

Folk Moral Objectivism and Its Measurement

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Abstract

Experimental philosophers and psychologists investigate whether people perceive moral judgments to be objectively true or false. Existing research focuses on a single dimension of ‘perceived objectivity’. The present research examines whether multiple dimensions of folk moral objectivity underlie moral judgments. It also examines whether such dimensions relate to perceived objectivity, tolerance, and people’s behavioral intentions to punish norm-violators. Exploratory factor analysis on twenty ethical items revealed three different ways of perceiving moral truth (Independent Truth, Universal Truth, Divine Truth), which each form reliable subscales (Study 1). This three-factor structure was supported by confirmatory factor analysis (Study 2). Each of the dimensions is differently related to perceived objectivity (Study 3). With respect to tolerance, perceived objectivity is a mediator in the relationship between perceiving moral truth as absolute or universal and tolerance (Study 4). With respect to a willingness to harm measure, Independent Truth is negatively related and Universal Truth is positively related, to people’s punitive attitudes toward norm-violators.

*Keywords: Morality, Moral judgment, Moral objectivity, Tolerance, Willingness to harm*

## Folk Moral Objectivism and Its Measurement

In the past decade, psychologists and philosophers have started to investigate whether people perceive moral judgments to be objectively true or false by probing intuitions about moral objectivity. Existing research focuses on what is known as ‘perceived objectivity’. This is often probed by two different questions, namely a truth-aptness task and a disagreement task<sup>1</sup> (Goodwin and Darley 2008, 2010; 2012; Wright, Cullum & Schwab 2008; Wright, McWhite & Grandjean 2014). The former measures whether or not people believe that moral judgments are true or false. The latter measures how people respond to moral disagreements, namely whether or not one party is mistaken or that both can be correct. This emerging research literature has found large differences in objectivity ascriptions between individuals and between different moral issues, which has been termed metaethical pluralism (Wright, Grandjean & McWhite 2013).

Existing experimental research measures folk moral objectivity on a single dimension of perceived objectivity<sup>2</sup>. There are, however, good reasons to regard folk moral objectivity as multidimensional. First, people who perceive moral judgments as objective can have diverging reasons for doing so. Some people believe, for instance, that objective morality is constructed by the commands of a divine entity (Piazza & Landy 2013; Sarkissian & Phelan 2019; Yilmaz & Bahçekapili 2015). Others might regard moral judgments as true because they are derived from more basic moral truths (Kant 1785/1959). Second, someone who does not regard morality as objective might regard moral judgments as true relative to a culture (Harman 2012; Wong 2006).

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<sup>1</sup> With the exception of Theriault, Waytz, Heiphetz and Young (2017) who use behavioral and neuroimaging methods to investigate whether moral claims are perceived as more preference-like or more fact-like.

<sup>2</sup> A measurement scale provided by Forsyth (1980), his Ethics Position Questionnaire, does measure distinct ethical views. In light of Goodwin and Darley’s (2010) concerns of the relevance of the EPQ for measuring moral objectivity, this research attempts to develop a scale that can measure perceived objectivity judgments.

Alternatively, however, she might hold that moral judgments do not purport to describe an external states of affairs and are therefore neither true nor false; for example, as mere expressions of the subjective emotional states (Ayer 1936; Blackburn 1993)<sup>3</sup>.

To contribute to existing experimental research on perceived objectivity, I present a scale for measuring folk moral objectivism (FMO), henceforth ‘the FMO-scale’. This scale accommodates universalism, absolutism, divine command theory, relativism, and what I call ‘no-truth’. The main innovation is that the FMO-scale allows for the possibility that folk moral objectivity has several dimensions. The scale is designed to test whether folk intuitions about moral objectivity are best captured in terms of a single psychological construct or by different psychological constructs. If folk attitudes toward moral truth and falsity are indeed best captured by multiple dimensions this has methodological implications for a wide range of experimental research in social psychology, including the ways in which experimental studies on folk moral objectivity have to be conducted.

I will first introduce different philosophical views that can underlie moral judgment and I discuss how the multidimensionality of folk moral objectivity has implications for different lines of research in social psychology. In Study 1, I use exploratory factor analysis to test whether there are common factors underlying twenty items measuring five distinct ethical views. This yields a three-factor structure and reliable subscales. In Study 2, I test whether the three-factor structure is supported by confirmatory factor analysis. Studies 3-5 serve to investigate whether the scale dimensions relate to perceived objectivity, tolerance, and willingness to harm.

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<sup>3</sup> In analytical philosophy, this view on the semantics of moral statements falls under the heading of non-cognitivism. According to non-cognitivist views (e.g. emotivism or expressivism), moral statements do not intend to describe matters of facts but are perceived as ways of expressing non-cognitive mental states such as feelings, emotions or desires.

### **Beyond Perceived Objectivity**

#### *Objectivity as a Multi-Dimensional Construct*

So far, experimental research has focused on perceived objectivity, which has been a very fruitful endeavor. It is an empirical question, however, whether a single dimension of perceived objectivity captures folk attitudes towards the truth or falsity of moral judgments. People's intuitions about this matter might vary on multiple dimensions. In this paper, I also consider universalism, absolutism, divine command theory, and the view that there are no moral truths.

Universalism, absolutism and divine command theory are different theories about why moral judgments are true. According to universalism, moral judgments are true only if they are based on universally binding moral norms that apply to anyone and everywhere (Hare, 1954; Quintelier, De Smet, & Fessler, 2013). An example of moral universalism can be found, for example, in the Universal Declaration of Human Rights. Article 1 of the declaration states that "*all human beings* are born free and equal in dignity and rights" and according to article 3 "*everyone* has the right to life, liberty and security of person" and so forth (The United Nations, 1948, my italics).

Moral absolutism goes beyond universalism in that it also holds that true moral judgments are derived from more basic moral truths. The underlying idea is that the core of morality is determined by a set of general rules and principles which all hold true, without exception (Wong 2006). Kant argued, for example, that moral obligations derive from the Categorical Imperative, which denotes the absolute moral requirement that one should "act only

according to that maxim by which you can at the same time will that it should become a universal law” (1785/1959, p. 421). Kant famously argued that this implies that lying is prohibited even if you could save someone’s life by lying about her whereabouts.

Divine command theory is the view that whether an action is morally right or wrong depends on the commands of a divine being (Murphy, 1998; Quinn, 1978). In other words, true moral judgments are based on divine commands. Those who support this theory regard religious texts and/or authorities as sources of moral knowledge. Morality, then, is what a divine being prescribes and acting morally consists of obeying divine commands. Each of these three positions entails perceived objectivity (see below for discussion). However, someone who denies divine command theory might still subscribe to absolutism. And someone who denies absolutism might still subscribe to universalism.

Just as there are different ways in which someone might affirm the objectivity of moral judgments, there are different ways in which someone might reject this. First, someone who denies moral objectivity might be a relativist and hold that the truth or falsity of a moral judgment is relative to cultures (Dreier, 1990; Harman, 1975; Wong, 2006). Second, people might also deny that there are moral truths. Perhaps they regard moral judgments as neither true nor false because they are expressions of emotions, which have no truth-value (expressivism; Ayer, 1936; Stevenson 1944, 1963). They could also believe that all moral beliefs are false (the error theory; Joyce, 2006; Mackie, 1977). I refer to this position as ‘the no-truth view of moral judgments’.

Some of the views discussed are closely related. As formulated above, absolutism entails universalism. This makes it rather unlikely that these positions reflect different dimensions of objectivity. One can, however, endorse universalism (and believe that norms have universal

application) without subscribing to absolutism (and believing that such norms are derived from more basic moral principles). Furthermore, it is informative to see to what extent people's responses reflect the degree to which positions are similar conceptually. It is possible that people's endorsement of these views is predicted by a similar psychological mechanism.

All views either entail perceived objectivity or its denial. The point of the studies presented below is to determine whether there are important differences within the two camps. In order to tease this out, the FMO-scale does not include perceived objectivity as such. Instead, the relations between the above views and perceived objectivity are used to validate the scale. Note that the correlations are unlikely to be perfect. It is an open question whether the different relationships that exist between these different views also constitute a psychological reality. The question is whether and how views about moral objectivity map onto human psychology. A related question is whether and how they relate to people's tolerance toward morally divergent others and their willingness to harm others.

### *The Predictive Power of Folk Moral Objectivism*

Although people's attitudes towards moral truth and falsity are interesting as such, it is also worth inquiring into what explains them and whether they make a difference to people's tolerance judgments and behavioral intentions. As it turns out, there is large variation in perceived objectivity, both intrapersonal and interpersonal, which has been termed meta-ethical pluralism (Wright, Grandjean & McWhite 2013). Moreover, perceived objectivity is related to social distance (Sarkissian, Park, Tien, Wright & Knobe 2011), religious background (Goodwin & Darley 2008; Sarkissian & Phelan 2019; Yilmaz & Bahçekapili 2015), and age (Beebe,

Qiaoan, Wysocki & Endara 2015; Beebe & Sackris, 2016). People with high scores on the personality trait of being open to experience tend to be moral relativists (Feltz and Cokely 2008). Those who have a competitive orientation towards argumentation are more often objectivists than those who have a cooperative attitude (Fisher et al. 2017). And Goodwin and Darley (2010) show that relativists score higher on disjunctive thinking.

