feel, how *disgusted* it made them feel, how much *harm* had been done, and how *impure* the victim became[2] (see Table 1). All items were rated on a seven-point Likert scale. The question about moral wrongness was always the first or last of these five questions (counterbalanced across participants), and the order of the other questions was randomized.

2.2.2. Additional questionnaires

We next administered the "Explicit Justification Task" (described in Section 2.2.3), after which we measured participants' general moral concerns about harm and purity with the Harm and Purity subscales of an independent measure, the Moral Foundations Questionnaire (MFQ; Graham et al., 2011). Items were randomized across participants. Then, to measure whether individual differences in moral judgments of suicide and homicide were influenced by variations in stable dispositional tendencies to experience different emotions, we administered short measures of trait disgust (Inbar et al., 2009) and trait anger (Spielberger, Jacobs, Russell, & Crane, 1983). These trait emotion questionnaires were administered in a counterbalanced order after the MFQ; items were randomized within each questionnaire. At the conclusion of the study, participants completed a brief demographic survey measuring political

and religious beliefs. Because political conservatism and religiosity are associated with increased endorsements of purity values (Graham et al., 2009; Preston & Ritter, 2012), we predicted that these ideological variables would predict moral condemnations of suicide but not homicide.

2.2.3. Explicit justification task

As noted in the Introduction, there is reason to believe that the underlying bases of moral judgments are not always accurately reflected in explicit moral beliefs (Haidt, 2001; Hauser et al., 2007). To determine whether this is the case for suicide and/or homicide, participants were asked to rate their agreement (on a 7-point Likert scale) with the following justifications for moral judgments of suicide and moral judgments of homicide (adapted from Rozin et al., 1999). These were presented in random order, immediately after all eight of the obituaries had been evaluated:

[Suicide/homicide] is wrong because it directly hurts other people. To decide if [suicide/homicide] is wrong, you might consider the harms that have been experienced by others, as well as thinking about things like justice and human rights.

[Suicide/homicide] is wrong because it disrespects the sacredness and purity of the self. To decide if [suicide/homicide] is wrong, you might think about things like sin, the natural order of things, and the sanctity of the soul.

2.3. Results

2.3.1. Preliminary analyses

Reliability analyses conducted on all task variables revealed high internal consistency among the eight obituaries in the Homicide and Suicide conditions (Cronbach's α ranged from .92 to .99). Responses were therefore collapsed across obituaries in subsequent analyses. Preliminary analyses indicated that neither the participants' gender nor the order in which the moral wrongness question was asked (first vs. last) significantly influenced moral wrongness judgments; these variables were therefore removed from further analyses.[3]

Consistent with previous survey findings (e.g., Gallup, 1978), suicide was judged as morally wrong: Ratings of moral wrongness across the eight obituaries were significantly above the midpoint (4) of the Likert scale, $M = 4.90$

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[2] Because the victim is also the perpetrator in the case of suicide, we conducted a replication study (Replication #3 in the online supplementary materials) in which we asked about the taint to the perpetrator's soul for both homicide and suicide (e.g., "Did [Joel's killer/Joel] taint the purity of his soul by killing [Joel/himself]?"). Reframing the question in this way did not affect the results for the purity variable (i.e., it remained a significant predictor for suicide, $p < .001$, and a non-significant predictor for homicide, $p = .123$). In another replication study (Replication #4), we rephrased the purity question to ask whether the suicide or homicide was thought to "violate the sacredness" of the person's life, and again found similar results. See Tables S1 and S2 in the online supplementary materials.

[3] These variables were not significant covariates in regression analyses and did not change the results of the regressions, with one exception: Question Order (moral judgment: first vs. last) was a significant predictor of homicide judgments in a regression with trait anger and trait disgust, $p = .04$. This unpredicted result is not easily interpretable and will not be discussed further.
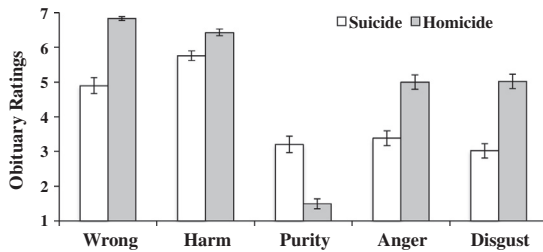
Fig. 1. Descriptive statistics for questions asked about each obituary. Variables were rated on a Likert scale ranging from 1 (low) to 7 (high). Error bars represent standard errors of the mean.

($SD = 2.14$), $t(86) = 3.93$, $p < .001$. As expected, homicide was considered to be very morally wrong, $M = 6.83$ ($SD = 0.50$), $t(86) = 52.28$, $p < .001$, and more wrong than suicide, $t(96) = 8.20$, $p < .001$. Descriptive statistics (Fig. 1) also demonstrated that participants found homicide and suicide to be much more harmful than impure, although homicide was judged to be more harmful than suicide, and suicide was judged to be more impure than homicide ($ps < .001$). Additionally, anger and disgust were both evoked at moderate levels, but both emotions were experienced more strongly for homicide than suicide ($ps < .001$). However, as indicated by an examination of correlations (Tables 2 and 3), mean ratings are not very informative about the relationships amongst the different variables. Therefore, we turned to regression analyses for an examination of the factors that underlie individual differences in moral judgments of suicide and homicide.

2.3.2. Primary analyses

We conducted a series of regressions to investigate the factors predicting participants' moral judgments of suicide and homicide. Because moral wrongness ratings on the homicide obituaries were highly skewed toward the upper end of the scale, with kurtosis and skewness values that indicated a non-normal distribution, we carried out logistic regressions with this variable. Moral wrongness ratings were dummy coded for "extremely morally wrong" (ratings of 7 for all obituaries) and "not extremely morally wrong" (below-ceiling average ratings). Because moral wrongness ratings on the suicide obituaries did not violate normality assumptions, linear regressions were conducted on this variable.[4]

First, we regressed judgments of moral wrongness onto ratings of harmfulness and impurity (i.e., taint to the soul). For suicide obituaries, purity ratings significantly predicted judgments of moral wrongness, while harm ratings did not (see Table 4). For homicide obituaries, we found the opposite pattern: harm, but not purity, significantly predicted moral wrongness (see Table 5). These results support our principal hypothesis: suicide, but not homicide, is considered immoral when there are elevated concerns about spiritual taint (impurity), while the same is not true for concerns about harm.

Second, we regressed judgments of moral wrongness onto ratings of anger and disgust reactions to the obituaries. For suicide obituaries, disgust ratings significantly predicted moral judgments of suicide, while anger ratings did not (see Table 4). For homicide obituaries, a regression analysis could not be run due to the multicollinearity of these variables. However, neither anger nor disgust was significantly correlated with moral wrongness ratings of homicide at a zero-order level. Our finding that disgust is a unique predictor of moral judgments of suicide is consistent with prior work on the distinctive role of disgust for judging purity-based transgressions (Horberg et al., 2009; Rozin et al., 1999; Russell et al., 2013; Seidel & Prinz, 2013). This result therefore provides further support for the hypothesis that suicide is perceived as a purity violation.

