



# The Moral Identity Questionnaire predicts prosocial behavior better than the Moral Identity Scale

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## Abstract

Recently, a growing number of studies has shown the relevance of Moral Identity to explain (im)moral conduct. The present study compared two moral identity measures in two independent samples ( $N=282$  and  $245$ ): i.e., the Moral Identity Scale (Aquino and Reed, *Journal of Personality and Social Psychology* 83:1423–1440, 2002) and the Moral Identity Questionnaire (Black and Reynolds, *Personality and Individual Differences* 97:120–129, 2016). The results revealed that the two scales are rather modestly correlated, which raises the question of whether they are measuring the same construct. Overall, hierarchical regression analyses revealed that the Moral Identity Questionnaire subscales were the superior predictors of (self-reported) moral behavior. Accordingly, this study suggests the use of the Moral Identity Questionnaire over the use of the Moral Identity Scale for the prediction of (im)moral behavior. Future research, however, should also include behavioral measures of (im)moral behavior rather than relying on self-reported behavior only.

**Keywords** Moral Identity · Moral Identity Scale · Moral Behavior · Immoral Behavior · Scale Validity

## Introduction

In recent years, moral concepts have increasingly been used to predict behavior. Moral principles describe what is considered good and right in society, and the resulting moral rules are considered to be essential for living together in communities. Moral behavior, then, refers to behavior that is consistent with these moral rules (Ellemers et al., 2019). Moral behavior cannot be described as homogeneous. The term encompasses two different categories of behavior that involve inherently different motivational processes, namely approach, and avoidance. From a psychological perspective, this refers to pro- and antisocial behavior. It includes helping, donating, and supporting others, as well as refraining from bad actions such as lying, stealing, and cheating. Accordingly, moral behavior is a highly relevant component of our civilized coexistence (Hertz & Krettenauer, 2016).

Moral Identity refers to the degree to which people consider being a moral person as an important part of their self-concept (Aquino & Reed, 2002; Blasi, 1980). The quite intuitive notion that moral identity is a valid predictor of moral

behavior has been confirmed by a meta-analysis conducted by Hertz and Krettenauer (2016). The study revealed small to moderate effect sizes ( $r=0.22$ ). The most established moral identity measure is the Moral Identity Scale (MIS; Aquino & Reed, 2002). It is designed to measure the public and private dimensions of moral identity. The subscale Symbolization describes the public dimension, which refers to the individual's tendency to reveal moral characteristics through public actions. The private dimension is represented by the subscale Internalization, relating to the self-importance ascribed to moral characteristics. Despite the frequent application of the MIS, scholars reported several issues. First, the Symbolization subscale tends to yield inconsistent results concerning the prediction of moral behavior across different studies. This has led many researchers to omit this subscale and use only the Internalization subscale as an indicator of moral identity in their studies (Jennings et al., 2015). Second, the instrument misses one important aspect, which is, the importance ascribed to acting in line with the moral self-perception (i.e., moral integrity) (Black & Reynolds, 2016).

The Moral Identity Questionnaire (MIQ; Black & Reynolds, 2016) was partly developed to address the aforementioned issues with MIQ. It attempts to measure moral identity and thus is intended to probe into the same latent

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construct as MIS. The way MIQ measures moral identity, however, differs from the MIS. While the MIS directly asks about the internalization of moral traits and addresses symbolization in terms of behavior, the MIQ measures moral identity by the extent to which participants agree that their moral beliefs are reflected in their behavioral intentions. The MIQ also encompasses two subscales. The Moral Self subscale was designed to measure the actual level of identification with moral values. The Moral Integrity subscale measures the extent to which an individual ascribes value to enacting actions that are in line with their moral principles.

The objective of the present two studies was twofold. First, we wanted to investigate the relationship between the two measures of moral identity (i.e., MIS and MIQ). Second, we wanted to investigate in regression analyses the capacity of these two measures to predict the two aspects of moral behavior, i.e., engaging in moral behavior and refraining from immoral behavior (Constandt et al., 2018). Therefore, both measures were examined in regression analyses to assess their contribution to the predictable variance of moral behavior. (Im)moral behavior was operationalized using two measures of prosocial behavior and one measure of antisocial behavior.