As Sarkissian and Phelan (2019) observe, philosophers have suggested a relationship between religion and moral objectivity for more than two thousand years. Sarkissian and Phelan's research shows that there is also an intricate psychological relationship between religion and moral objectivity. For example, one study shows that belief in a punishing God predicts people's rejection of moral relativism. In a different study, the authors show that priming religious believers belonging to Abrahamic faiths with divinity concepts increases their objectivity ascriptions. Moreover, the researchers show that when people are generally prompted to believe in objective morality, they are also more inclined to believe in a punishing God. Yilmaz and Bahçekapili (2015) observed a similar relationship between religion and people's attitudes toward moral truth and falsity. They found that if people are primed with religious terms, they become increasingly objectivistic about morality, and when they are being primed with moral subjectivism they become less convinced of the existence of God. Consequently, religion and moral objectivity seem to be intertwined in particular circumstances, and it therefore makes sense to examine whether divine command ethics is a separate dimension of folk moral objectivity.

Existing research also suggests that folk attitudes towards moral truth make a difference regarding people's tolerance judgments (Goodwin & Darley, 2008; Nichols, 2004; Sarkissian et al. 2011; Wright, McWhite, & Grandjean, 2014). Perceived objectivity is associated with how



comfortable people feel with interacting with morally divergent others (Goodwin and Darley 2012, Wright et al., 2014). Priming people with moral objectivism makes them twice as likely to donate to charity (Young and Durwin 2013), and priming them with moral relativism makes them more likely to cheat on an incentivized raffle and to engage in petty theft (Rai & Holyoak 2013; see also Tian 2008 about the relationship between moral relativism and moral behavior). This suggests that there is individual variation in how people construe moral judgments. And this opens up the intriguing possibility that those who agree about a particular moral issue (e.g. they both believe that abortion is morally wrong) may have different tolerance judgments toward others because they disagree about the status of moral judgments. In short, there is a surge of research on the effects of folk attitudes toward moral truth on a range of different variables. However, the relevance of research on folk moral objectivity goes beyond research on perceived objectivity.

### *The psychological distinctiveness of moral attitudes*

The fact that people have different views on the status of moral judgments is something that distinguishes moral attitudes from non-moral attitudes. The idea that people's treatment of moral issues is psychologically distinctive from their treatment of non-moral issues (i.e. conventions, preferences, taste, etc.) has been well established by existing research. From a young age, children have the basic capacity to distinguish moral violations (e.g. hitting someone) from conventional violations (e.g. talking out of turn) (Turiel, 1983, 1998; Smetana, 1981, 1983; Smetana and Braeges, 1990). People perceive violations of moral rules as less permissible and more serious than violations of conventional rules. Moreover, moral rules are perceived as

authority-independent while conventional rules are perceived as authority-dependent (i.e., issued by decree of an authority figure or institution: moral rules cannot be changed in this way).

Violations of moral rules are also perceived as generalizably wrong (i.e. wrong in other countries too) while the wrongness of conventional violations is perceived as local (i.e., wrong in a specific social situation, or culturally specific). Finally, justifications for moral rules are often given in terms of harm and welfare while justifications of conventional rules are given in terms of social acceptability.

The psychological distinction between moral and non-moral attitudes is also shown by the relationship that moral attitudes have with interpersonal tolerance. Haidt, Rosenberg, and Hom (2003) show that people are least supportive of moral diversity compared to other kinds of diversity. Moreover, perceiving an issue as moral instead of conventional increases people's intolerance toward morally divergent others, especially so in romantic or work contexts (Wright et al. 2008). Research by Skitka and colleagues shows that attitudes held with strong moral conviction ('moral mandates') increase people's preferred social and physical distance toward morally divergent others, it decrease people's goodwill and cooperativeness to resolve moral conflicts, and make people less willing to agree to procedural solutions to resolve disagreements (Mullen & Skitka 2006; Skitka et al. 2005; Skitka & Mullen 2002). What is crucial is that moral mandates explain unique variance beyond otherwise strong non-moral attitudes (Skitka et al. 2005). Hence, there is something special about moral attitudes, compared to non-moral attitudes, but what is it?

One thing that is special about moral attitudes according to research on the distinction between moral and conventional rules is that people generalize moral rules and violations. People are inclined to generalize moral rules to other contexts and situations, including different

countries and cultures. This strongly resembles the philosophical view of moral universalism that I discussed above. Haidt, Rosenberg and Hom (2003, p. 6-7) explicitly build on the idea that people perceive moral judgments to apply universally.

What is special about moral attitudes compared to non-moral attitudes, according to Skitka et al. (2005) is that people perceive moral judgments as having *universal* application, that moral convictions refer to *absolute* beliefs that something is right or wrong, and that moral convictions are perceived as facts about the world. Citing Shweder (2002), Skitka et al. (2005) write that “[G]ood and bad are experienced as objective characteristics of phenomena and not just as verbal labels that people attach to feelings” (Skitka et al. 2005, p. 896-897).

The authors of the above studies unite different philosophical views, namely moral objectivity, universalism, and absolutism to explain the effects that moral attitudes have beyond non-moral attitudes. Given that these are distinct philosophical views, it is unclear whether they are a psychological conjoint, as assumed by existing research, or that they play different psychological roles. If folk moral objectivity is indeed a multidimensional matter, it becomes possible that these views play different psychological roles, and that they have different relationships to interpersonal tolerance and other variables of interest. It is therefore imperative that we investigate whether or not what is assumed to underlie moral judgments - namely attitudes toward their truth and falsity - fits on a single dimension of perceived objectivity or is best captured by multiple dimensions.

*The Present Research*

The goal of this paper is to investigate folk attitudes towards moral truth and falsity. Existing research measured perceived objectivity on a single dimension and found large variance between individuals and between different moral statements. This metaethical pluralism in objectivity ascriptions may occur when individuals are presented with disagreement tasks about different moral issues. It is also possible, however, that folk attitudes toward moral truth are multi-dimensional and that individuals have different scores on each of the dimensions. This may, in turn, be differently related to perceived objectivity. To investigate this possibility, I set out to construct a multi-dimensional measurement scale of moral objectivity (Study 1). Subsequently, the three-factor structure that was found was tested in a confirmatory factor analysis (Study 2). The next three studies serve to establish the validity of the scale. Study 3 investigates the relationships between how people score on this scale on the one hand and perceived objectivity on the other. Study 4 concerns the relation to perceived objectivity and interpersonal tolerance. Study 5 concerns the question whether folk moral attitudes make a difference to people's behavioral intentions, namely their willingness to harm others.

## **Study 1: Development of the Measurement Scale**

To investigate people's moral intuitions, the participants in this study were presented with a range of statements. The survey items are based on the positions discussed above: universalism, absolutism, divine command theory, relativism and no-truth. The point of the construction of a scale is to detect latent constructs. This requires exploratory factor analysis rather than principal component analysis (Tabachnik & Fidell, 2001). Participants' responses were analyzed using exploratory factor analysis with maximum likelihood extraction to test the underlying factor

structure. It was then tested whether each of the three latent factors that were found form reliable scales that can be used as dependent and independent variables in subsequent studies. For this study and all studies that are part of this research and are presented below, all measures, manipulations and exclusions are reported. For all studies, sample sizes were determined before any data analysis.

### *Method*

#### *Participants*

Four hundred fourteen participants were recruited via the online service Mechanical Turk and received \$0.50 for their time (188 female;  $M_{\text{age}} = 34$ ,  $SD = 12.59$ ). Amazon's Mechanical Turk provides an appropriate pool of research participants for research in psychology and the social sciences (Buhrmester, Kwang & Gosling, 2011; Paolacci & Chandler, 2014). Participants who did not complete the survey or failed to answer attention checks correctly ( $N = 10$ ) were excluded from statistical analyses. The attention checks consisted of an item in the middle of the survey that instructed participants to remember the code word "Purple" and to rate "strongly agree" to that item. Participants were requested to fill out this code in a box on a new screen at the end of the study. Analyses were conducted on the remaining 404 participants.

#### *Materials and Procedure*

Participants received 20 items in a random order and were asked to rate the items on a six-point scale (1: *Strongly disagree*, 6: *Strongly agree*). The items consisted of statements about moral judgments that were developed on a variety of moral views, and were developed on the basis of philosophical literature on moral philosophy. They were further refined by consulting experienced philosophers and psychologists at three different universities and by brainstorm sessions at lab group meetings. A list of five different categories (universalism, absolutism, divine command theory, relativism, and no-truth) of items emerged (see Table 1 in the Appendix). For example, items included “Without the existence of God, nothing is truly morally right or wrong” (divine command theory) and “It is an illusion to think that anything is really morally true or false” (no-truth). This yielded twenty items in five different categories. Items were not reverse-scored for the purpose of factor analysis. Existing literature on scale construction warns against reverse scoring because it can lead to misinterpretation of items by participants and different types of measurement problems (Netemeyer, Bearden, & Sharma 2003; Swain, Weathers & Niedrich 2008). The results of the participants’ responses were analyzed using exploratory factor analysis.

### *Exploratory Factor Analysis*

For all twenty items in the survey, exploratory factor analysis was performed with maximum likelihood extraction and using direct oblimin rotation, which made the assessment of latent constructs possible and also allowed factors to be correlated (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Sample size was determined by multiplying the number of items by factor 10, which suggests a sample of at least 400 participants (Velicer & Fava, 1998).