Third, we regressed judgments of moral wrongness onto ratings of MFQ harm and MFQ purity. For suicide obituaries, greater concerns about purity predicted moral wrongness judgments, whereas greater concerns about harm did not (see Table 4). For homicide obituaries, the opposite was true: greater concerns about harm predicted moral wrongness judgments, whereas greater concerns about purity did not (see Table 5). We were thus able to detect the suicide/purity association and the homicide/harm association once again, this time by measuring moral concerns for harm and purity using a well-validated measure independent of, and unrelated to, the obituary task.

Fourth, we regressed judgments of moral wrongness onto ratings of trait anger and trait disgust. For suicide obituaries, trait disgust, but not trait anger, significantly predicted moral judgments (see Table 4). For homicide obituaries, neither predictor reached significance (see Table 5). These findings provide a conceptual replication of the unique association between disgust and moral judgments of suicide.

For completeness, we also created composite "harm/anger" and "purity/disgust" variables, which combined equal weightings of the variables from the previous four analyses. For suicide obituaries, a linear regression demonstrated that the purity/disgust composite predicted moral judgments, $B = 1.20$, $p < .001$, while the harm/anger composite did not, $B = -0.04$, $p = .870$. For homicide obituaries, a logistic regression showed that the harm/anger composite predicted moral judgments, $B = 2.21$, $p = .001$, while the purity/disgust composite was a non-significant negative predictor, $B = -0.76$, $p = .070$. Additionally, regression analyses with all eight predictor variables entered at once found that purity ratings, $B = 0.29$, $p = .004$, and MFQ purity concerns, $B = 0.62$, $p < .001$, predicted moral judgments of suicide, while harm ratings, $B = 1.72$, $p = .004$, predicted moral judgments of homicide.

2.3.3. Ideological influences

Given prior work linking purity-based (but not harm-based) morals to political conservatism and religiosity (Graham et al., 2009; Preston & Ritter, 2012), additional analyses provide further support of the hypothesis that moral judgments of suicide can be accounted for by purity-related concerns. Participants who were more politically conservative found suicide to be more morally

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[4] For completeness, logistic regressions were also conducted for suicide obituaries, and these yielded similar results to the linear regressions reported here (see Table S3 in the online supplementary materials).

Table 2
Correlations between variables in the Suicide condition.

	Harm	Purity	Anger	Disgust	MFQ harm	MFQ purity	Trait anger	Trait disgust	Polit.	Relig.
Wrong	.26*	.64***	.30**	.50***	.08	.65***	−.17	.25*	.42***	.56***
Harm		.18	.18	.18	.09	.06	.03	.08	.22*	.07
Purity			.38***	.55***	−.06	.55***	−.03	.26*	.42***	.41***
Anger				.73***	−.10	.12	.35**	.10	.11	−.04
Disgust					−.07	.33**	.15	.17	.31**	.11

* $p < .05$.
** $p < .01$.
*** $p < .001$.

Table 3
Correlations between variables in the Homicide condition.

	Harm	Purity	Anger	Disgust	MFQ harm	MFQ purity	Trait anger	Trait disgust	Polit.	Relig.
Wrong	.41***	−.35**	.15	.16	.21	−.05	−.15	.09	−.01	−.09
Harm		−.11	.33**	.35**	.37***	.09	−.10	.26*	−.02	.05
Purity			.04	.06	.01	.16	.16	.13	−.04	−.01
Anger				.90***	.34**	.24*	.10	.32**	.15	.18
Disgust					.38***	.21	.08	.34**	.09	.13

* $p < .05$.
** $p < .01$.
*** $p < .001$.

Table 4
Results of the linear regression analyses of suicide obituaries, with moral wrongness as the outcome variable. Beta values represent unstandardized regression coefficients. Significant predictors are bolded.

Regression	Predictor	Beta	SE (B)	t	p	Semi-partial correlation
#1	Harm	0.23	0.13	1.72	.089	.141
	Purity	**0.60**	**0.08**	**7.39**	**.000**	**.607**
#2	Anger	−0.13	0.15	−0.91	.365	−.086
	Disgust	**0.64**	**0.15**	**4.26**	**.000**	**.402**
#3	MFQ harm	0.02	0.25	0.07	.948	.005
	MFQ purity	**1.03**	**0.13**	**7.74**	**.000**	**.644**
#4	Trait anger	−0.25	0.18	−1.37	.174	−.144
	Trait disgust	**0.43**	**0.19**	**2.19**	**.031**	**.229**

Table 5
Results of the logistic regression analyses of homicide obituaries, with moral wrongness as the outcome variable. Beta values represent unstandardized regression coefficients. Significant predictors are bolded.

Regression	Predictor	Beta	SE (B)	Wald	df	p	Odds ratio
#1	**Harm**	**1.76**	**0.44**	**15.95**	**1**	**.001**	**5.82**
	Purity	−0.36	0.22	2.76	1	.097	0.70
#2	Could not be run due to multicollinearity						
#3	**MFQ Harm**	**1.27**	**0.41**	**9.44**	**1**	**.002**	**3.55**
	MFQ purity	−0.36	0.26	1.87	1	.171	0.70
#4	Trait anger	−0.23	0.27	0.72	1	.395	0.79
	Trait disgust	0.44	0.26	2.93	1	.087	1.56

wrong, $r(85) = .42$, $p < .001$; this was not the case for homicide, $r(85) = −.01$, $p = .899$. Similarly, participants who were more religious found suicide to be more morally wrong, $r(85) = .56$, $p < .001$; this was not the case for homicide, $r(85) = −.09$, $p = .387$. Both political conservatism and religiosity were found to independently predict moral

judgments of suicide, as shown in a regression analysis: for conservatism, $B = .345$, $p = .004$; for religiosity, $B = .450$, $p < .001$.

Critically, however, political conservatism and religiosity did not account for the link between purity concerns and moral judgments of suicide. When controlling for

political conservatism and religiosity in the regression analyses conducted on the suicide obituaries, obituary purity ratings and MFQ purity concerns remained highly significant predictors of moral wrongness ($ps < .003$). Even when the analyses were restricted to non-religious liberals (ratings of political conservatism <4 and ratings of religiosity <4), both purity, $B = 0.77$, $p = .001$, and MFQ purity, $B = 1.00$, $p < .05$, continued to predict moral judgments of suicide; harm and MFQ harm remained non-significant predictors ($ps > .35$).[5] Additionally, both the purity ratings on the obituaries and MFQ purity concerns significantly mediated the effects of conservatism and religiosity on moral judgments of suicide (see Fig. S1 in the online supplementary materials). [6]