## Methods

### Participants

Study 1 was conducted on a sample of first-year psychology students at Ghent University ( $N=282$ ). The mean age of the sample was 19.15 years ( $SD=3.63$ ), and it was composed of 56 men, 225 women, and one person who did not identify with one of these two categories. The sample size of Study 1 was determined by student availability. A sensitivity analysis using the software G\*Power 3.1 (Faul et al., 2009) revealed that, given this sample size and under standard criteria ( $\alpha=0.05$ ), the minimum detectable effect size in a linear multiple regression was  $\Delta R^2=0.046$ .<sup>1</sup>

Study 2 was conducted on a general sample recruited through Prolific. In this study 245 UK citizens took part. Participants could earn £1. The mean age of the sample was 34.12 years ( $SD=12.46$ ), including 81 men, 160 women, and four individuals who did not identify with one of these two categories. The sample size for Study 2 was based on the smallest significant effect in Study 1 (i.e.,  $\Delta R^2=0.488$ , observed when adding the MIQ to the regression model predicting dire prosocial behaviors – see Table 2). An a priori power analysis using G\*Power revealed that we needed a

minimum sample size of 241 participants to achieve 80% power to detect an effect of similar magnitude.

### Measures

All scales were presented with answer choices on a Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5) except for the adapted Workplace Deviance Measure (Bennett & Robinson, 2000), which offered five answer choices ranging from *never* (1) to *very often* (5). The items of all administered scales can be found in the supplementary material. The scales of prosocial and antisocial behavior were chosen to probe into possible differences in the predictive value of the MIS and MIQ subscales.

### Moral Identity

The Moral Identity Scale (MIS; Aquino & Reed, 2002), consisting of a list of nine moral attributes (Caring, compassionate, fair, friendly, generous, helpful, hardworking, honest, kind), and two subscales, i.e. Symbolization (MIS\_s; S1:  $\alpha=0.67$ ,  $M=2.95$ ,  $SD=0.67$ ; S2:  $\alpha=0.76$ ,  $M=2.95$ ,  $SD=0.73$ ) and Internalization (MIS\_i; S1:  $\alpha=0.74$ ,  $M=4.34$ ,  $SD=0.50$ ; S2:  $\alpha=0.58$ ,  $M=4.53$ ,  $SD=0.46$ ), each containing five items, was applied. An example item for the subscale Symbolization is: “*The types of things I do in my spare time (e.g., hobbies) clearly identify me as having these characteristics.*” An exemplary item for the subscale Internalization reads: “*Being someone who has these characteristics is an important part of who I am.*”

The second instrument was the Moral Identity Questionnaire (MIQ; Black & Reynolds, 2016), consisting of 20 items with the two dimensions Moral Self (MIQ\_m; S1:  $\alpha=0.73$ ,  $M=4.08$ ,  $SD=0.44$ ; S2:  $\alpha=0.86$ ,  $M=4.34$ ,  $SD=0.51$ ) and Moral Integrity (MIQ\_i; S1:  $\alpha=0.80$ ,  $M=3.99$ ,  $SD=0.52$ ; S2:  $\alpha=0.85$ ,  $M=4.17$ ,  $SD=0.57$ ). Eight of the items belong to the Moral Self subscale, the other twelve items belong to the Moral Integrity subscale. One example of an item for the Moral Self subscale is: “*It is important for me to treat other people fairly.*” A sample item for the subscale Moral Integrity is: “*I will go along with a group decision, even if I know it is morally wrong.*”

### Pro- and Antisocial Behavior

Prosocial Behavior was captured by an adapted version of 13 items of the Organizational Citizenship Behavior Scale (Moorman & Blakely, 1995; Haesevoets et al., 2021). The modifications resulted in a homogeneous unidimensional scale, which was adapted to measure prosocial group behavior (PGB) in a student population (S1:  $\alpha=0.78$ ,  $M=3.94$ ,  $SD=0.44$ ; S2:  $\alpha=0.88$ ,  $M=3.93$ ,  $SD=0.55$ ). The scale was chosen because it has been validated in a student population. An exemplary item of this scale is: “*Within the group, I am part of, I voluntarily help new people to feel at home in the group.*”

<sup>1</sup> Note that this effect is smaller than the smallest observed significant effect (i.e.,  $\Delta R^2=0.488$ , observed when adding the MIQ to the regression model predicting dire prosocial behaviors). Thus, we concluded that our study was sufficiently powered.