The data provides evidence for the existence of three separate factors. The significance of Bartlett's test for sphericity ( $\chi^2(190) = 5132.49, p < 0.001$ ) and the value for the Kaiser-Meyer-Olkin test of .938 indicates excellent sampling adequacy (Kaiser, 1974; Tabachnik & Fidell, 2001). Eigenvalues, proportion variance explained, and factor loadings are reported in Table 1 and figure 1 (see Appendix) and visually depicts the distribution of scores between the different dimensions. As Table 1 shows, the items of these three factors loaded highly on only one factor and there are no cross-loadings. This indicates that the factors are distinct and it makes the three-factor structure interpretable and theoretically meaningful. Each factor contains items that strongly discriminate with items of a different factor. Eight items loaded on the first factor, four items loaded on the second factor, and eight items loaded on the third factor. The values of these indicators suggest that the measurement scale has excellent content validity. Consequently, the factors seem quite able to grasp the unobservable constructs under investigation. In light of the fact that item-development was based on theoretical considerations by consulting academic literature and experts in combination with the above results, it was decided to create a measurement scale out of these items and not to expand the list of items at this point.

Items expressing considerations related to relativism and no-truth compose the first factor. Because the items all loaded negatively on this factor, all of the items were reverse-coded. As a consequence, high scores on the scale indicate first, that there are moral truths and second, that they are independent of particular cultures. Because of this, I refer to this dimension as 'Independent Truth'. This scale had a high level of internal consistency (Cronbach's  $\alpha = .90$ ). The second scale contains items that fall under the heading of divine command theory, which is the view that morality is based on a divine entity. This dimension is called "Divine Truth". The Cronbach's alpha score of .93 indicates high internal consistency. The third and final factor

consists of items that express moral universalism and absolutism, which were combined into a scale labeled “Universal Truth”. This scale has a similarly high level of internal consistency (Cronbach’s  $\alpha = .89$ ). Participants who score highly on this scale are more likely to support the idea that there are absolute moral norms that have universal application.

As allowed by the present analysis, and as is often the case for constructs in the social sciences, the factors correlate significantly. The Universal Truth and Independent Truth factors correlated moderately to strongly,  $r(404) = .66, p < .001$ , the Universal Truth and Divine Truth scores correlated moderately,  $r(404) = .54, p < .001$ , and the Universal Truth and Divine Truth scores also correlated moderately,  $r(404) = .38, p < .001$ .

### *Discussion*

Study 1 presented participants with items about a range of moral views: universalism, absolutism, divine command theory, relativism and no-truth. The questions asked were whether people distinguish these positions and along which dimensions their intuitions about the status of moral judgments are structured. Perhaps unsurprisingly, divine command theory maps onto Divine Truth as a separate dimension. Universalism and absolutism turned out to form one dimension, Universal Truth. Given how close they are conceptually, this is not very surprising either<sup>4</sup>.

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<sup>4</sup> There were no cross-loadings between different factors, which suggest that the three factors are genuinely distinct. Of course, it is possible that some items for universalism and absolutism were too similar for people to be able to distinguish them. This is a possible limitation of this study and something to be improved in future research.



The results also show that relativism and no-truth map onto one dimension. From a purely philosophical perspective this may seem a striking finding because relativism and no-truth seem logically inconsistent. That is, if there are no moral truths, then there are no relative moral truths either. However, from a psychological perspective this may be less surprising. This is because relativism and no-truth both reject the existence of a single objective truth. Hence, despite being philosophically distinct views, they consist of the same psychological construct in light of rejecting the idea of a single objective morality. The relativism and no-truth items fit on a single psychological dimension, Independence.

Another noteworthy result is that universalism and absolutism are not on the same psychological dimension as relativism and no-truth. In other words, Independent Truth and Universal Truth seem to be distinct dimensions. Moral judgments that are universally true will be true simpliciter as well as true independently of particular cultures. Even so, what is at stake in these two dimensions differs in that denying the former is different from denying the latter: people's beliefs about whether there are true moral judgments are correlated with, but independent from, their judgments about whether there are absolute moral principles or whether moral judgments are universally true. Yet existing research tacitly assumed that these views vary on a single psychological dimension (Bartels, Bauman, Cushman, Pizarro & McGraw 2016; Haidt, Koller & Dias 1993; Haidt, Rosenberg, and Hom; Skitka et al. 2005; Turiel, 1983, 1998). Hence, researchers were correct that views like objectivism, universalism, absolutism, and so forth, underlie morality. The present research contributes to this by showing that each of these views exist on different psychological dimensions.

At first instance, the fact that Divine Command items load onto Divine Truth is not very surprising. However, theorists have often assumed that divine command ethics imply absolutism

and universalism. Indeed, Sarkissian and Phelan acknowledge this by writing in their abstract that “[s]ome theorists contend that God is viewed as a divine guarantor of right and wrong, rendering morality universal and absolute”. The present research shows, however, that the Divine Truth dimension correlates with, but is distinct from, the Universal Truth dimension. This shows that, from a psychological perspective, adherence to divine command ethics does not imply a commitment to absolutism or universalism (though they are correlated).

In short, this study led to the development of a measurement scale, Folk Moral Objectivism (FMO). The results show that people’s intuitions about moral views vary on at least three distinct dimensions, namely Independent Truth, Divine Truth, and Universal Truth. The items of each of these dimensions form reliable subscales. These results show that moral views that are philosophically distinct do not have to be psychologically distinct. And they suggest that moral objectivity is best seen as a multi-dimensional construct. Of course, the specific selection of item-categories in this study may have constrained the possibility of discovering additional latent dimensions. Nevertheless, the statistical results on the present scale provide indications for a valid measurement scale. The question that I therefore address next is whether the FMO scale structure is confirmed by confirmatory factor analysis. If those results yield negative outcomes, I will consider additional philosophical views that may be part of folk moral objectivity.

## **Study 2**

The next question is whether the factor structure, as revealed by exploratory factor analysis, will be confirmed by confirmatory factor analysis. Therefore, a separate data sample was collected to test whether this is the case. Confirmatory factor analysis is a structural equation modeling

technique that allows one to test whether or not the shared variance of items can indeed be explained by the three-factor structure of Independent Truth, Divine Truth, and Universal Truth.

### *Method*

#### *Participants*

Four hundred ninety participants were recruited via the online service Mechanical Turk and received \$0.50 for their time (212 female;  $M_{\text{age}} = 34$ ,  $SD = 11.80$ ) and were presented with the same set of items as presented in Study 1. Participants who did not complete the survey or failed to answer attention checks ( $N = 9$ ) correctly were excluded from statistical analyses. The attention checks consisted of an item in the middle of the survey that instructed participants to remember the code word “Rose” and to rate “*strongly agree*” to that item. Participants were requested to fill out this code in a box on a new screen at the end of the study.

#### *Materials and Procedure*

Participants received 20 items in a random order and were asked to rate the items on a six-point scale (1: *Strongly disagree*, 6: *Strongly agree*). The items consisted of statements about the status of morality that were developed on the basis of the five moral views discussed above (see Table 1 in the Appendix): universalism, absolutism, divine command theory, relativism, and no-truth. For example, items included “Without the existence of God, nothing is truly morally right or wrong” (divine command theory) and “It is an illusion to think that anything is really morally

true or false” (no-truth). The participants rated their agreement with each item. The results of the participants’ responses were analyzed using confirmatory factor analysis.

### *Confirmatory Factor Analysis*

The confirmatory factor analysis was conducted in R 3.2.3. with the Lavaan package (Rosseel, 2012) using maximum likelihood estimation to test the three-factor solution as found above. To examine the three-factor model as revealed by exploratory factor analysis, CFA was used and the Comparative Fit Index (recommended: CFI > .90), the Standardized Root Mean Square Residual (recommended: SRMR < .08), and the Root Mean Square Error of Approximation (recommended: RSEA <.08) were inspected (Bentler, 1990; Browne & Cudeck, 1993; Hu & Bentler, 1999). Results provided strong support for the three-factor model and indicated that it was a good fit (CFI = .928; SRMR = 0.053; RMSEA = 0.076). Taken together with the results of the exploratory factor analysis, we are more certain that each of the subscales of Independent Truth, Divine Truth, and Universal Truth reliably measures different latent dimensions containing items that form internally consistent subscales and that strongly discriminate between each other.

### *Discussion*

The goal of Study 2 was to test whether the three-factor structure found by exploratory factor analysis in Study 1 would be confirmed by conducting a confirmatory factor analysis on a different data sample. The results of the CFA support the three-factor structure found by EFA.

The scale thereby fulfills the basic requirements that we need for a proper scale: items were developed in extensive brainstorm sessions, all items load strongly on a single factor, there are no cross-loadings, subscales have high reliability, and CFA conducted on a separate dataset confirm the three-factor structure found by EFA. The question that I address next is how FMO relates to perceived objectivity.

### Study 3

In order to validate the FMO-scale, I now investigate whether it captures perceived objectivity. The scale was constructed to measure a wide range of intuitions concerning moral objectivity that are closely related to but distinct from perceived objectivity. Study 1 revealed three dimensions that underlie people's intuitions about moral objectivity. It might be that they predict people's perceived objectivity ascriptions as found in previously conducted experimental studies. If successful, this would confirm that the scale measures what it purports to measure, and thereby support *construct validity* of the measurement scale.