2.3.4. Explicit Justifications

We examined participants' relative support for the two explicit justifications (i.e., sets of general principles) provided to them regarding the immorality of suicide and homicide. Overall, the harm principle was explicitly endorsed as a more relevant justification than the purity principle not only for homicide (Harm: $M = 6.67$, $SD = 0.81$; Purity: $M = 4.80$, $SD = 2.30$), $t(172) = 9.79$, $p < .001$, but also for suicide (Harm: $M = 5.26$, $SD = 1.85$; Purity: $M = 3.94$, $SD = 2.38$), $t(172) = 7.38$, $p < .001$. These results indicate that participants did not realize (or did not accurately report) why they judged suicide to be morally wrong, demonstrating that verbal reports do not always reflect the underlying source of judgments (Haidt, 2001; Nisbett & Wilson, 1977). Additionally, endorsements of the purity-based justification correlated with moral judgments of suicide, $r(85) = .76$, $p < .001$, while endorsements of the harm-based justification did not, $r(85) = .08$, $p = .488$. Endorsements of the purity-based justification also correlated with disgust toward the obituaries, $r(85) = .45$, $p < .001$, beliefs that suicide tainted the person's soul, $r(85) = .65$, $p < .001$, beliefs that suicide caused harm, $r(85) = .26$, $p = .017$, trait disgust, $r(85) = .26$, $p < .001$, MFQ Purity, $r(85) = .68$, $p < .001$, political conservatism, $r(85) = .34$, $p < .001$, and religiosity, $r(85) = .52$, $p < .001$. When explicit justification ratings were controlled for, purity (i.e., "tainting the soul") remained a significant predictor of moral judgments of suicide, $B = 0.25$, $p = .004$, as did MFQ Purity, $B = 0.34$, $p = .027$.

2.4. Discussion

Study 1 provides evidence that suicide is considered morally wrong because it is perceived to taint the soul – and not because it is perceived to cause harm. This conclusion is supported by converging results from four regression analyses, demonstrating that moral judgments of suicide were predicted by assessments of impurity and

feelings of disgust when reading obituaries, as well as independently reported tendencies to be concerned about purity and to be easily disgusted. In a stark juxtaposition, participants' moral judgments of homicide were predicted by assessments of harm when reading obituaries and independently reported concerns about harm, a pattern that was found despite restricted variability in wrongness judgments of homicide.

In the obituary task, participants were asked simply whether the death caused harm. While this question was designed to be broad enough to allow participants to construe harm in a variety of ways, the generality of this question could also be seen as a potential limitation insofar as the "harm" may have been too vague to capture participants' nuanced perceptions of damage or suffering. To address this issue, we ran a second study in which we asked participants to rate the same suicide obituaries on a variety of specific harms – to others, to the self, and to God – in addition to evaluating the impurity of the victim's soul as in Study 1.[7]

3. Study 2

3.1. Participants

Adults ($n = 101$) living in the United States were recruited from Amazon Mechanical Turk. Participants were excluded from data analysis if they completed the survey too quickly (less than 1 SD below the mean response time: 7 participants) or reported being non-American (5 additional participants). The final sample comprised 89 participants (42 female, $M_{age} = 31.65$, $SD = 12.49$). Again, participants were liberal ($M = 3.38$, $SD = 1.61$) and non-religious ($M = 2.55$, $SD = 1.96$), as confirmed by one-sample t-tests (scale midpoint = 4), $ps \leq .001$.

3.2. Materials and procedure

Participants read the same suicide obituaries from Study 1. All participants answered five questions about each obituary: how morally *wrong* the death was, how much *harm* had been done *to other people*, how much *harm* had been done *to the self*, how much *harm* had been done *to God*, and how *impure* the victim's soul became (see Table 6). Participants were also given the explicit justification task and the demographics questionnaire administered in Study 1. Counterbalancing and randomization methods paralleled Study 1.

3.3. Results and discussion

3.3.1. Preliminary analyses

Reliability analyses found high internal consistency among the eight obituaries (Cronbach's α ranged from .90

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[5] Disgust, but not trait disgust, also continued to predict moral judgments of suicide when controlling for conservatism and religiosity. Both disgust and trait disgust remained significant predictors for the subset of non-religious liberals.

[6] Disgust, but not trait disgust, also significantly mediated the effect of conservatism on moral judgments of suicide. Neither disgust nor trait disgust significantly mediated the relationship between religiosity and moral judgments of suicide.

[7] In light of recent concerns about replicability in psychological science (e.g., Open Science Collaboration, 2012), we also conducted four replication studies that used the same general methods reported here. For brevity, and to avoid repetitiveness, the materials and results of these studies are presented in brief in the online supplementary materials (see Tables S1 and S2). More details are available from the authors upon request.

to 1.00), so the data were again collapsed across obituaries. The order in which the moral wrongness question was asked (first vs. last) did not influence moral judgments or change the results, and this variable was not a significant covariate, so it was removed from analyses.[8] Descriptive statistics (Fig. 2) and correlations (Table 7) were explored for all variables.

3.3.2. Primary analyses

We regressed judgments of moral wrongness onto ratings of impurity and our three measures of harm. Once again, purity ratings independently predicted judgments of moral wrongness, while harm ratings did not, either for others, the self, or God (see Table 8). These results provide converging evidence that suicide is considered more immoral when concerns about purity, rather than harm, are elevated.[9]

3.3.3. Additional analyses

All relevant results regarding political conservatism and religiosity from Study 1 were replicated in this sample (see Additional Results in online supplementary materials). We also replicated the Study 1 finding that the harm principle was explicitly endorsed as a more relevant justification than the purity principle (Harm: $M = 5.22$, $SD = 1.78$; Purity: $M = 3.17$, $SD = 2.33$), $t(87) = 8.21$, $p < .001$.

4. General discussion

Philosophers have long debated whether suicide is best considered a harm-based violation or a defilement of the sacred (see Battin & Mayo, 1980). This meta-ethical uncertainty was perhaps best captured by Dante, who expressed ambivalence in his categorization of suicide by assigning it to a unique ring of hell precariously situated between the rings of harm and impurity in the Seventh Circle (Alighieri, 1314/2000). The present research investigated this issue in a new light by examining the distinct signatures of folk moral attitudes toward suicide vs. homicide. Across two studies, we found that suicide is considered wrong to the extent that it taints the soul – not the degree to which it is perceived as harmful. This suggests that harm-based or dyadic theories of morality (e.g., Gray & Wegner, 2012; Gray et al., 2012) cannot fully account for all moral judgments. Indeed, it is unlikely that all moral judgments are based upon a single unifying principle, and models of moral cognition therefore need to account for multiple foundations upon which different kinds of judgments can be based (Haidt, 2012; Sinnott-Armstrong & Wheatley, 2013).

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[8] A gender difference was found in this study, however. Although males and females judged suicide as equally morally wrong, $t(87) = 1.00$, $p = .319$, gender influenced the results of the regression analysis. While purity ratings significantly predicted moral wrongness judgments for both males and females ($ps \leq .001$), ratings of harm to others also predicted moral wrongness judgments for men ($B = 0.44$, $p < .01$) but not for women ($B = 0.03$, $p = .907$).

[9] Of course, it is conceivable that spiritual taint could be re-construed as yet another form of "harm" that is unrelated to harm to others, to the self, or to God (e.g., Gray et al., 2012), but such an interpretation of harm may be too broad to serve as a useful extension of the typical "harm" concept (Sinnott-Armstrong & Wheatley, 2013).