Additionally, the Revised Prosocial Tendencies Measure (Carlo et al., 2003) was used to measure different aspects of prosocial behavior. This instrument captures six types of prosocial behavior: i.e., public, anonymous, dire, altruistic emotional, and compliant. Public prosocial behaviors are behaviors that are intended to benefit others but are primarily exhibited when other people are present (PT\_pu; four items; S1:  $\alpha=0.80$ ,  $M=1.85$ ,  $SD=0.73$ ; S2:  $\alpha=0.78$ ,  $M=1.95$ ,  $SD=0.72$ ; sample item: “*I can help others best when people are watching me.*”). Anonymous prosocial behaviors refer to the tendency to help others without anyone knowing it (PT\_an; five items; S1:  $\alpha=0.77$ ,  $M=2.52$ ,  $SD=0.84$ ; S2:  $\alpha=0.74$ ,  $M=3.33$ ,  $SD=0.73$ ; sample item: “*I prefer to donate money without anyone knowing.*”). Dire prosocial behaviors refer to helping others in an urgent emergency or crisis (PT\_di; three items; S1:  $\alpha=0.56$ ,  $M=3.92$ ,  $SD=0.68$ ; S2:  $\alpha=0.64$ ,  $M=3.81$ ,  $SD=0.73$ ; sample item: “*I tend to help people who are in a real crisis or need.*”). Altruistic behavior was defined as helping others, when there is little or no prospect of direct, explicit reward for one's behavior (PT\_al; six items; S1:  $\alpha=0.69$ ,  $M=4.29$ ,  $SD=0.56$ ; S2:  $\alpha=0.77$ ,  $M=4.20$ ,  $SD=0.63$ ; sample item: “*I often help even if I don't think I will get anything out of helping.*”). Emotional prosocial behaviors are behaviors exhibited primarily in very emotional situations (PT\_em; five items; S1:  $\alpha=0.80$ ,  $M=3.76$ ,  $SD=0.71$ ; S2:  $\alpha=0.86$ ,  $M=3.56$ ,  $SD=0.83$ ; sample item: “*I usually help others when they are very upset.*”). Compliant prosocial behaviors (PT\_co; two items; S1:  $\alpha=0.60$ ,  $M=4.04$ ,  $SD=0.74$ ; S2:  $\alpha=0.55$ ,  $M=3.78$ ,  $SD=0.78$ ; sample item: “*When people ask me to help them, I don't hesitate.*”) were defined as helping others when explicitly asked to do so (Carlo et al., 2003).

Antisocial Behavior was measured using 12 adapted items of the 19-item Interpersonal and Organizational Workplace Deviance Measure (Bennett & Robinson, 2000; Haesevoets et al., 2021; S1:  $\alpha=0.84$ ,  $M=1.71$ ,  $SD=0.53$ ; S2:  $\alpha=0.82$ ,  $M=1.57$ ,  $SD=0.49$ ). The items were adapted to measure antisocial group behavior (AGB) in a student population and were used as a unidimensional scale (Haesevoets et al., 2021). An example item of this scale reads: “*In the past year, you acted rudely towards someone in the group.*”

## Results

A Confirmatory Factor Analysis (CFA; see Appendix A for the results) yielded acceptable fit indices for a two factorial structure of MIS and MIQ as it has been reported in the original studies (Aquino & Reed, 2002; Black & Reynolds, 2016).