To this end, I use the FMO-scale to replicate a previous study on perceived objectivity. Sarkissian et al. (2011) showed that people vary their ascriptions of objectivity when confronted with moral disagreements between people who have different moral frameworks. The question I ask is whether the dimensions of the measurement scale predict people's ascriptions of objectivity in a moral disagreement involving one party from the same culture and one party from a different culture (the other-culture condition of Sarkissian et al. 2011). In this study, this question was tested and thereby a first step toward validating the measurement scale was taken.

*Method**Participants*

Two hundred five participants were recruited via the online service Mechanical Turk and received \$0.50 for their time (114 female;  $M_{\text{age}} = 35$ ,  $SD = 12.61$ ). Participants who had previously participated in studies that involved the development of the measurement scale were excluded. Participants who did not complete the survey or failed to answer attention checks correctly ( $N = 2$ ) were excluded from statistical analyses. The attention checks consisted of an item in the middle of the survey that instructed participants to remember the code word “Purple” and to rate “*strongly agree*” to that item. Participants were requested to fill out this code in a box on a new screen at the end of the study. Analyses were conducted on the remaining 203 participants. The sample size was based on an assessment of how the number of participants Sarkissian et al. (2011) used. A post-hoc power analysis using G\*Power 3.1 (Faul, Erdfelder, Buchner & Lang, 2009) for a linear multiple regression design with a sample of 203 participants and an alpha of .05 indicated a statistical power of 99% to detect an effect size of 0.25, which is considered to be a small to medium effect size (Cohen, 1988).

*Materials and Procedure*

Each participant received the measurement scale and the other-culture condition from Sarkissian et al. (2011, Experiment 1) in counterbalanced order. In the other-culture condition, the participants were asked to imagine an isolated tribe of people called the Mamilons. They were

told that the Mamilon tribe lives in the Amazon rainforests and has preserved a traditional warrior culture with different values from people in the surrounding society. Following this description, the participants received two questions to measure their responses to a moral disagreement concerning two different moral transgressions. Both transgressions involved canonical moral violations; one concerned the killing of a young child and the other involved the random stabbing of innocent passersby. The participants were then told that one of their neighbors thought that this act was morally wrong but that a member of Mamilon society thought that the act was morally permissible. For each transgression, the participants rated their agreement or disagreement with the sentence “Since your neighbor and the Mamilon have different judgments about this case, at least one of them must be wrong.” The participants were asked to respond to this question on a scale of agreement from 1 to 7 (1: *Disagree*, 7: *Agree*)

### *Results*

Each participant was given a score representing his or her mean judgment of the two moral transgressions. First, correlations between the dimensions of the measurement scale and the composite score of the other-culture judgments were calculated. The other-culture score positively correlated with Independent Truth,  $r(203) = .51, p < .001$ , Universal Truth,  $r(203) = .54, p < .001$ , and Divine Truth  $r(203) = .17, p = .02$ . Subsequently, the other-culture score was regressed on the three dimensions and results show that the three predictors explained 34.2% of the variance ( $R^2 = .342, F(3, 199) = 34.51, p < .001$ ). Independent Truth ( $b = .45, t(3, 199) = 2.98, p = .01$ ), Universal Truth ( $b = .79, t(3, 199) = 4.89, p < .001$ ), and Divine Truth ( $b = -.20, t(3, 199) = -2.15, p = .03$ ) predicted vignette scores.

*Discussion*

This study reveals that the dimensions of the measurement scale are each associated with perceived objectivity. Independent Truth and Universal Truth are positively related to this construct. That is, those who score highly on Independent Truth or Universal Truth tend to say that at least one of those involved in a moral disagreement has to be wrong. Divine Truth, in contrast, is negatively related to perceived objectivity.

The findings of this study validate the FMO-scale in that it successfully predicts perceived objectivity as measured by the other-culture condition of Sarkissian et al. (2011). These results suggest that the Sarkissian probe did not simply measure a one-dimensional construct but instead tapped into three different dimensions.

Divine Truth is as such positively correlated to perceived objectivity. However, a multiple regression revealed a negative but small relationship between Divine Truth and the other-culture variable when controlling for Independent Truth and Universal Truth. For someone who adheres to divine command ethics, the results here suggest that the positive association between Divine Truth and perceived objectivity results from an endorsement of Independent Truth and/or Universal Truth. This relationship was not predicted. Indeed, Goodwin and Darley (2008) show a positive association between grounding one's morals in divine command ethics and perceived objectivity. Yilmaz & Baçhekapili show that there is an association between religious concepts and moral objectivity. Moreover, Sarkissian and Phelan (2019) show that followers of Abrahamic faiths are most likely to endorse moral objectivism and that it is specifically people's beliefs in God's punishing characteristics that predict moral



objectivity. Those are interesting findings, but those studies did not distinguish between Independent Truth, Universal Truth and Divine Truth. It is therefore possible that the relationship that was found between religion and moral objectivity is merely correlational and disappears when controlling for Independent Truth and Universal Truth.

It might be that people have different views on whether or not the commands of a divine entity apply to other cultures. If that is the case, people who score high on Divine Truth may respond as if morality is relative because they believe that the divine commands issued by God apply to their own culture and not necessarily to members of different cultures. Indeed, God may even have different commands for members of different cultures. Alternatively, it is possible that people recognize that other cultures have different gods and that those gods may issue different commands. As a result, moral truth is relative to those different cultures.

A yet different possibility is that an individual differences variable explains the specific relationship found here. The study shows that people who are (more) committed to a divine command ethics tend to refrain from judging moral disagreements as if only one person is correct. Thus, although they believe that moral truths are based on divine commands (as the scale items measure), they refrain from explicitly judging that others must be mistaken. The reason for this may be that people who are committed to divine command ethics may also be the kind of people that refrain from judging what others should do or think. Indeed, they may believe in a very personal form of free will and moral responsibility - that is, it is ultimately God who will judge who was right and who was wrong. Among like-minded thinkers, they perhaps may judge that a certain moral truth exists, but when they are asked about this in a more detached forum, like these studies, they may refrain from making judgments. Alternatively, Saroglou (2011) proposes that there are four distinct dimensions of religion (believing, bonding, behaving, and

belonging) that may express themselves differently in different cultures. It is possible that people's view about whether or not the commands of a divine entity apply to other cultures depends on their psychological reliance on each of the dimensions identified by Saroglou (2011). Relatedly, the scores of individuals on Divine Truth may then be culturally variable (see also Graham & Haidt, 2010; Graham, Meindl, Beall, Johnson & Zhang, 2016). Consequently, there are a variety of possibilities to explain the effect here and this would be an interesting question for future research.

#### **Study 4**

The aim of Study 3 was to further validate the measurement scale by replicating a previous study on perceived objectivity and interpersonal tolerance. Goodwin and Darley (2012) found that people who hold that at least one of two people who morally disagree must be mistaken tend to be less tolerant toward morally divergent others. In this study, I set out to replicate Goodwin and Darley's (2012) study. They operationalized tolerance in terms of how comfortable a participant would be to have a long-term guest who disagreed with them. Just as Study 2, this experiment can be used to check whether the dimensions of the scale predict people's objectivity ascriptions. Similarly, this study uses Goodwin and Darley's cases to test whether the three dimensions of the FMO-scale – to wit Independent Truth, Universal Truth, and Divine Truth – predict perceived objectivity.

The main goal of this study, however, is to investigate whether the dimensions of the scale predict people's tolerance toward morally divergent others. There is reason to expect each of these dimensions to be predictive of intolerance. Those who submit to Independent Truth,

Universal Truth, or Divine Truth might assume that they know what is right and wrong and might be critical of those who have moral beliefs that they regard as mistaken. However, this need not be the case. Belief that moral truths exist can be combined with the belief that it is not always easy to know those truths. Even so, given the positive relation Goodwin and Darley found, I expect that at least Independent Truth and Universal Truth are predictive of intolerance. The fact that Divine Truth turned out to be negatively correlated to perceived objectivity in Study 3 suggests that it is an exception.

In this study I will also investigate the differences between perceived objectivity and the dimensions of the measurement scale with regard to tolerance. Goodwin and Darley's study have shown that perceived objectivity is associated with tolerance. The previous study (Study 3) shows that the dimensions of the measurement scale are associated with perceived objectivity. The question is then what associations exist between perceived objectivity, the dimensions of the measurement scale, and tolerance. I will test whether perceived objectivity and/or the dimensions of the measurement scale predict tolerance when controlling for each other.

### *Methods*

#### *Participants*

Three hundred fifty participants were recruited via the online service Mechanical Turk and received \$0.50 for their time (174 female;  $M_{\text{age}} = 35$ ,  $SD = 12.17$ ). Participants who previously participated in studies that involved the development of the measurement scale were excluded. Participants who did not complete the survey or failed to answer attention checks correctly ( $N =$

11) were excluded from statistical analyses. The attention checks consisted of an item in the middle of the survey that instructed participants to remember the code word “Yellow” and to rate “*strongly agree*” to that item. Participants were requested to fill out this code in a box on a new screen at the end of the study. Analyses were conducted on the remaining 347 participants. A large sample size was chosen in order to have sufficient statistical power. A post-hoc power analysis using G\*Power 3.1 (Faul, Erdfelder, Buchner & Lang, 2009) for a linear multiple regression design with a sample of 339 participants and an alpha of .05 indicated a statistical power of 100% to detect an effect size of 0.25, which is considered to be a small to medium effect size (Cohen, 1988).