Notably, suicide was considered very harmful, both to other people and to the self. Unlike other studies that have investigated putatively *harmless* purity violations, including consensual sibling incest or eating dead pet dogs (Haidt et al., 1993), we found that suicide is viewed as even more harmful than impure (see Figs. 1 and 2). This research therefore provides the first demonstration that purity concerns can be more closely linked to moral judgments than harm concerns even when both concerns are potentially relevant. In other words, even though participants did not judge suicide to taint victims' souls to the same extent that they judged suicide to cause harm, their moral judgments were associated only with their purity-based assessments about the tainting of souls. Following previous research that has identified relevant foundations by looking at correlations rather than mean endorsements (e.g., Koleva et al., 2012), we take this pattern to suggest that suicide should be classified as a purity-based violation.

The current work also demonstrates that, while politically conservative and religious individuals find suicide more morally wrong than secular liberals, even self-described non-religious liberals consider suicide to be morally wrong – and, crucially, they consider it to be morally wrong on account of purity concerns. These results suggest that even if people explicitly deny the existence of religious phenomena, natural tendencies to at least implicitly believe in souls (Bering, 2006) can underlie intuitive moral judgments. While previous studies have primarily found evidence for purity concerns in conservative, religious, low-SES, and/or non-Western societies (Graham et al., 2009; Haidt et al., 1993; Shweder et al., 1987), this research demonstrates that purity concerns can also significantly account for the moral judgments of liberal, non-religious Americans. Indeed, purity concerns may be more widespread than previously realized (Koleva et al., 2012), and studying "WEIRD" (Western, educated, industrialized, rich, democratic; Henrich, Heine, & Norenzayan, 2010) samples may be especially informative in understanding the pervasiveness of purity concerns.

Claims that moral judgments are affectively laden (Greene, 2007; Haidt, 2001; Nichols, 2004) received some support. In Study 1, state disgust (as felt while reading the obituaries) and trait disgust both uniquely predicted judgments of moral wrongness for suicide. These patterns dovetail with previous findings that state disgust heightens the moral condemnation of purity violations (Horberg et al., 2009; Seidel & Prinz, 2013), as well as previous findings that dispositional tendencies to experience disgust (i.e., disgust sensitivity) predict purity-based moral judgments (e.g., Inbar et al., 2009). This research is among the first to document a moral purity violation that is associated with disgust in the absence of obvious physical or bodily (including sexual) contamination, such as touching a corpse (Rozin et al., 1999) or belonging to a necrophilia club (Gutierrez & Giner-Sorolla, 2007). The current findings therefore conflict with claims that moral purity violations are inherently tied to bodily disease or degradation (e.g., Russell & Giner-Sorolla, 2013). The present work, however, is consistent with research showing that self-directed moral transgressions are perceived as purity violations regardless of whether they are contaminating (Chakroff et al.,

Table 6
Questions asked about each suicide obituary in Study 2.

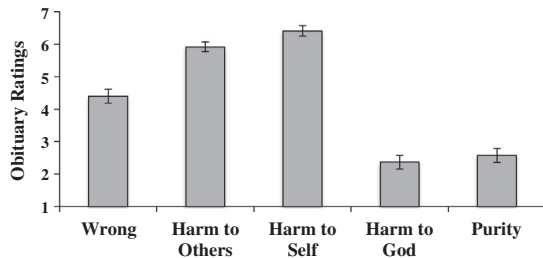| Variable	Question
Wrong	Was it morally wrong for [name] to kill [himself/herself]?
Harm to others	Did [name]'s suicide cause harm to other people?
Harm to self	Did [name]'s suicide cause harm to [himself/herself]?
Harm to God	Did [name]'s suicide cause harm to God?
Purity	Was the purity of [name]'s soul tainted as a result of [his/her] suicide?

Fig. 2. Descriptive statistics for questions asked about each obituary in Study 2. Variables were rated on a Likert scale ranging from 1 (low) to 7 (high). Error bars represent standard errors of the mean.

2013; also see Young & Tsoi, 2013), and with research demonstrating that various non-bodily forms of degradation (e.g., air pollution or littering) can also become linked to moral purity concerns (Feinberg & Willer, 2013).

Certain limitations of this research should be addressed in future investigations. Because linguistic measures of emotions, and particularly disgust, have been proposed as problematic (e.g., Nabi, 2002; Russell et al., 2013), different measures of disgust should be utilized in future studies. Other forms of suicide should be studied as well; for example, the morality of suicide terrorism (Rottman & Kelemen, 2014), assisted suicide, and honor suicide (including sati) are ripe topics for experimental inquiry. Additionally, a broader population pool

(especially the inclusion of participants from other cultures) would allow conclusions to be drawn about the universality or cultural variability of moral judgments of suicide (Henrich et al., 2010). Finally, while this research has demonstrated that purity concerns explain a substantial proportion of the variance in people's moral condemnation of suicide, other factors should also be investigated in future studies. It is especially important to identify and investigate variables that attenuate rather than amplify moral condemnation of suicide, as the factors that mitigate moral judgments of harm-based transgressions (e.g., intention and causality; Cushman, 2008; Pizarro, Uhlmann, & Bloom, 2003) are often distinct from the factors that mitigate moral judgments of purity-based transgressions (Piazza, Russell, & Sousa, 2013; Russell & Giner-Sorolla, 2011; Young & Saxe, 2011).

Overall, this research informs a scientific understanding of the nature and scope of moral cognition, the relevance of emotions to moral judgments, and the dissociation between moral judgments and justifications. Beyond these theoretical contributions, the current findings also shed light on the real-world issue of people's psychological reactions to suicide, demonstrating that moral judgments of suicide are not only complex but connected to potentially unexpected, implicit conceptual concerns. A greater understanding of the processes that are relevant to the condemnation of suicide victims may prove useful for the millions worldwide who are affected by this widespread tragedy.

Table 7
Correlations between variables in Study 2.

	Harm to others	Harm to self	Harm to God	Purity
Wrong	.21	.16	.46[***]	.63[***]
Harm to others		.20	.18	.04
Harm to self			.07	−.02
Harm to God				.72[***]

[*] p < .05.
[**] p < .01.
[***] p < .001.

Table 8
Results of the Study 2 linear regression analyses of suicide obituaries, with moral wrongness as the outcome variable. Beta values represent unstandardized regression coefficients. Significant predictors are bolded.

Predictor	Beta	SE (B)	t	p	Semi-partial correlation
Harm to others	0.24	0.12	1.93	.057	.156
Harm to self	0.20	0.11	1.72	.089	.140
Harm to God	−0.06	0.12	−0.49	.628	−.039
Purity	**0.67**	**0.12**	**5.62**	**.000**	**.456**

Acknowledgments

Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.cognition.2013.11.007.

References

Alighieri, D. (2000). *Inferno*. (R. Hollander & J. Hollander, Trans.) New York: Anchor Books (Original work published 1314).

Battin, M. P., & Mayo, D. J. (Eds.). (1980). *Suicide: The philosophical issues*. New York: St. Martin's Press.

Bering, J. (2006). The folk psychology of souls. *Behavioral and Brain Sciences, 29*(5), 453–462.

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6*(1), 3–5. http://dx.doi.org/10.1177/1745691610393980.

Chakroff, A., Dungan, J., & Young, L. (2013). Harming ourselves and defiling others: What determines a moral domain? *PLoS ONE, 8*(9), e74434. http://dx.doi.org/10.1371/journal.pone.0074434.s003.