## Correlations

Table 1 reports the correlations between the MIS and MIQ subscales and the outcome variables. The relationship

between the MIS and MIQ subscales ( $r \leq 0.36$  and  $0.31$ , Study 1 and 2, respectively) was rather modest, considering that both instruments measure moral identity. Moreover, the even weaker correlation between the MIS subscales ( $r=0.25$  and  $0.18$ , respectively) was neither anticipated.

As can be seen in this Table, for each of the behavioral outcome measures the MIQ subscales showed correlations of stronger magnitude than the MIS subscales in both studies. A particularly strong difference was noted for prosocial group behavior and altruistic prosocial behavior in Studies 1 and 2, and antisocial group behavior in Study 2, revealing non-overlapping confidence intervals of the MIS and MIQ subscales.

Within the moral identity instruments, the subscales yielded relationships of different strength with the behavioral outcomes. Within the MIS, Internalization was the stronger correlate for most dependent variables, whereas Symbolization only had a stronger relationship in the case of prosocial group behaviors. These differences, however, were rather small as testified by the overlapping confidence intervals. For MIQ, Moral Self was mostly the stronger correlate for prosocial behaviors, and Moral Integrity the stronger correlate for antisocial and altruistic behaviors, but again, the confidence intervals overlapped.

Given the definition of Symbolization as the public display of moral behavior, it is not surprising that this subscale yielded a small positive correlation with public prosocial behavior. The other moral identity subscales, however, showed a moderately negative correlation with this behavioral outcome.

## Hierarchical Regression

Next, we conducted hierarchical regression analyses with the MIS and MIQ subscales as predictors and each behavioral outcome scale as the dependent variable. In these analyses, the MIS and MIQ dimensions were entered in the first and second block respectively, or vice versa, to assess the relative contribution of the two moral identity measures in predicting the behavioral outcomes.

As shown in Table 2, the MIQ proved to be a better predictor of the behavioral outcomes. Across Studies 1 and 2, MIQ explained more variance than MIS when entered in the first block of the regression, except for two out of 16 analyses. When entered in the second block after the other moral identity measure, MIQ again outperformed MIS except for two out of 16 analyses. Clearly, the extent of explained variance was mostly substantially lower for MIS than for MIQ. The exception to this general pattern is the report of anonymous and emotional prosocial behavior in Study 1. The extent of explained variance in the latter two regression analyses, however, was quite small and in the case of anonymous prosocial behavior, all beta values were even non-significant.

**Table 1** Correlations between Moral Identity subscales and between Moral Identity and outcome measures with respective confidence intervals

MIS_s	MIS_i	MIQ_m	MIQ_i	PGB	PT_pu	PT_an	PT_di	PT_al	PT_em	PT_co	AGB
Study 1	.25**	.23**	.01	.18**	.13*	.12	.16**	-.04	.19**	.14*	-.06
	(.13,.35)	(.11,.33)	(-.11,.13)	(.07,.29)	(.15,.24)	(-.00,.23)	(.05,.28)	(-.16,.08)	(.07,.30)	(.02,.25)	(-.18,.05)
Study 2	.18**	.16*	.18**	.33**	.12	.25**	.22**	.00	.17**	.22**	-.07
	(.06,.29)	(.03,.28)	(.06,.30)	(.21,.43)	(-.00,.24)	(.13,.36)	(.10,.34)	(-.12,.13)	(.04,.29)	(.09,.33)	(-.19,.06)
Study 1	-	.36**	.27**	.13*	-.21**	-.03	.21**	.22**	.14*	.15*	-.32**
	-	(.25,.45)	(.16,.38)	(.01,.24)	(-.32,-.09)	(-.15,.09)	(.09,.32)	(.10,.32)	(.03,.26)	(.03,.26)	(-.43,-.22)
Study 2	-	.31**	.23**	.18**	-.30**	.20**	.22**	.30**	.20**	.25**	-.23**
	-	(.20,.42)	(.11,.34)	(.05,.30)	(-.41,-.18)	(.07,.31)	(.10,.34)	(.18,.41)	(.07,.31)	(.13,.36)	(-.34,-.10)
Study 1	-	-	.40**	.41**	-.06	.11	.29**	.31**	.19**	.33**	-.36**
	-	-	(.30,.50)	(.31,.51)	(-.17,.06)	(-.01,.22)	(.18,.39)	(.20,.42)	(.07,.30)	(.22,.43)	(-.46,-.26)
Study 2	-	-	.66**	.56**	-.26**	.26**	.32**	.49**	.24**	.41**	-.37**
	-	-	(.59,.73)	(.46,.64)	(-.38,-.14)	(.14,.38)	(.21,.43)	(.38,.58)	(.12,.36)	(.30,.51)	(-.47,-.26)
Study 1	-	-	-	.26**	-.39**	.00	.17**	.52**	.07	.14*	-.50**
	-	-	-	(.16,.37)	(-.49,-.29)	(-.11,.12)	(.05,.28)	(.43,.60)	(-.05,.19)	(.02,.25)	(-.58,-.41)
Study 2	-	-	-	.47**	-.38**	.32**	.16**	.62**	.10	.29**	-.47**
	-	-	-	(.36,.56)	(-.48,-.26)	(.21,.43)	(.04,.28)	(.54,.70)	(-.02,.23)	(.17,.40)	(-.56,-.36)