### *Materials and Procedure*

Each participant received the FMO-scale as well as measures of perceived objectivity and tolerance in a counterbalanced order. The measure of objectivity and tolerance was the same as that used by Goodwin and Darley (2012, Experiment 1). For the measure of objectivity and tolerance, each participant received six different scenarios involving moral issues, in a random order (see Appendix).

The participants read each scenario and were then asked to rate the extent to which they agreed that the person’s actions were morally wrong on a six-point scale (1: *strongly disagree*, 6: *strongly agree*). The participants were then asked two objectivity questions and a tolerance question. For the first objectivity question, the participants were asked whether there was a correct answer to whether the moral claim was true (1: no correct answer, 6: definitely a correct answer). For the second objectivity question, the participants were asked how they would

interpret a moral disagreement with regard to the moral claim (1: Neither of us needs to be mistaken, 6: The other person is clearly mistaken). Finally, for the tolerance question, the participants were asked how comfortable they would be to have a long-term guest who disagreed with them (1: Extremely uncomfortable, 6: Extremely comfortable).

### *Results*

The two objectivity measures were combined to generate a composite measure of moral objectivity by adding up the scores and dividing it by the number of variables. Each participant was then given an objectivity score representing the mean of the judgment for the six moral transgressions. I also constructed a composite score of the tolerance variable for each of the six moral transgressions by adding up scores and dividing it by the number of variables.

Subsequently, correlations between the dimensions of the measurement scale and the composite score of perceived objectivity were calculated. Independent Truth,  $r(338) = .37, p < .001$ , Universal Truth,  $r(338) = .42, p < .001$ , and Divine Truth,  $r(338) = .17, p < .001$ , each correlated significantly with the composite objectivity score. Correlations were also calculated for the tolerance measure. Independent Truth,  $r(339) = -.18, p = .001$ , and Universal Truth,  $r(339) = -.21, p < .001$ , significantly correlated with tolerance, but Divine Truth did not,  $r(339) = -.08, p = .163$ .

The next step was to investigate the relationship between the dimensions of the measurement scale, perceived objectivity and tolerance. To this end, I computed several linear mixed effect models in *R* 3.2.3 using the *lme4* package (Bates, Maechler, Bolker & Walker 2015). A mixed effects model analysis makes it possible to account for the cross-nestedness of

observations in respondents and scenarios through the inclusion of random effects (e.g., Gelman and Hill 2007). In the first model, the relationships between Independent Truth, Universal Truth, and Divine Truth and the composite objectivity score were investigated. The results in Table 2 show that Independent Truth and Universal Truth are both positively related to the composite objectivity score. The model controls for age, gender, and nationality. Comparison to an otherwise identical model without random scenario effects (results not shown) reveals that the latter significantly improved model fit ( $\chi^2 = 347.45$ ,  $df = 1$ ,  $p < .001$ ). Figure 2 in the Appendix depicts the estimated random scenario effects for the model in Table 2.

Table 2

*Mixed Effects Model with perceived objectivity as dependent variable*

Variables	Coefficients	S.E.	T-ratio
Fixed Effects:			
Intercept	5.92	.57	10.39
Independent Truth	.28	.13	2.15
Universal Truth	.65	.13	5
Divine Truth	-.09	.07	-1.29
Random Effects:			
	Std. Dev.		
Respondents	1.47		
Scenarios	1.04		
Residual	2.15		
Deviance	9537.3		

*Notes.* Controlled for Age, Gender, and Nationality

Subsequently, I examined the relationship between the dimensions of the measurement scale and the tolerance variable. The results presented in Table 3 show that Universal Truth is significantly related to tolerance while Independent Truth and Divine Truth are not, again controlling for age, gender, and nationality. Again, comparison to an otherwise identical model without random scenario effects (results not shown) shows that these effects significantly improve model fit ( $\chi^2 = 138.59$ ,  $df = 1$ ,  $p < .001$ ).

Table 3

*Mixed Effects Model with tolerance as dependent variable*

Variables	Coefficients	S.E.	T-ratio
<b>Fixed Effects:</b>			
Intercept	3.83	.28	13.68
Independent Truth	-.03	.08	-.375
Universal Truth	.23	.08	2.88
Divine Truth	-.09	.05	-1.8
<b>Random Effects:</b>			
	Std. Dev.		
Respondents	.95		
Scenarios	.36		
Residual	1.17		
Deviance	7100.7		

*Notes.* Controlled for Age, Gender, and Nationality

The next step was to include the fixed effect of the composite objectivity score in the model of Table 3. The results presented in Table 4 reveal that in this model only the composite objectivity score is significantly related to tolerance. In contrast to the model without perceived objectivity, the relationship with Universal Truth is not statistically significant. What these results indicate is that the composite objectivity score is a mediator in the relationship between Universal Truth and tolerance (see figure 4 in the Appendix). As in the previous models, comparison to an otherwise identical model without random scenario effects shows the latter improve model fit significantly ( $\chi^2 = 19.94$ ,  $df = 1$ ,  $p < .001$ ). Figure 3 in the Appendix shows the estimated random scenario effects of the model in Table 4.

Table 4 *Mixed Effects Model including composite objectivity score with tolerance as dependent variable*

Variables	Coefficients	S.E.	T-ratio
Fixed Effects:			
Intercept	5.21	.24	21.71
Independent Truth	.03	.08	-.375
Universal Truth	-.07	.08	-.875
Divine Truth	.02	.04	.5
Objectivity	-.23	.01	-23
Random Effects:			
	Std. Dev.		
Respondents	.89		
Scenarios	.15		
Residual	1.06		
Deviance	6682.7		

*Notes.* Controlled for Age, Gender, and Nationality



*Discussion*

As in Study 3, Independent Truth, Universal Truth, and Divine Truth, are positively correlated to perceived objectivity. A mixed effects analysis shows that it is particularly Independent Truth and Universal Truth that predict perceived objectivity. Furthermore, a similar analysis shows that Universal Truth is negatively related to tolerance and that perceived objectivity is a mediator in this relationship. This study thereby reveals that the dimensions of the measurement scale explain distinct variance in perceived objectivity and tolerance. In particular, this study presents a further step toward validation of the FMO-scale by showing that the dimensions are not only related to perceived objectivity but also to people's tolerance of others who morally disagree with them.

Similarly to Study 3, results indicate that the relationship between Divine Truth and perceived objectivity seems less straightforward as results of previous research suggested (Goodwin & Darley 2008; Sarkissian & Phelan 2019; Yilmaz & Bahçekapili 2015). Divine Truth and perceived objectivity correlate positively but the relationship disappears when Independent Truth and Universal Truth are taken into account. Given that a similar result was obtained in Study 3, it seems that this relationship is genuine. Future research should investigate whether or not any of the explanations given in the discussion of Study 3 explain this result.

The results here also show that Universal Truth, when controlling for Independent Truth and Divine Truth, decreases people's tolerance of morally divergent others. More specifically, perceived objectivity is a mediator between Universal Truth and tolerance. People's commitments to Universal Truth are positively related to perceived objectivity while perceived

objectivity is negatively related to tolerance. This suggests that perceived objectivity works as a mechanism between Universal Truth and tolerance.

Skitka et al. (2005) show that the strong moral convictions that people have decrease their tolerance of those who have different moral convictions. It increases people's social and physical distance from others, and it decreases their goodwill and cooperation to resolve conflicts. In their seminal paper, Skitka et al. (2005) explicitly assume that moral judgments are perceived as being objective, universal, and absolute. The present studies suggest that specifically absolutism and universalism (represented here by Universal Truth) are associated with tolerance. Hence, Skitka et al. (2005) correctly identified that different views underlie moral judgments and that these can potentially explain associations with tolerance. The present research contributes by showing that Universal Truth is particularly associated with tolerance. It is therefore possible that people's scores on Universal Truth explain the results found by Skitka and colleagues. If this is correct, future research should distinguish between the different views that underlie moral judgments and hence at least take into account Independent Truth and Universal Truth.

In short, this study shows that Independent Truth and Universal Truth explain distinct variance in perceived objectivity. Moreover, it shows that perceived objectivity is a mediator in the relationship between Universal Truth and tolerance. Previous research assumed that distinct views underlie moral judgments and the present study contributes by showing that these views are differently related to tolerance. An important question now is whether similar relationships exist between the dimensions of the measurement scale and measures of behavioral intentions that are different than tolerance.

**Study 5**

Results of Study 4 suggest that Universal Truth is associated with people's tolerance toward those who morally disagree with them. In Study 4 tolerance was measured as the degree to which people are comfortable with having someone who morally disagrees with them as a long-term guest in their house. The aim of the present study is to determine whether the relation that is found between people's attitudes towards moral objectivity and intolerance also extends to variables beyond intolerance, namely people's willingness to harm others.

As discussed above, research by Skitka and colleagues (Skitka et al. 2005) show that attitudes held with strong moral conviction, which they term moral mandates, decreases people's tolerance, goodwill, and cooperativeness to those who morally disagree with them. In their research, they do not distinguish between the views that underlie moral judgments. The present research investigates whether Independent Truth, Universal Truth, and Divine Truth have different relationships with a behavioral intention measure that extends beyond tolerance.

The general hypothesis is therefore that Independent Truth, Universal Truth, and Divine Truth are differently associated with people's willingness to harm others. This study was preregistered at Aspredicted.org (#1531: <http://aspredicted.org/blind.php?x=6rv64r>).