Chapman, H. A., & Anderson, A. K. (2013). Things rank and gross in nature: A review and synthesis of moral disgust. *Psychological Bulletin, 139*(2), 300–327. http://dx.doi.org/10.1037/a0030964.

Cushman, F. (2008). Crime and punishment: Distinguishing the roles of causal and intentional analyses in moral judgment. *Cognition, 108*, 353–380. http://dx.doi.org/10.1016/j.cognition.2008.03.006.

DeScioli, P., Gilbert, S. S., & Kurzban, R. (2012). Indelible victims and persistent punishers in moral cognition. *Psychological Inquiry, 23*(2), 143–149. http://dx.doi.org/10.1080/1047840X.2012.666199.

Ditto, P. H., Liu, B. L., & Wojcik, S. P. (2012). Is anything sacred anymore? *Psychological Inquiry, 23*(2), 155–161. http://dx.doi.org/10.1080/1047840X.2012.669248.

Feinberg, M., & Willer, R. (2013). The moral roots of environmental attitudes. *Psychological Science, 24*(1), 56–62. http://dx.doi.org/10.1177/0956797612449177.

Gallup, G. (1978). *The Gallup poll: Public opinion 1971–1977*. (Vol. 1). Wilmington, DE: Scholarly Resources.

Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology, 96*(5), 1029–1046.

Graham, J., Nosek, B. A., Haidt, J., Iyer, R., Koleva, S., & Ditto, P. H. (2011). Mapping the moral domain. *Journal of Personality and Social Psychology, 101*(2), 366–385. http://dx.doi.org/10.1037/a0021847.

Gray, K., & Wegner, D. M. (2009). Moral typecasting: Divergent perceptions of moral agents and moral patients. *Journal of Personality and Social Psychology, 96*(3), 505–520. http://dx.doi.org/10.1037/a0013748.

Gray, K., & Wegner, D. M. (2012). Morality takes two: Dyadic morality and mind perception. In P. R. Shaver & M. Mikulincer (Eds.), *The social psychology of morality: Exploring the causes of good and evil* (pp. 109–127). Washington, DC: American Psychological Association.

Gray, K., Young, L., & Waytz, A. (2012). Mind perception is the essence of morality. *Psychological Inquiry, 23*(2), 101–124. http://dx.doi.org/10.1080/1047840X.2012.651387.

Greene, J. D. (2007). The secret joke of Kant's soul. In W. Sinnott-Armstrong (Ed.), *Moral psychology. The neuroscience of morality: Emotion, brain disorders, and development* (Vol. 3, pp. 35–79). Cambridge, MA: MIT Press.

Gutierrez, R., & Giner-Sorolla, R. (2007). Anger, disgust, and presumption of harm as reactions to taboo-breaking behaviors. *Emotion, 7*(4), 853–868. http://dx.doi.org/10.1037/1528-3542.7.4.853.

Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review, 108*(4), 814–834.

Haidt, J. (2012). *The righteous mind: Why good people are divided by politics and religion*. New York: Pantheon.

Haidt, J., Koller, S., & Dias, M. (1993). Affect, culture, and morality, or is it wrong to eat your dog? *Journal of Personality and Social Psychology, 65*(4), 613–628.

Hauser, M., Cushman, F., Young, L., Jin, R. K., & Mikhail, J. (2007). A dissociation between moral judgments and justifications. *Mind & Language, 22*(1), 1–21.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences, 33*, 61–83. http://dx.doi.org/10.1017/S0140525X0999152X.

Horberg, E. J., Oveis, C., Keltner, D., & Cohen, A. B. (2009). Disgust and the moralization of purity. *Journal of Personality and Social Psychology, 97*(6), 963–976. http://dx.doi.org/10.1037/a0017423.

Inbar, Y., Pizarro, D. A., & Bloom, P. (2009). Conservatives are more easily disgusted than liberals. *Cognition and Emotion, 23*(4), 714–725. http://dx.doi.org/10.1080/02699930802110007.

Koleva, S. P., Graham, J., Iyer, R., Ditto, P. H., & Haidt, J. (2012). Tracing the threads: How five moral concerns (especially Purity) help explain culture war attitudes. *Journal of Research in Personality, 46*(2), 184–194. http://dx.doi.org/10.1016/j.jrp.2012.01.006.

Nabi, R. L. (2002). The theoretical versus the lay meaning of disgust: Implications for emotion research. *Cognition and Emotion, 16*(5), 695–703. http://dx.doi.org/10.1080/02699930143000437.

Nichols, S. (2004). *Sentimental rules: On the natural foundations of moral judgment*. New York: Oxford University Press.

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review, 84*(3), 231–259.

Open Science Collaboration. (2012). An open, large-scale, collaborative effort to estimate the reproducibility of psychological science. *Perspectives on Psychological Science, 7*, 657–660. http://dx.doi.org/10.1177/1745691612462588.

Piazza, J., Russell, P. S., & Sousa, P. (2013). Moral emotions and the envisaging of mitigating circumstances for wrongdoing. *Cognition and Emotion, 27*(4), 707–722. http://dx.doi.org/10.1080/02699931.2012.736859.

Pizarro, D. A., Uhlmann, E., & Bloom, P. (2003). Causal deviance and the attribution of moral responsibility. *Journal of Experimental Social Psychology, 39*(6), 653–660. http://dx.doi.org/10.1016/S0022-1031(03)00041-6.

Preston, J. L., & Ritter, R. S. (2012). Cleanliness and godliness: Mutual association between two kinds of personal purity. *Journal of Experimental Social Psychology, 48*(6), 1365–1368. http://dx.doi.org/10.1016/j.jesp.2012.05.015.

Ross, L. T., & Kaplan, K. J. (1994). Life ownership orientation and attitudes toward abortion, suicide, doctor-assisted suicide, and capital punishment. *Omega, 28*(1), 17–30.

Rottman, J., & Kelemen, D. (2014). The morality of martyrdom and the stigma of suicide. *Behavioral and Brain Sciences, 37*(4).

Royzman, E. B., Leeman, R. F., & Baron, J. (2009). Unsentimental ethics: Towards a content-specific account of the moral-conventional distinction. *Cognition, 112*(1), 159–174. http://dx.doi.org/10.1016/j.cognition.2009.04.004.

Rozin, P., Lowery, L., Imada, S., & Haidt, J. (1999). The CAD triad hypothesis: A mapping between three moral emotions (contempt, anger, disgust) and three moral codes (community, autonomy, divinity). *Journal of Personality and Social Psychology, 76*(4), 574–586.

Russell, P. S., & Giner-Sorolla, R. (2011). Moral anger is more flexible than moral disgust. *Social Psychological and Personality Science, 2*(4), 360–364. http://dx.doi.org/10.1177/1948550610391678.

Russell, P. S., & Giner-Sorolla, R. (2013). Bodily moral disgust: What it is, how it is different from anger, and why it is an unreasoned emotion. *Psychological Bulletin, 139*(2), 328–351. http://dx.doi.org/10.1037/a0029319.