\*\*  $p < .01$  \*  $p < .05$ . Confidence intervals between parentheses. MIS\_s = Symbolization; MIS\_i = Internalization; MIQ\_m = Moral Self; MIQ\_i = Integrity; PGB = Prosocial Group Behavior; PT\_pu = Prosocial Tendencies (PT)—public; PT\_an = PT – anonymous; PT\_di = PT – dire; PT\_al = PT – altruistic; PT\_em = PT – emotional; PT\_co = PT – compliant; AGB = Antisocial Group Behavior

**Table 2** Hierarchical regression analyses with MIS and MIQ subscales as predictors and Prosocial Group Behavior, Prosocial Tendencies, and Antisocial Group Behavior as dependent variables: Percentage of variance explained, change in explained variance, and beta values of subscales

Study 1		PGB	PT_pu	PT_an	PT_di	PT_al	PT_em	PT_co	AGB
$\Delta R^2$ MIQ (block 1)		18.36%	16.73%	1.29%	8.68%	28.57%	3.59%	10.58%	27.95%
$\Delta R^2$ MIS (block 2)		1.35%	3.96%	1.55%	1.87%	0.92%	2.58%	0.46%	2.36%
$(\Delta F)$ 1→2		2.32	6.92**	2.21	2.90	1.80	3.80*	0.72	4.71**
$\Delta R^2$ MIS (block 1)		4.11%	7.75%	1.68%	5.57%	5.49%	4.60%	3.20%	10.55%
$\Delta R^2$ MIQ (block 2)		15.60%	12.94%	1.16%	4.88%	23.99%	1.57%	7.84%	19.76%
$(\Delta F)$ 1→2		26.91**	22.59**	1.65	7.55**	47.13**	2.31	12.23**	39.28**
Total $R^2$		19.71%	20.69%	2.84%	10.56%	29.49%	6.17%	11.0%	30.31%
$\beta$	MIS_s	.12*	.15**	.11	.09	-.09	.14*	.06	.02
	MIS_i	-.06	-.18**	-.09	.10	.07	.06	.02	-.17**
	MIQ_m	.35**	.13*	.12	.21**	.13*	.14*	.30**	-.15*
	MIQ_i	.14*	-.40**	-.02	.06	.45**	-.00	.01	-.39**
Study 2		PGB	PT_pu	PT_an	PT_di	PT_al	PT_em	PT_co	AGB
$\Delta R^2$ MIQ (block 1)		32.69%	14.19%	10.90%	10.86%	39.79%	6.41%	16.88%	22.26%
$\Delta R^2$ MIS (block 2)		5.28%	9.70%	4.41%	4.37%	3.83%	3.17%	3.37%	1.30%
$(\Delta F)$ 1→2		10.23**	15.29**	6.26**	6.19**	8.16**	4.20*	5.07**	2.04
$\Delta R^2$ MIS (block 1)		12.01%	11.81%	8.58%	8.38%	9.04%	5.65%	9.14%	5.17%
$\Delta R^2$ MIQ (block 2)		25.98%	12.08%	6.74%	6.86%	34.58%	3.92%	11.11%	18.39%
$(\Delta F)$ 1→2		50.52**	19.04**	9.56**	9.71**	73.61**	5.21**	16.72**	28.87**
Total $R^2$		37.98%	23.89%	15.32%	15.24%	43.62%	9.58%	20.25%	23.56%
$\beta$	MIS_s	.24**	.23**	.18**	.17**	-.14**	.13*	.14*	.04
	MIS_i	-.03	-.26**	.10	.12	.17**	.12	.11	-.12*
	MIQ_m	.43**	.04	.05	.34**	.09	.26**	.35**	-.08
	MIQ_i	.14*	-.38**	.24**	-.12	.55**	-.12	.01	-.39**