The willingness to harm measure was chosen to test whether folk attitudes toward moral truth and falsity have relationships with variables beyond tolerance. The tolerance variable used in Study 4 measures the degree of physical and social distance people desire from people who have different moral convictions than they do. Tolerance is one specific response to people who have different moral convictions. A different question pertains to how people respond to situations in which other people violate specific moral norms.

People who violate moral norms are ordinarily punished for their behavior. This punishment can take place with the aim of incapacitation or deterrence. People often experience moral outrage if they perceive others violating a moral norm. If they decide to punish the offender they may do this to incapacitate further moves, they may do this to deter people from violating those norms in the future, or they may do this to signal to the offender why he or she is being punished (Darley & Pittman 2003; Gollwitzer 2009). Regardless of motive, it may be the case that people's perception of moral truth relate to people's willingness to harm those who violate moral norms.

For instance, if people adhere to Independent Truth, Universal Truth, or Divine Truth, they may believe that they have knowledge of what is morally right and wrong. As a result, they adopt a critical stance toward those who violate moral norms irrespective of their scores on the dimensions of the measurement scale. Alternatively, each of the dimensions may be differently (i.e., positively and negatively) related to willingness to harm. Indeed, the perception that moral truth is universal and absolute, as represented by Universal Truth, might induce people to respond in a resolute manner to those who violate moral norms. Perceiving moral truth as absolute and universal might entail a justification for setting other people straight. Alternatively, believing in the possibility of a single objective moral truth (i.e. rejecting no-truth and moral relativism), without believing that moral truth is absolute or universal, might inhibit people to respond violently. This might be the case because those who violate moral norms are merely perceived as being led astray by mistaken beliefs about the single objective truth and not as violating absolute or universal moral norms. A specific hypothesis here is therefore that Universal Truth increases while Independent Truth decreases people's willingness to punish norm-violators.

In this study, participants received the measurement scale and seven different scenarios in counterbalanced order. Each of the scenarios is described as involving a party violating a moral norm and a different party as having the option of responding harmfully. Participants were asked to indicate whether or not they would favor a harmful response. The scores on the measurement scale were used to predict whether people have a willingness to harm others but no specific direction was hypothesized.

### *Methods*

#### *Participants*

Four hundred ninety-three participants were recruited via the online service Mechanical Turk and received \$0.50 for their time (257 female;  $M_{\text{age}} = 34$ ). Participants who previously participated in studies that involved the development of the MMS were excluded. Participants who did not complete the survey or failed to answer attention checks correctly ( $N = 12$ ) were excluded from statistical analyses. The attention checks consisted of an item in the middle of the survey that instructed participants to remember the code word “Orange” and to rate “*strongly agree*” to that item. Participants were requested to fill out this code in a box on a new screen at the end of the study. Analyses were conducted on the remaining 480 participants. I chose for a relatively high number of participants for this study to be certain that there is sufficient statistical power to detect a small to medium effect size. Post-hoc power analysis using G\*Power 3.1 (Faul, Erdfelder, Buchner & Lang, 2009) for a linear multiple regression design with a sample of 480 participants and an alpha of .05 indicated a statistical power of 100% to detect an effect size of 0.25, which is considered to be a small to medium effect size (Cohen, 1988).

#### *Materials and procedure*

Each participant received the measurement scale and seven different scenarios in counterbalanced order. The scores on the measurement scale were used to predict whether people are willing to harm others, which was measured on a scale from 0 (do not use violence) to 100 (use violence). For example, one scenario concerns the President of the United States deciding about what to do to stop a violent terrorist group. The President is described as considering using force and bombing the terrorist group to stop them. A different scenario describes a gay couple in a restaurant minding their own business and then suddenly being targeted by two bullies who verbally harass them about their sexual orientation. In the first scenario, the scale ranged from 0 (“Don’t bomb them”) to 100 (“Bomb them”). In the second scenario, the scale ranged from 0 (“Don’t pull them off”) to 100 (“Pull them off the barstool”). The full set of 7 scenarios is shown in the Appendix.

### *Results*

The scores on the willingness to harm measure for each of the seven scenarios were combined to generate a composite measure of willingness to harm. Therefore, each individual participant had a unique average score on willingness to harm.

Subsequently, correlations between the dimensions of the FMO-scale and the composite score willingness of harm measure were calculated. Independent Truth,  $r(480) = -.118, p < .001$ , and Universal Truth,  $r(480) = .102, p < .001$ , dimensions each correlated significantly with the willingness to harm score but Divine Truth,  $r(480) = .02, p = .653$ , did not.

The next step was to investigate the relationship between the dimensions of the measurement scale and willingness to harm. To investigate these relationships, I conducted a linear mixed effect analysis in R 3.2.3 using the lme4 package. The results presented in Table 5

show that controlling for age, gender, and nationality Independent Truth is negatively related to willingness to harm while Universal Truth is positively related to willingness to harm. I compared the model from Table 5 to an otherwise identical model without random scenario effects, revealing significant effects of the latter ( $\chi^2 = 504.69$ ,  $df = 1$ ,  $p < .001$ ). Figure 5 in the Appendix depicts the estimated random scenario effects in the model for willingness to harm.

Table 5

*Mixed Effects Model with willingness to harm as dependent variable*

Variables	Coefficients	S.E.	T-ratio
Fixed Effects:			
Intercept	42.19	6.19	6.82
Independent Truth	-5.6	1.24	-4.52
Universal Truth	5.87	1.41	4.16
Divine Truth	-.33	.86	.38
Random Effects:			
	Std. Dev.		
Respondents	21.95		
Scenarios	10.61		
Residual	23.48		
Deviance	31964.3		

*Notes.* Controlled for Age, Gender, and Nationality

*Discussion*

I hypothesized that Independent Truth and Universal Truth can be differently related to willingness to harm. That is, perceiving moral truth to be absolute and universal may induce people to respond resolutely to violations of moral norms. Additionally, believing that there is a single objective truth (rejecting moral relativism and no-truth), without believing moral absolutism or universalism, may inhibit people to respond violently. The results of this study show that Universal Truth and Independent Truth are indeed differently related to willingness to harm, respectively positively and negatively.

The results of this study are important for a variety of reasons. First, Independent Truth and Universal Truth explain distinct statistical variance in willingness to harm. This implies that Independent Truth and Universal Truth are psychologically distinct dimensions, which further validates the FMO scale. Second, the fact that Independent Truth and Universal Truth pull into different directions when it comes to willingness to harm suggests that these dimensions fulfil distinct psychological roles. Third, these results provide a novel perspective on research on strong moral attitudes and their relationship with different types of intolerance (e.g. Skitka et al. 2005). It is possible that examining people's strong moral attitudes, while controlling for Independent Truth and Universal Truth, reveals different relationships with the aforementioned variables.



### **General Discussion**

Five studies suggest that folk moral objectivity is a multi-dimensional phenomenon. The results of these studies provide new insights into how people think about the objectivity of morality, and they provide a novel tool for measuring people's intuitions about this, the FMO-scale.

Study 1 shows that moral objectivity can be measured on distinct dimensions. People's responses to twenty items from five different categories (representing the philosophical views of universalism, absolutism, divine command theory, relativism, and what I call 'no truth') revealed three distinct psychological constructs. The dimension of Independent Truth captures the view that moral judgments that are true independently of the group or culture to which those who form the judgments belong. People who endorse this dimension reject the idea that there are no moral truths or that moral truth is relative and hence share the idea that there is a single objective truth. The dimension of Universal Truth represents the view that there are absolute moral norms that are universally binding. Finally, the dimension of Divine Truth concerns the view that what is morally true or false depends on the existence of a divine entity and that moral knowledge is revealed in divine books and religious texts.

Studies 2 and 3 show that Independent Truth and Universal Truth, but not Divine Truth, are positively related to perceived objectivity. Studies 3 and 4 also reveal a negative relationship between Universal Truth and interpersonal tolerance. Study 4 shows that the dimensions of Universal Truth and Independent Truth pull people's willingness to harm others in different directions, which indicates that these dimensions play distinct psychological roles. Whereas

high scores on Universal Truth are associated with a relatively high willingness to harm others, those who score highly on Independent Truth express less willingness to harm others.

*Relationship to previous research on perceived objectivity*

One of the novelties of the present research was to investigate whether people's intuitions about moral objectivity might be multi-dimensional rather than one-dimensional, as research concerning perceived objectivity (Goodwin and Darley 2008, 2012; Wright, Cullum & Schwab 2008; Wright, McWhite & Grandjean 2014), and research on moral diversity and tolerance (Haidt, Rosenberg, and Hom; Skitka et al. 2005) has thus far assumed. People's responses to a range of distinct views were tested and the question arose whether these conceptually distinct views are also psychologically distinct. The studies reveal that they do not directly map onto how people think about morality. As it turns out, relativism and no-truth form a single dimension. Similarly, universalism and absolutism are predicted by a shared psychological construct. Divine command theory, on the other hand, does form an independent psychological dimension. What do these results teach us about how people think about morality?