Russell, P. S., Piazza, J., & Giner-Sorolla, R. (2013). CAD revisited: Effects of the word *moral* on the moral relevance of disgust (and other emotions). *Social Psychological and Personality Science, 4*(1), 62–68. http://dx.doi.org/10.1177/1948550612442913.

Sawyer, D., & Sobal, J. (1987). Public attitudes toward suicide demographic and ideological correlates. *The Public Opinion Quarterly, 51*(1), 92–101.

Seidel, A., & Prinz, J. (2013). Sound morality: Irritating and icky noises amplify judgments in divergent moral domains. *Cognition, 127*(1), 1–5. http://dx.doi.org/10.1016/j.cognition.2012.11.004.

Shweder, R. A., Mahapatra, M., & Miller, J. G. (1987). Culture and moral development. In J. Kagan & S. Lamb (Eds.), *The emergence of morality in young children* (pp. 1–83). Chicago: University of Chicago Press.

Sinnott-Armstrong, W., & Wheatley, T. (2013). Are moral judgments unified? *Philosophical Psychology.* http://dx.doi.org/10.1080/09515089.2012.736075.

Spielberger, C. D., Jacobs, G., Russell, S., & Crane, R. S. (1983). Assessment of anger: The state-trait anger scale. In J. N. Butcher & C. D. Spielberger (Eds.). *Advances in personality assessment* (Vol. 2, pp. 161–189). Hillsdale, NJ: Lawrence Erlbaum.

Tetlock, P. E. (2003). Thinking the unthinkable: sacred values and taboo cognitions. *Trends in Cognitive Sciences, 7*(7), 320–324. http://dx.doi.org/10.1016/S1364-6613(03)00135-9.

Turiel, E., Killen, M., & Helwig, C. C. (1987). Morality: Its structure, functions, and vagaries. In J. Kagan & S. Lamb (Eds.), *The emergence of morality in young children* (pp. 155–244). Chicago: University of Chicago Press.

World Health Organization (2005, January). *WHO European ministerial conference on mental health.* Helsinki, Finland.

Young, L., & Saxe, R. (2011). When ignorance is no excuse: Different roles for intent across moral domains. *Cognition, 120*(2), 202–214. http://dx.doi.org/10.1016/j.cognition.2011.04.005.

Young, L., & Tsoi, L. (2013). When mental states matter, when they don't, and what that means for morality. *Social and Personality Psychology Compass, 7*(8), 585–604. http://dx.doi.org/10.1111/spc3.12044.

Online Supplementary Materials

Additional Methods

Participants were presented with all of the following obituaries, in random order. Each

participant saw either eight suicide obituaries or eight homicide obituaries. Other words in

brackets were counterbalanced between subjects.

[Jessica/Michael] Dunn, who was 25 years old, died on August 18, 2008 due to
[suicide/homicide].
[Jessica/Michael] had recently begun a career in researching alternative energy
solutions, and was already making strides in devising more sustainable power systems.
[Her/His] supervisor wrote: "[Jessica/Michael] had the most exceptional mind. [She/He]
had a natural talent for understanding complex problems, and had recently been
nationally recognized by creating an entirely new approach to developing hydroelectric
energy. Many had looked forward to witnessing the broad impact of [her/his] future
endeavors."
[Jessica/Michael] had graduated from Princeton University with highest honors
and had been awarded a fellowship for [her/his] further pursuits. [Her/His] talents as an
innovator had begun to have an unfathomable influence on solving the energy crisis, and
will not be forgotten.

[Darlene/Dave] Fisher, who was 67 years old, died on July 1, 2008 due to
[suicide/homicide].
[Darlene/Dave] was the head scientist at a major institute for theoretical research
in astrophysics, and had made huge strides in the field of magnetohydrodynamics. A
collaborator said, "[Darlene/Dave] was the most gifted thinker I knew, and was naturally
skilled at conducting research. [She/He] had produced some remarkable work during
[her/his] career, for which [she/he] had recently been awarded the prestigious Kavli Prize.
[Her/His] achievements awed anyone who knew of them."
[Darlene/Dave] produced a very large body of work during [her/his] lifetime, and
was a well-respected scholar. [Her/His] natural ability to understand the physical world
will be remembered by everyone who was acquainted with [her/his] research.

[Beth/Ben] Jones, who was 24 years old, died on November 4, 2008 due to
[suicide/homicide].
[Beth/Ben] was very family-oriented, and had been planning a large family
reunion with [her/his] extended relatives. [Her/His] older sister wrote: "[Beth/Ben] was
the best little [sister/brother] I could have ever hoped for, and I cherished the times that I
spent with [her/him]. [She/He] had a very kind heart, and [her/his] lovable personality
won everybody over. It's not surprising that [she/he] was always surrounded by close
friends. I had been looking forward to seeing our relationship mature throughout the
future."

[Beth/Ben] is survived by [her/his] parents, Kathy and Nick, [her/his] sister, Janet, and [her/his] brother, David. [She/He] is also survived by her grandparents, as well as many aunts, uncles, and cousins.

[Kristy/Ryan] Johnson, who was 65 years old, died on October 23, 2008 due to [suicide/homicide].

[Kristy/Ryan] had dedicated [herself/himself] to caring for [her/his] large family, and had recently witnessed the birth of [her/his] eleventh grandchild. [Her husband/His wife] wrote: "[Kristy/Ryan] was the perfect spouse. We had spent our lives together and [he/she] was always there for me when I needed [her/him] most. [Kristy/Ryan] loved [her/his] family more than anything, and spent much of [her/his] time visiting [her/his] children and grandchildren and providing care to [her/his] elderly mother. Growing older with [her/him] had been so wonderful."

[Kristy/Ryan] is survived by [her husband/his wife], six children, and 11 grandchildren. [She/He] is also survived by [her/his] mother, Pam, and three sisters.

[Annie/Gordon] Matthews, who was 27 years old, died on June 8, 2008 due to [suicide/homicide].

[Annie/Gordon] was a top graduate student in the mathematics department at Stanford University, and had been honored with several awards for [her/his] intellectual abilities. [Her/His] advisor wrote: "To say that [Annie/Gordon] was an extremely brilliant student is an understatement. [Her/His] ease at solving difficult problems was obvious from looking at the groundbreaking calculus theorem [she/he] was working on at the time of [her/his] death. I, for one, know that [her/his] future accomplishments would have been incredibly impressive."

[Annie/Gordon] was the recipient of several notable merit scholarships and fellowships, and [she/he] was already on [her/his] way to becoming a well-regarded mathematician. The memory of [her/his] outstanding abilities and unfulfilled academic potential will live on.

[Sarah/Joel] Campbell, who was 26 years old, died on May 17, 2008 due to [suicide/homicide].

[Sarah/Joel] was very close to [her/his] family, especially [her/his] two young children. [Her/His] husband wrote: "[Sarah/Joel] was absolutely wonderful as a [wife and mother/husband and father]. [She/He] was extremely selfless and loving, and [she/he] showed unbounded devotion to our family. [Sarah/Joel] truly enjoyed being a caregiver, and [she/he] fully dedicated herself to nurturing our children and being the best [mother/father] [she/he] could be. I can't tell you how much I was looking forward to raising our children with [her/him]."