\*\*  $p < .01$  \*  $p < .05$ .; MIS = Moral Identity Scale; MIQ = Moral Identity Questionnaire; MIS\_s = Symbolization; MIS\_i = Internalization; MIQ\_m = Moral Self; MIQ\_i = Integrity; PGB = Prosocial Group Behavior; PT\_pu = Prosocial Tendencies (PT)—public; PT\_an = PT – anonymous; PT\_di = PT – dire; PT\_al = PT – altruistic; PT\_em = PT – emotional; PT\_co = PT—compliant; AGB = Antisocial Group Behavior

A closer look at the beta values is also revealing. In all but one regression analysis, one of the MIQ subscales yielded the strongest relationship. In one analysis, there was an *ex aequo* between both scales. Within the MIS, Symbolization is the stronger predictor of prosocial behavior, while Internalization is the better predictor for antisocial behavior. It is striking, though, that, in the second study, Symbolization shows a negative value for altruistic behavior, while Internalization shows a positive value.

For the MIQ subscales, both studies show a very similar pattern. Moral Self shows higher beta values for most of the prosocial outcomes while the peak values of Moral Integrity lie with antisocial and altruistic behavior. Interestingly, Moral Self shows in the first study a positive significant value for public prosocial behavior.

## Discussion

The objective of this study was to compare two moral identity scales. The Moral Identity Scale (MIS; Aquino & Reed, 2002) is currently the most established instrument to measure moral identity. The Moral Identity Questionnaire (MIQ; Black & Reynolds, 2016) was developed to face some measurement

issues regarding MIS, specifically by including a subscale that captures the congruence between moral perception and moral action, namely moral integrity (Black & Reynolds, 2016).

We obtained several interesting results. Specifically, the cross-instrument relationships between the subscales of the two measures were typically rather low, in the 0.20–0.30 range, which is less strong than what can be reasonably expected for instruments that are assumed to measure the same concept. Moreover, the within instrument relationship of the MIS subscales was also rather weak.

In general, MIQ appears to be a better predictor for the selected behavioral outcomes. On the one hand, it yielded correlations of greater magnitudes than MIS. In hierarchical regression analyses, we were able to show that MIQ typically explains a greater portion of the predictable variance than MIS, and at the subscale level, a MIQ subscale was the stronger predictor in 15 out of 16 regression analyses. These differences were very clear for the variables prosocial group behavior, altruism, and antisocial group behavior.

Another noteworthy result is that Symbolization (MIS) and Moral Self (MIQ) more strongly relate to positive behavior in more urgent or emotional situations or when helping behavior is explicitly requested and where the helper is known, whereas the Internalization (MIS) and Moral Integrity (MIQ) subscales



are the stronger correlates of the absence of negative behavior and unconditional helping behavior.

In summary, the MIQ was the better predictor of the selected behavioral outcomes. Its two subscales captured different behaviors and were more predictive of both positive and negative behavior than the subscales of the MIS. Accordingly, this study concludes that, when it comes to predicting self-reported moral behavior, MIQ is the superior instrument.

