

FIVE MORAL FOUNDATIONS IN TROUBLE: AN ALTERNATIVE MODEL FOR MFQ

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The Moral Foundations Theory

The Moral Foundations Theory (MFT) (Haidt 2007, Haidt & Joseph 2004) aims at capturing different human moral concerns approached as common distinct evolved intuitive mechanisms modified by culture. These “moral modules” are connected to five moral domains: care/harm, fairness/cheating, loyalty/betrayal, authority/subversion and purity/degradation. These five moral concerns are divided into two clusters of Individualizing (first two domains) and Binding Morality (last three domains).

	CFI	RMSEA	cor I	cor B	cor BTW
Graham et al. (2011)	0.824*	0.046	0.72	0.72, 0.80, 0.88	-0.16, -0.15, -0.09, -0.01, 0.06, 0.09
Baril & Wright (2012)	N/A	N/A	0.52	0.54, 0.59, 0.57	0.34, 0.32, 0.31, 0.01, 0.16, 0.27
Davies et al. (2014)	0.829	0.063	0.55	0.56, 0.62, 0.67	0.17, 0.20, 0.21, 0.26, 0.30, 0.32
Nilsson & Erlandsson (2015)	0.679	0.072	0.70	0.76, 0.79, 0.87	-0.08, -0.06, -0.01, 0.13, 0.18, 0.25
Bobbio et al. (2011)	0.860	0.071	0.48	0.54, 0.55, 0.60	-0.02, 0.08, 0.11, 0.11, 0.24, 0.28
Yilmaz et al. (2016)	0.780	0.060	N/A	N/A	N/A
Our sample	0.853	0.084	0.85	0.75, 0.85, 0.86	-0.11, -0.05, -0.04, -0.03, 0.05, 0.12

The Moral Foundations Questionnaire

The Moral Foundations Questionnaire (MFQ) (Graham et al. 2009, 2011) was devised to measure a variation in how people perceive and value various moral concerns. It enables researchers to measure relative endorsement of the five moral domains and consequently to establish a sort of morality profile of a given individual or population. In total, the MFQ consists of 30 (plus two control) items sorted into two subscales. First relevance subscale asks participants to evaluate the importance of different considerations connected to various moral concerns while deciding what is the right thing to do and is, therefore, designed to capture more reflective moral reasoning. Second judgment subscale is trying to tap more into intuitive moral cognition and, therefore, asks the participants about their agreement/disagreement with various statements associated with five moral foundations as theorized in MFT.

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What's the trouble with MFQ?

In the studies using the Moral Foundations Questionnaire (MFQ), based on one of the most influential theories in moral psychology the Moral Foundation Theory (MFT), there is usually an ignored **poor fit between the five-factor morality model and data** (Tab. 1).

A poor fit is indicated by low indices (Comparative Fit Index – CFI, Root Mean Square Error of Approximation – RMSEA, and Tucker-Lewis Index – TLI) is caused by the inappropriate model used in a confirmatory analysis.

The five-factor model does not correspond well the way people think about the moral issues as captured by MFQ.

Models tested

In the literature, there are two competing models concerning the factor structure of the MFQ: the two-factor (Individualizing and Binding moralities) and five-factor (five moral domains) models. Along with these models, we employed and tested (N=478) also enhanced bi-factor model and more appropriate **two-tier model**.

In case of the latter two models, we employed measures of internal reliability as the Omega index (ω), the Hierarchical Omega index (ω_h), and the Explained Common Variance (ECV)..

Results

A two-tier model achieved the best fit to the data (see Fig. 1). Results support the notion of two related but distinct moralities – one connected to individual (Individualizing) and other connected to the group (Binding).

Five moral domains are of residual significance after extracting the moral content.

Broader implications & future directions

- five moral domains model overestimated in the research
- need to psychometrically test other questionnaires based on MFT
- need to devise a tool testing Individualizing and Binding moralities directly and out of the five domains

Results in detail

A two-factor correlated model showed suboptimal fit (CFI=.805, RMSEA=.098) with data, and so does five-factor correlated model (CFI=.853, RMSEA=0.084), although the latter model displays significant improvement regarding likelihood ratio test, fit indices and information criteria. These results replicate outcomes of previous studies.

The bifactor model has displayed significant improvement of the fit in comparison with a five-factor correlated model, but its fit indices remained suboptimal (CFI=.862, RMSEA=.085). The hierarchical Omega is .72 (single general factor explains 72 % of variance), but the ECV is only .52 (general factor is not sufficiently unidimensional).

The two-tier model has not only displayed the best fit but also its fit indices are adequate (CFI=.912, RMSEA=.069). Likelihood ratio tests and information criteria show that this model has the best fit with the data. The hierarchical Omega of this model is .87 (two general factors explain 87 % of variance). The ECV is .75 (two general factors explain 75 % of variance explained by all factors).