[Sarah/Joel] is survived by [her husband, Ron/his wife, Katie], [her/his] daughter, Julie, and [her/his] son, Rick. [She/He] is also survived by [her/his] parents, Amy and Tom.

[Melissa/Arthur] King, who was 64 years old, died on March 31, 2008 due to [suicide/homicide].

[Melissa/Arthur] was an especially gifted scientist, and had spent [her/his] career as an organic chemist developing new medicines for serious diseases. A colleague of [hers/his] said, "[Melissa/Arthur] had a mind that was built for science. [She/He] intuitively knew the best ways to approach a problem, and [her/his] research had produced some new developments that were revolutionizing the synthesis of anti-cancer agents. I know that [Melissa/Arthur]'s accomplishments have left a strong legacy."

[Melissa/Arthur]'s work in medicine has been incredibly influential. [She/He] had single-handedly developed several compounds that have been successful in fighting cancer. [Her/His] life's work will continue to impress and inspire others for years to come.

[Louise/Larry] Parker, who was 68 years old, died on January 11, 2008 due to [suicide/homicide].

[Louise/Larry] had always been very close with [her/his] siblings, and had recently spent the holidays with all five of them. [Her brother Roger/His sister Karen] wrote, "[Louise/Larry] was a terrific [sister/brother]. [She/He] was a joy to be around, and always knew how to make a person laugh. [Her/His] charm and energy were contagious and appreciated by everyone who met [her/him]. [Louise/Larry] couldn't go anywhere without running into people [she/he] knew. I've been truly lucky to have spent so many quality years with [her/him]."

[Louise/Larry] is survived by [her/his] brothers, Mark and Roger, and three sisters: Geraldine, Karen, and Theresa. [Her/His] memory will live on in the hearts of many.

Additional Results

In Study 2, participants who were more politically conservative found suicide to be more morally wrong, $r(87) = .44, p < .001$. Similarly, participants who were more religious found suicide to be more morally wrong, $r(85) = .49, p < .001$. Critically, however, political conservatism and religiosity did not account for the regression results reported in Study 2. When political conservatism and religiosity were controlled for in the regression analysis, obituary purity ratings remained significant predictors of moral wrongness ($p < .001$). Even when the analyses were restricted to non-religious liberals (ratings of political conservatism < 4 and ratings of religiosity < 4), purity ($B = 1.08, p < .05$) continued to predict moral judgments of suicide, whereas harm to others, harm to the self, and harm to God remained non-significant predictors ($ps > .14$). Additionally, purity ratings on the obituaries significantly mediated the

effects of conservatism, $z = 3.95$, $p < .001$, and religiosity, $z = 4.07$, $p < .001$, on moral

judgments of suicide, as confirmed by bootstrap analyses (Preacher & Hayes, 2004) with 5,000

iterations demonstrating that the 99% confidence intervals for the indirect effects did not include

0, conservatism: [0.16, 0.64], religiosity: [0.14, 0.66].

References

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect

    effects in simple mediation models. *Behavior Research Methods, Instruments, &*

    Computers, 36(4), 717–731.

Table S1

Results of the regression analyses conducted in three replication studies, with moral wrongness as the outcome variable.   Linear regressions were conducted for Suicide obituaries; logistic regressions were conducted for Homicide obituaries. Betas are unstandardized. Replicated patterns of significance are in bold font.

#	Variable	Replication #1[a]		Replication #2[b]		Replication #3[c]		Replication #4[d]	
		Suicide	Homicide	Suicide	Homicide	Suicide	Homicide	Suicide	Homicide
1	Harm	B = .376*	**B = 1.087****	**B = .333**	B = .370	B = .685***	**B = 3.967*****	B = .276*	**B = .912****
	Purity	**B = .694*****	B = -.019	**B = .588*****	B = -.291	**B = .422*****	B = .487	**B = .737*****	B = .208
2	Anger	**B = -.047**	**B = .375**	**B = -.111**	**B = .286**	**B = .180**	**B = .442**	B = .675***	B = .571
	Disgust	**B = .789*****	**B = -.064**	**B = .591****	**B = -.055**	**B = .529***	**B = .282**	B = .015	**B = -.142**
3	MFQ Harm	**B = -.208**	B = .297	**B = .013**	B = .691*	**B = .143**	B = .797	N/A	N/A
	MFQ Purity	**B = .713*****	**B = .179**	**B = .967*****	B = -.173	**B = 1.078*****	**B = .096**	N/A	N/A
4	Trait Anger	**B = .230**	**B = -.144**	**B = .041**	**B = .011**	B = -.130	B = -.297	N/A	N/A
	Trait Disgust	B = .355	**B = .147**	**B = .476***	**B = -.009**	**B = .714*****	**B = .165**	N/A	N/A

*Note: * = p < .05, ** = p < .01, *** = p < .001.*
[a] Suicide: n = 49; Homicide: n = 53. This first version of the study (conducted in July 2012, prior to Study 1) involved many other variables that were omitted from future studies (see Table S2). The full MFQ (including ratings for fairness, ingroup, and authority concerns) was also administered. Measures of purity and disgust consistently predict moral judgments of suicide.
[b] Suicide: n = 82; Homicide: n = 80. Measures of purity and disgust consistently predict moral judgments of suicide.
[c] Suicide: n = 79; Homicide: n = 81. Measures of purity and disgust consistently predict moral judgments of suicide.
[d] Suicide: n = 96; Homicide: n = 94. The measure of purity predicts moral judgments of suicide.

Table S2

Questions asked about each Suicide / Homicide obituary in Replications #1, #2, #3, and #4.

Variable	Question	Rep. #
Wrong	Was it morally wrong for [name] *to kill [himself/herself] / to be killed*?	1 - 4
Harm$_1$	Did [name]'s *suicide / homicide* cause pain and suffering?	1, 2
Harm$_2$	Did *[name] / [name]'s killer* cause harm by killing *[himself/herself] / [name]*?	3
Harm$_3$	Did [name]'s *suicide / death* deprive [him/her] of future aspirations, pleasures, and experiences?	4
Purity$_1$	Was the purity of [name]'s soul tainted as a result of [his/her] *suicide / homicide*?	1, 2
Purity$_2$	Did *[name] / [name]'s killer* taint the purity of *[his/her] / his* soul by killing *[himself/herself] / [name]*?	3
Purity$_3$	Did [name]'s *suicide / death* violate the sacredness of [his/her] life?	4
Anger$_1$	When you think about [name]'s *suicide / death*, do you experience feelings of anger?	1 - 3
Anger$_2$	Do you feel outraged when thinking about [name]'s *suicide / death*?	4
Disgust$_1$	When you think about [name]'s *suicide / death*, do you experience feelings of disgust?	1 - 3
Disgust$_2$	Do you feel sickened when thinking about [name]'s *suicide / death*?	4
Natural	*Did [name] violate the natural order of things by taking [his/her] life? / Did [name's] death violate the natural order of things?*	1
Scorn	When you think about [name]'s *suicide / death*, do you experience feelings of scorn/contempt?	1
Sadness	When you think about [name]'s *suicide / death*, do you experience feelings of sadness?	1
Damage	Was [name]'s *suicide / homicide* damaging?	1
Obligation	Do you think that [name] had unfulfilled obligations to others at the time of [his/her] death?	1
Disrespect	Was [name]'s death a sign of disrespect to his/her community?	1
PlayGod	*Was [name] playing God by killing himself/herself? / Was [name]'s killer playing God by killing [name]?*	1
HarmGod	Was God harmed by [name]'s *suicide / homicide*?	3
Contaminate	Did [name]'s *suicide / death* contaminate [his/her] physical body?	4

Table S3

Results of the logistic regression analyses of Suicide obituaries, with moral wrongness as the outcome variable. Beta values represent unstandardized regression coefficients. Significant predictors are bolded. Overall, these results mirror those of the linear regression analyses, with the exception of trait disgust becoming a non-significant predictor in Logistic Regression #4.