However, it should be admitted that the MIQ still shows some room for methodological improvements. The Moral Self subscale consists of only positively poled pro-trait items, whereas the items of the subscale Moral Integrity are without exception negatively poled. It is therefore unclear whether methodological artifacts like acquiescence bias are at work. This may explain the findings that Moral Self predicted more positive behaviors, whereas Moral Integrity predicted negative behaviors.

Even though we could support our findings across two independent samples, there are still some issues that should be addressed. First, our study relied exclusively on behavioral outcomes assessed by self-report. It might well be that the two moral identity instruments yield a different pattern of results when actual behavior is involved. Indeed, what people say does not always correspond to what they actually do (Schwitzgebel & Rust, 2014). Second, the fact that the two moral identity instruments have different ways of assessing moral identity might also pose a problem in terms of interpretation. The MIS, and in particular the Internalization subscale, includes items that specifically target the extent of identification with certain moral attributes, while the MIQ tries to capture this identification by assessing how moral beliefs are reflected in general behavioral intentions. In other words, with the MIS Internalization scale, we searched for correlations with anti- and prosocial behavior through an identification measure, whereas in the case of MIQ we tried to explain behavior by an assessment based on general behavioral dispositions.<sup>2</sup> However, at the same time, it should be stressed that this reasoning does not apply to the

<sup>2</sup> Given that correlation analyses as well as hierarchical regressions showed the superiority of the MIQ over the MIS in predicting (im) moral behavior, we wanted to ensure that these effects were not due to criterion contamination. In particular, the items of the MIQ may probe into the same concepts as some of the behavioral measures, particularly the Prosocial Tendencies measure. For this reason, we excluded all items of the MIQ that were formulated as behavior (MIQ items 1, 5, 6, 8, 11, 13, 14, 15, 17, 18 and 19) and performed the same analyses again. The results show that almost the same effects emerge even after excluding the corresponding items. The effects found are slightly smaller. However, for each of the behavioral outcomes, the MIQ subscales showed stronger correlations than the MIS subscales in both studies, and with respect to the hierarchical regressions, the magnitude of explained variance is higher in 13 of 16 cases when the MIQ is placed in the first block or added in the second block. From this, we conclude that criterion contamination plays a minor role in this context. Tables concerning the above results are available on request from the first author.

MIS Symbolization scale which is formulated in terms of behavior as well. Future research should address this question by assessing anti- and prosociality as a trait or a general inclination rather than as a behavior.

However, the present results provide researchers with a better way to consider different types of behaviors when studying the effects of moral identity. As described above, the Internalization subscale is often used singularly without any assessment of the Symbolization subscale. But, as shown in this study, while Internalization is a good predictor of negative behavior, it has only limited explanatory value for a range of positive behavioral outcomes. In this study, the MIQ was shown to encompass two effective subscales that have been proven to be stronger correlates than MIS for different types of pro- and antisocial behavior.

## Appendix A

**Table 3** Confirmatory factor analysis for the confirmation of the factor structure within the Moral Identity Scale and the Moral Identity Questionnaire in two studies

Model		Chi-Square	Df	Chi-Square/DF	RMSEA	SRMR
MIS (2 Factors)	Study 1	114.08	34	3.36	0.091	0.072
	Study 2	102.16	34	3.00	0.090	0.073
MIQ (2 Factors)	Study 1	463.25	169	2.74	0.079	0.074
	Study 2	329.08	169	1.95	0.062	0.056

We chose to not report CFI or other incremental fit indices as they may not be very informative if the baseline model's RMSEA < 0.158 (Kenny et al., 2015)

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**Data Availability** Data and material supporting this study's findings are openly available in OSF at [https://osf.io/7j2as/?view\\_only=b3cd43d9c2564738a9768db59b503537](https://osf.io/7j2as/?view_only=b3cd43d9c2564738a9768db59b503537).

## Declarations

**Conflicts of Interest** No potential competing interest was reported by the authors.

**Ethics Approval** Both studies were approved by the ethical commission of the Faculty of Psychology and Educational Sciences at Ghent University (file number: 2021/13).

**Consent to Participate** Participants were asked for their informed consent before participation.

**Consent for Publication** Participants were asked for their informed consent to use the collected data for scientific publications before participation.

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