The crucial finding is that people conceive of the objectivity of moral judgments in different ways. There are some who take moral objectivity to imply that moral judgments are true independently of particular groups or cultures. There are others who take it to imply that moral judgments are true because they are based on universal and absolute moral norms, and yet others because moral judgments depend on divine commands. Each of the dimensions of Independent Truth, Universal Truth, and Divine Truth fulfills a distinct explanatory role. The validity of the FMO-scale that accommodates these three dimensions was established relying on

previous research concerning perceived objectivity and its relation to tolerance. At the same time, the studies reveal that perceived objectivity is only one aspect of folk moral objectivity. A substantial amount of the variance in moral thinking can be explained in terms of Independent Truth, Universal Truth and Divine Truth, which suggests that these constructs play an explanatory role in people's moral thought.

Studies 2 and 3 reveal that perceived objectivity scores require careful interpretation. Above I considered what high scores on perceived objectivity might mean. It is also worthwhile to explicate how low scores could be interpreted. People who do not perceive morality as objective might conceive of moral truth as being relative, or not believe in moral truths at all (if they score low on the dimension of Independent Truth). Alternatively, they might reject the idea of absolute moral norms that are universally binding (if they score low on Universal Truth). Finally, they might deny that there are true moral judgments that are based on divine commandments. The present results also shed a new light on research that shows a relationship between religion or divine command ethics and moral objectivity (Goodwin and Darley 2008; Sarkissian and Phelan 2019; Yilmaz & Bahçekapili 2015). Studies 2 and 3 replicate this finding in that Divine Truth is positively correlated with perceived objectivity. However, this relationship disappears when other dimensions are taken into account. As it turns out, religious grounding itself does not implicate an increase in perceived objectivity.

Finally, studies 4 and 5 reveal interesting correlations between the three dimensions on the one hand and tolerance and willingness to harm on the other. Study 3 shows that, rather than moral objectivity in general, scores on Universal Truth in particular are correlated with how comfortable people are to have someone with different moral views as a long-term guest. Study 5 shows that this relationship also applies to a measure of willingness to harm others. The study

shows that high scores on Independent Truth strongly decrease people's willingness to harm others. This reveals that it can make a difference for which reasons people subscribe to moral objectivity. It is not the case that folk attitudes toward moral truth as such explain willingness to harm. Instead, one kind of moral objectivity is positively associated with it, whereas another is negatively associated with it. An important question for further research is why this holds and whether it extends to actual forms of moral behavior.

*Relation to other research in social psychology*

Above I remarked that research on the psychological distinction between moral and non-moral attitudes makes a variety of assumptions that are relevant to the present research. For example, some research assumes that people generalize moral rules and violations to other social contexts while conventional rules and violations are perceived as applying locally (Turiel, 1983, 1998; Smetana, 1981, 1983; Smetana and Braeges, 1990). There is also research that shows that people are least supportive of moral diversity compared to other kinds of diversity (Haidt, Rosenberg & Hom 2003). Additionally, in research by Skitka and colleagues (e.g. Skitka et al. 2005) it is assumed that moral issues are perceived as objective, absolute, and universal, and their research shows that strong moral convictions, compared to strong non-moral attitudes, explains unique variance in interpersonal tolerance. The present research suggests that what is special about moral attitudes, compared to non-moral attitudes, varies on at least three distinct dimensions. While Study 4 shows that it is specifically Universal truth that predicts interpersonal tolerance, Study 5 shows that Independent Truth and Universal Truth even pull into different psychological

directions when it comes to willingness to harm. Future research on moral attitudes and moral behavior might be advanced by taking into account the distinct role of each of the dimensions.

### **Conclusion**

Existing research measures folk attitudes towards moral truth in terms of perceived objectivity. The findings presented here show that people have more fine-grained intuitions about moral objectivity. They can be captured in terms of three constructs, to wit Independent Truth, Universal Truth and Divine Truth. Each of these constructs is differently related to perceived objectivity, tolerance, and a willingness to harm measure. This also provides additional insight into what distinguishes moral attitudes from non-moral attitudes. Existing experimental research in experimental philosophy and social psychology tacitly assumed that philosophical views such as absolutism, universalism, the rejection of relativism, or the idea that there are no moral truths, all exist on a single dimension. The present research shows that those views do not exist on a single dimension and that they do not function as a psychological conjoint, reinforcing each other. Rather, they play different psychological roles and they are different related to perceived objectivity, tolerance, and people's willingness to punish those who violate moral norms. In addition to providing new insights, this research also provides a methodological tool, namely the FMO scale, for conducting experimental research to folk moral objectivity and to interpersonal tolerance.

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**Appendix**

Items and factor loadings Study 1 and scatterplot for the distribution of scores over the dimensions

Category	Item	Item label	Factor 1	Factor 2	Factor 3
No Truth	1	Other than what people believe, are brought up to believe, or want to believe about it, there are no facts about what is morally right and wrong	-.561	-.124	-.149
No Truth	2	All ideas about what is morally right and morally wrong are products of individuals, cultures, and communities and nothing more	-.751	.053	-.054
No Truth	3	What people believe to be morally right and wrong are merely social conventions that could have been different	-.718	.025	-.052
No Truth	4	It is an illusion to think that anything is really morally true or false	-.485	.044	-.293
Relativism	5	When two people have opposing beliefs about a moral issue, it is not necessarily the case that either or both are wrong	-.568	-.153	.029
Relativism	6	There is not one but many different answers to the question of what is morally right and wrong and these can be equally correct	-.724	-.077	-.025
Relativism	7	What is ultimately morally right and wrong is different for people with different moral views and from different cultures and societies	-.847	-.059	.094

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Relativism	8	What is morally right and wrong is relative to the moral beliefs of an individual, culture, or society	-.861	.025	.081
Universalism	9	What is ultimately morally right or wrong is the same for all people at all times and places	.237	.201	.330
Universalism	10	Although people or cultures sometimes ignore moral concerns, moral norms apply anywhere and everywhere	-.071	.015	.750
Universalism	11	What is morally right and wrong for me here and now is also morally right and wrong for people elsewhere, even for people living in different countries and part of different cultures	.112	.128	.518
Universalism	12	Despite the diversity of moral views between individuals, cultures, and societies, there are moral norms that should apply universally	-.002	-.094	.767
Absolutism	13	Although people disagree about what is morally right and wrong, I believe in the existence of specific moral principles that can settle any moral disagreement	.110	.140	.621
Absolutism	14	Certain actions are morally wrong and they remain morally wrong even in the rare case that no one believes so	.013	-.017	.737
Absolutism	15	There are absolute moral rules that apply to all people, including those who do not	.050	.052	.687

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		acknowledge these principles			
Absolutism	16	There is, in all circumstances, one correct answer about what is the morally right thing to do	.105	.291	.478
DCT*	17	The correct answer to any moral issue can be found in a sacred book or text (for example, the Bible, the Qur'an, the Torah, or another)	.023	.782	.151
DCT*	18	The only actions that are ultimately morally right or wrong are those actions that God prescribes	-.047	.918	.068
DCT*	19	God is the only true source of knowledge about what is morally right or wrong	.037	.925	.000
DCT*	20	Without the existence of God, nothing is truly morally right or wrong	.007	.794	-.055
		Eigenvalues	8.814	2.424	1.480
		%Variance accounted for	44.07	12.12	7.40

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*Notes. \*Divine Command Theory*