Regression	Predictor	Beta	SE (B)	Wald	*df*	*p*	Odds ratio
#1	Harm	0.31	0.25	1.54	1	.214	1.37
	Purity	**0.68**	**0.15**	**21.75**	**1**	**.000**	**1.97**
#2	Anger	-0.43	0.24	3.29	1	.070	0.65
	Disgust	**0.75**	**0.24**	**9.83**	**1**	**.002**	**2.12**
#3	MFQ Harm	-0.71	0.43	2.76	1	.096	0.49
	MFQ Purity	**1.35**	**0.32**	**18.24**	**1**	**.000**	**3.87**
#4	Trait Anger	-0.19	0.19	1.03	1	.310	0.82
	Trait Disgust	0.19	0.21	0.83	1	.361	1.21

(a)   **Obituary Purity Judgments**

B = 0.55***   B = 0.55***

B = 0.23, n.s. (B = 0.53***)

Political Conservatism ⟶ **Suicide Wrongness**

(b)   **MFQ Purity Concerns**

B = 0.35***   B = 0.94***

B = 0.15, n.s. (B = 0.53***)

Political Conservatism ⟶ **Suicide Wrongness**

(c)   **Obituary Purity Judgments**

B = 0.40***   B = 0.49***

B = 0.33*** (B = 0.53***)

Religiosity ⟶ **Suicide Wrongness**

(d)   **MFQ Purity Concerns**

B = 0.36***   B = 0.79***

B = 0.23* (B = 0.53***)

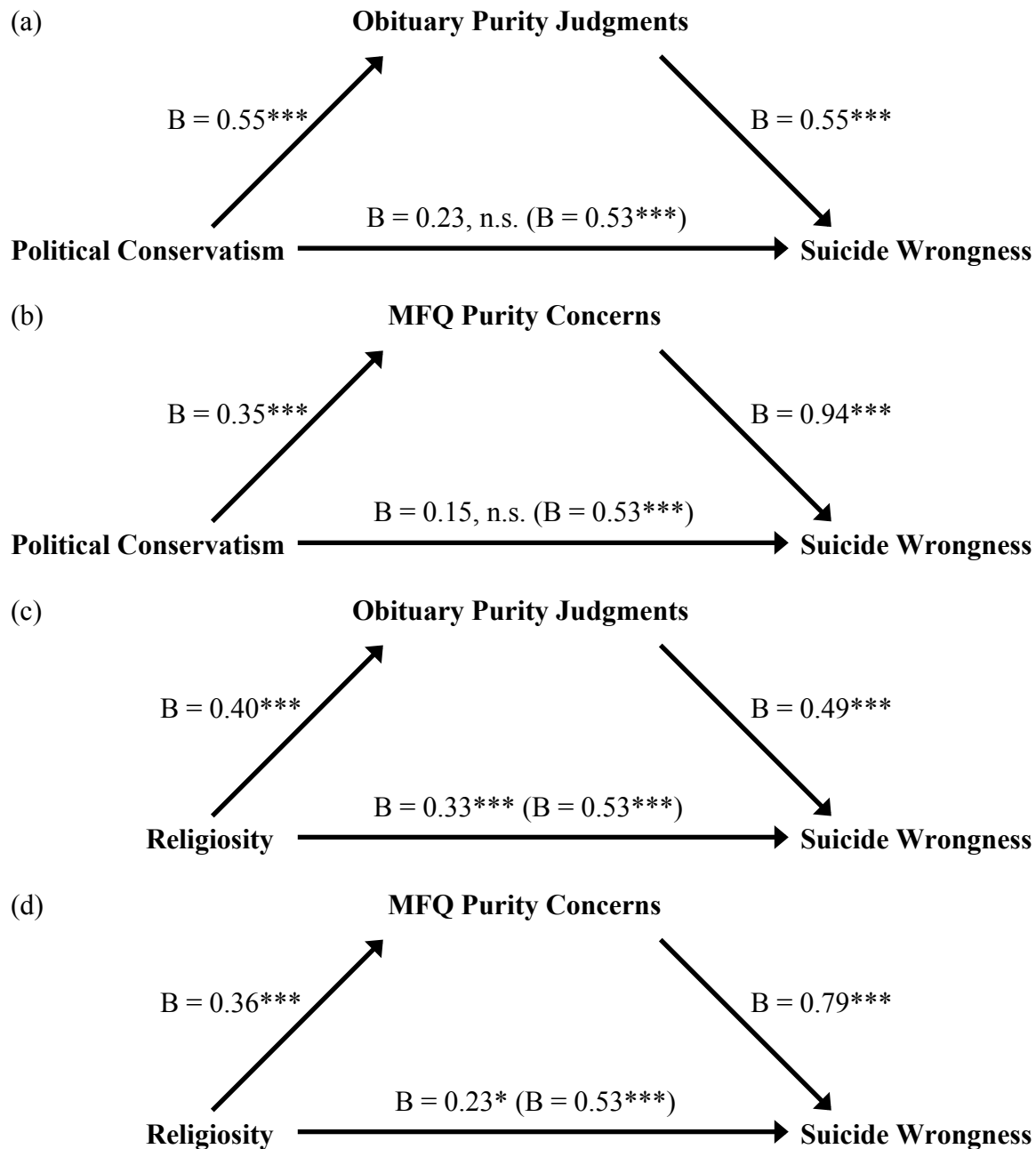**Religiosity** ⟶ **Suicide Wrongness**

Figure S1. Obituary purity ratings significantly mediated the effect of conservatism on moral judgments of suicide (a), $z = 3.49$, $p < .001$, as confirmed by a bootstrap analysis with 5,000 iterations demonstrating that the 99% confidence interval for the indirect effect did not include 0 [0.10, 0.58]. MFQ purity ratings were also found to significantly mediate the effect of conservatism on moral judgments of suicide (b), $z = 4.02$, $p < .001$; 99% CI: [0.17, 0.62]. Mediation analyses were similar when conservatism was replaced with religiosity; obituary purity ratings partially but significantly mediated the effect of religiosity on moral judgments of suicide (c), $z = 3.37$, $p < .001$; 99% CI: [0.08, 0.33], as did MFQ purity ratings (d), $z = 3.99$, $p < .001$; 99% CI: [0.14, 0.54]. Beta values represent unstandardized regression coefficients.