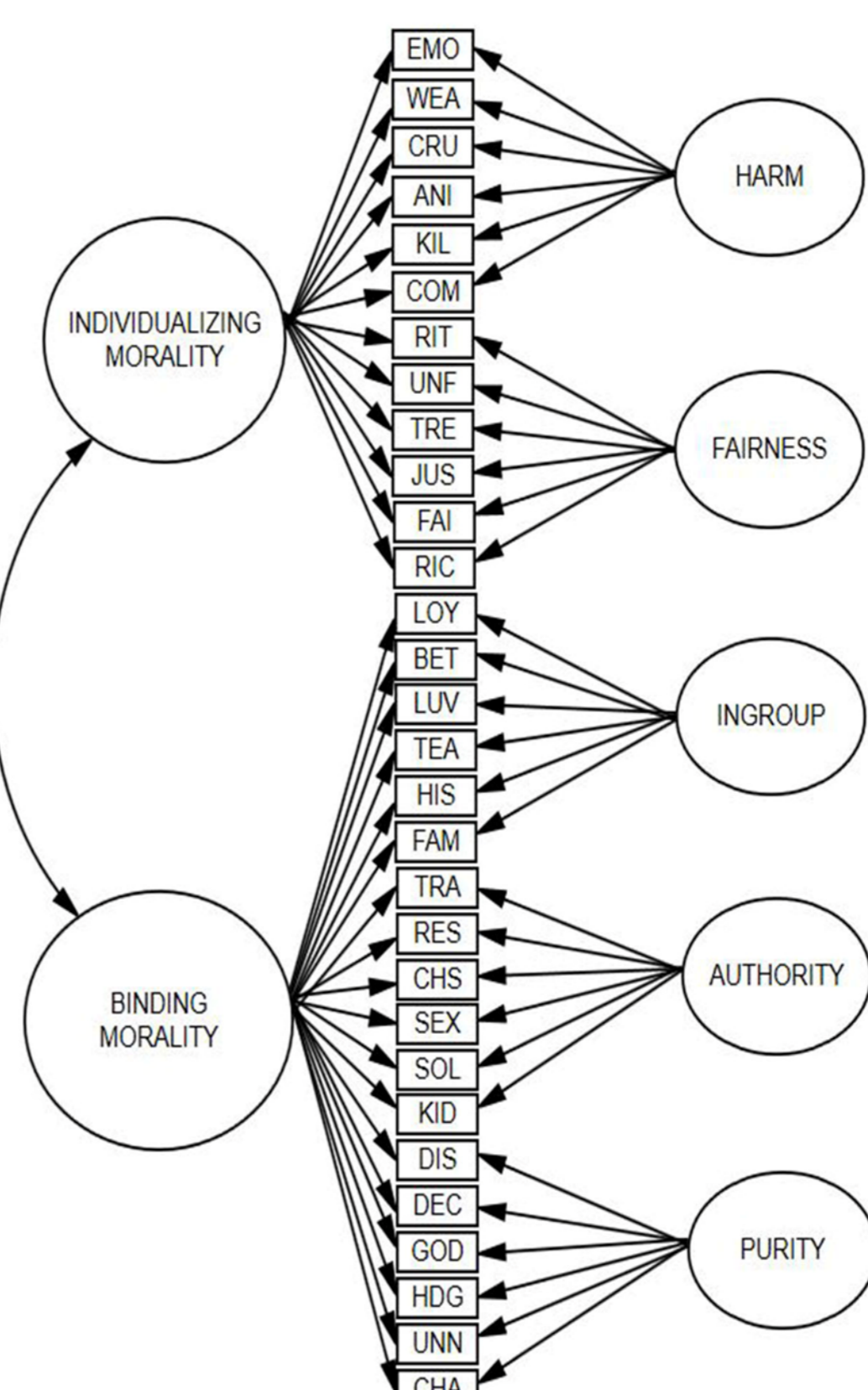


Fig. 1

Are fit indices meaningless for MFQ?

The fit index indicates the ability of the model to reproduce the data (Kenny 2015, but Davies and colleagues (2014, p. 433) evoke two reasons for poor fit and ignoring fit indices. The first disputable one is that a null model (which assumes zero correlations among items) is “too strict” to be applied to such a complex thing as moral judgments. Therefore CFI and TLI indices cannot be high. The second argument for ignoring CFI and TLI indices is connected to the value of RMSEA index. Davies and colleagues, professedly based on Kenny (2015), follow the rule of thumb of refusing CFI index as meaningless if RMSEA of the null model is lower than .158. The rule is statistically valid, but interpreting CFI as “not a good indicator of fit” (Davies et al., 2014, p. 433) is misleading. Indeed, when RMSEA index of the null model is low, even CFI will not achieve an optimal value as well. In any case, it doesn't mean that CFI is meaningless since both compare in a way a fit of null and alternative models.

Analysis in detail

For data recording, we used the program SPSS Statistics (version 21.0), and for statistical processing, the software R (R Core Team, 2017) and the package mirt (Chalmers, 2012) were used. We aimed to evaluate the claim that the two general factors (Individualizing and Binding Morality) of the MFQ sufficiently captures the variance.

For all models, the standard cutoff criteria for fit indices were: CFI > 0.90 indicate acceptable fit, CFI > 0.95 indicate excellent fit; RMSEA < 0.08 indicate acceptable fit, and RMSEA < 0.05 indicate excellent fit (Hu & Bentler, 1999).

For reliability indices, no consistent threshold values are provided in the psychometric literature. Values > 0.70 for both the Hierarchical Omega and the ECV were considered as adequate – such values guarantee simultaneously that data is sufficiently unidimensional, and that the general factor is strong enough and captures a sufficient amount of variance.

The two-tier model

The two-tier model seems to be particularly appropriate for the MFQ as it assumes two (correlated) general factors (and not the single general factor as in the bifactor model), and five specific factors in the model (see Figure 1). According to the model, there are two general factors (Individualizing Morality and Binding Morality) which explain a substantial amount of variance in items.

After extracting these two general factors, there are still meaningful overlaps of content in five specific domains, but these are residuals with no moral content – a people can think harm outside of moral terms. For example, we probably wouldn't approach accidentally caused harm or harm caused by a dentist to a patient during surgery regarding morality, but rather regarding a dentist's proficiency and skill.

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