Figure 1 Scatterplot for distribution of scores between the dimensions

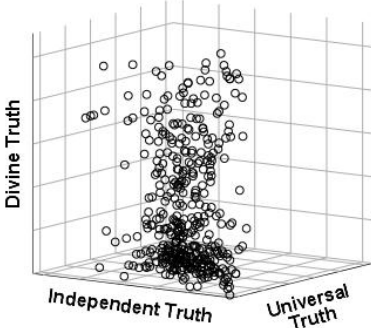


Figure 2 Plot of random effects of scenarios for composite objectivity score

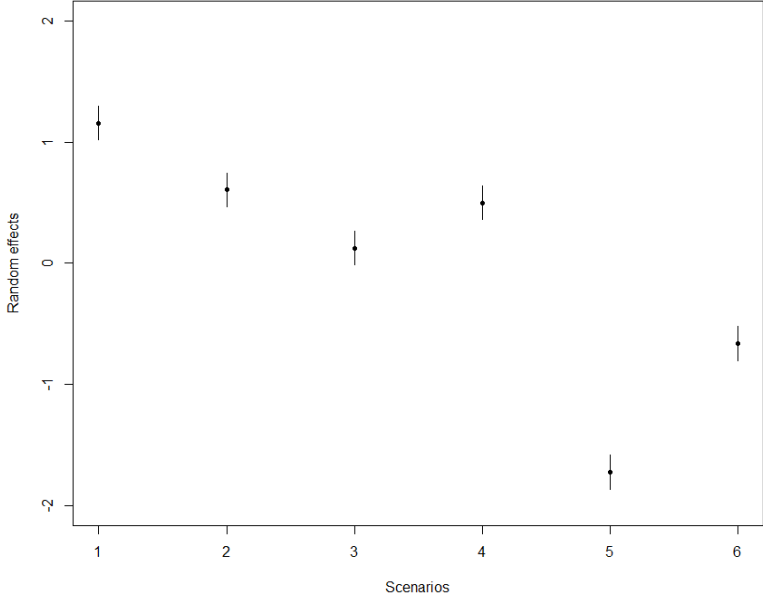


Figure 3 Plot of random effects of scenarios for tolerance

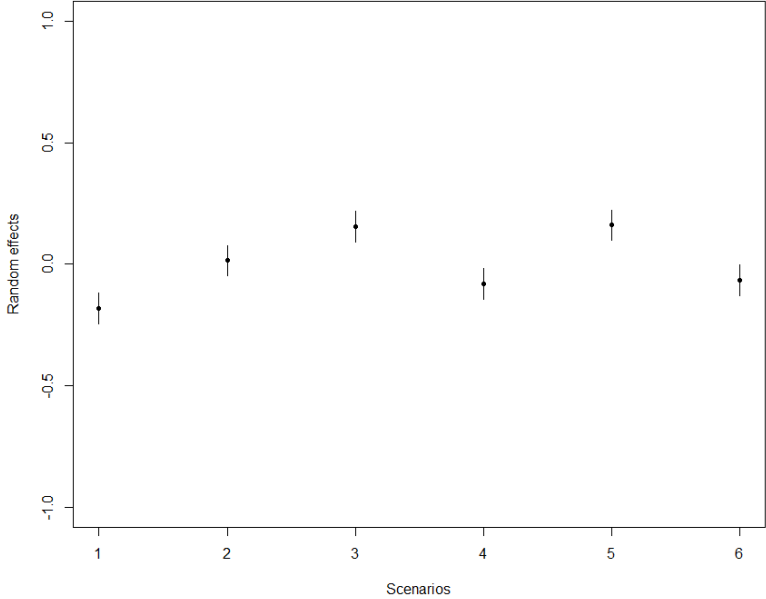


Figure 4 Coefficients for the relationship between Universal Truth and Tolerance with Perceived Objectivity as mediator

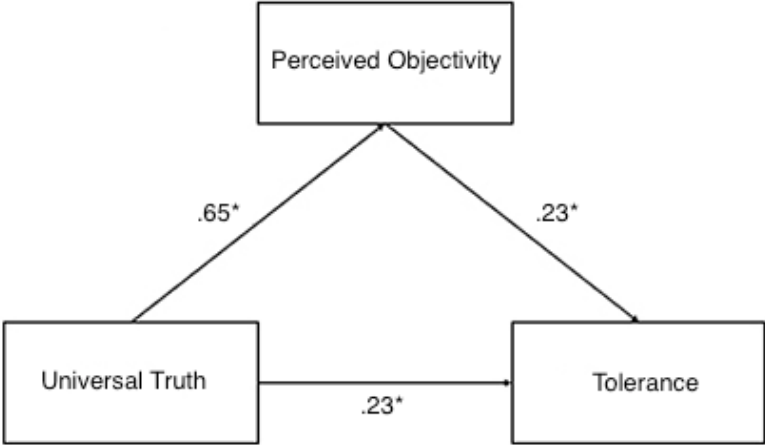
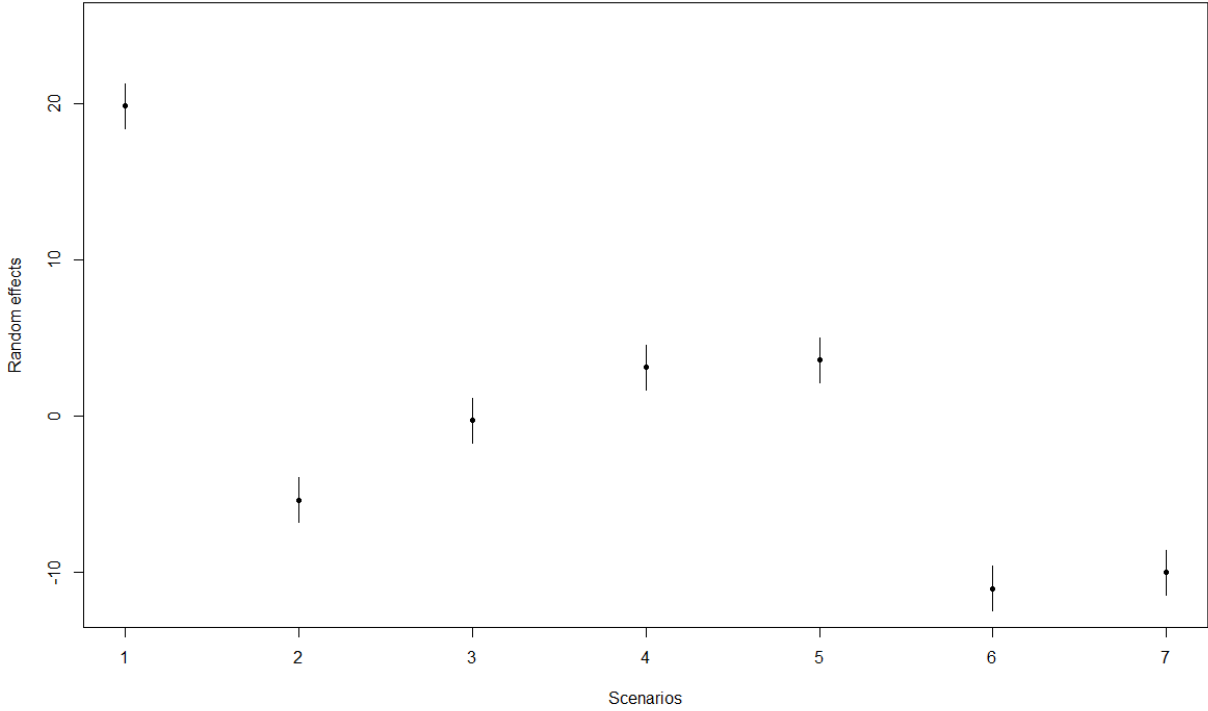


Figure 5 Plot of random effects of scenarios for willingness to harm



Scenarios Study 4

1. ***Steal wallet.*** Jason is saving up for an ipod, but he is getting impatient that it is taking so long to have enough money. After he has finished dinner at a local restaurant one evening, he notices that another customer has left their wallet behind on the table next to him. He is able to look inside the wallet discreetly, and finds \$200 in cash. He takes the \$200, and leaves the restaurant. Rate the extent to which you agree with the claim that Jason's actions are morally wrong.

2. ***Punch.*** After a very difficult day at work, Frank goes to his local bar to watch his favorite team. As soon as Frank sits down, he overhears a fellow patron make disparaging comments about Frank's team to the bartender. Frank immediately walks over to the person who made the comment, and punches him off his bar stool. Rate the extent to which you agree with the claim that Frank's actions are morally wrong.

3. ***False alibi.*** One of Megan's best friends is being charged with murder. Megan is convinced that he is innocent, although she does not know what he was doing on the night of the alleged murder. Without having been asked, Megan provides a false alibi to the police for her friend, claiming that she was with him on the night of the night of the alleged murder. Rate the extent to which you agree with the claim that Megan's actions are morally wrong.

4. ***Urinate on memorial.*** Tom is out with his friends one night and has been drinking. As they are walking home, they encounter a memorial for victims of 9/11, with flowers lain at the base of it. Tom wants to impress his friends, and so he decides to vandalize the memorial. He urinates on

the memorial and on the flowers. Rate the extent to which you agree with the claim that Tom's actions are morally wrong.

5. **Nazi salute.** Mike is a professional sportsman. He is playing in a match against a team that is known to have a large Jewish support-base, and these opposition supporters are heckling him. He responds by turning to these supporters, mimicking Adolf Hitler's mustache, and giving them a Nazi salute. Rate the extent to which you agree with the claim that Mike's actions are morally wrong.

6. **Burn flag.** Amy is a high school history teacher. She has become increasingly dissatisfied with her government's foreign policies, and wants to communicate that to her students. She decides to do this by burning a US flag in front of them. Rate the extent to which you agree with the claim that Amy's actions are morally wrong.

Scenarios Study 5

**President.** The president of the United States is deciding about what to do to stop a terrorist group. The terrorist group has recently committed terrifying brutalities to innocent people and the President of the United States is horrified by this. He is considering to use force and bomb them.

**Gay couple.** A gay couple in a restaurant was minding their own business but then were suddenly targeted by two bullies who started calling them names and otherwise verbally harassing them about their sexual orientation. Two onlookers, at the other end of the bar, are appalled by the way that these bullies are treating the gay couple. They are thinking of teaching the bullies a lesson by pulling them violently off their bar stools.

**Dog.** Jason is walking his dog and observes another dog owner hitting his dog with a belt. The dog is clearly in pain and whimpers loudly. Jason is thinking of making him understand how the dog feels by hitting the dog owner once with the same belt.

**College.** Jack, a senior in college, and Jessica, a freshman, are siblings and both in the same college. Jessica has told Jack that she was sexually harassed by one of her male classmates. Jack is considering visiting the classmate and setting him straight by putting him in an armlock and hurting him.

**Football.** Some people are playing football. A few people on the sideline start shouting racial slurs at the black players and they even throw bananas on the field. Most of the players on the



field believe that this is the wrong way to treat people and are thinking about violently throwing them out of the stadium.

**Christians.** A group of Christians is holding a public prayer session in a park. They are unexpectedly interrupted by a person who ridicules the Christian faith by shouting loud and disrespectful remarks about the bible in order to offend them and interrupt their prayer. A jogger in the park who happens to run by is offended and thinks about pushing the person into the fish pond.

**Veterans.** At the end of Veterans Day, a group of veterans has come to a restaurant to have dinner together. While the veterans are having dinner, two other guests in the restaurant start mocking the veterans and make insulting remarks about the American army. To make things worse, they even use a t-shirt with the American flag to clean one of the dishes. The veterans are thinking of inviting these people to a fight outside to teach them a lesson.