

FIVE MORAL FOUNDATIONS AS NONMORAL RESIDUALS. AN ALTERNATIVE MODEL FOR MFQ



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The Moral Foundation 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).



Moral Foundation 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 moral profile of a given individual and/or population. In total, the MFQ consists of 30 (plus 2 control) items sorted into two subscales – i) *the relevance subscale* asks participants to evaluate the importance of different considerations connected to various moral concerns while deciding what is right thing to do and is, therefore, designed to capture more reflective moral processes; 2) *the 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.

References
 BONIFAY, W. E. 2015. An illustration of the Two-Tier Item Factor Analysis Model. In: Reise SP, Revicki DA (Eds.), *Handbook of Item Response Theory Modeling*. New York: Routledge: 207-224.
 CAI, L. 2010. A Two-Tier Full-Information Item Factor Analysis Model with Applications. *Psychometrika* 75(4), 581-612.
 CAI, L. 2016. Two-Tier Item Factor Analysis Modeling. In: van der Linden, W. J. (Ed.), *Handbook of Item Response Theory*, vol. 1. Boca Raton: Taylor & Francis: 421-435.
 DAVIES, C. L., Sibley, C. G., and Liu, J. H. 2014. Confirmatory factor analysis of the Moral Foundations Questionnaire: Independent scale validation in a New Zealand sample. *Social Psychology*, 45(6), 431-436.
 GRAHAM, J., Haidt, J., and Nosek, B. A. 2009. Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology*, 96(5), 1029-1046.
 GRAHAM, J., Nosek, B. A., Haidt, J., Iyer, R., Koleva, S., and Ditto, P. H. 2011. Mapping the moral domain. *Journal of Personality and Social Psychology*, 101(2), 366-385.
 HAIDT, J. 2007. The New Synthesis in Moral Psychology. *Science* 316(5827), 998-1002.
 HAIDT, J., and Joseph, C. 2004. Intuitive Ethics: How Innately Prepared Intuitions Generate Culturally Variable Virtues. *Daedalus*, 133(4), 55-66.
 HU, L. and Bentler, P. M. 1999. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal* 6(1), 1-55.
 KENNY, D. A. 2015. Measuring Model Fit. Available from: <http://davidakenny.net/cv/fit.htm> 2015 (Accessed 25 January 2018).

What's the problem with MFQ?

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

A poor fit is indicated by low Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) and caused by inappropriate model used in 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 main competing models concerning the factor structure of the MFQ: the two-factor and five-factor models. Along with these models, we employed and tested also bi-factor and two-tier model. **A two-tier model achieved the best fit to the data.**

A two-tier model (Cai 2010, 2016; Bonifay 2015) postulates two general (correlated) factors (Individualizing and Binding moralities) and allows, contrary to five-factor model, to account for the residual variance explained by the content overlap of five specific factors after the extraction of the two general factors, contrary to two-factor model.

Results

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

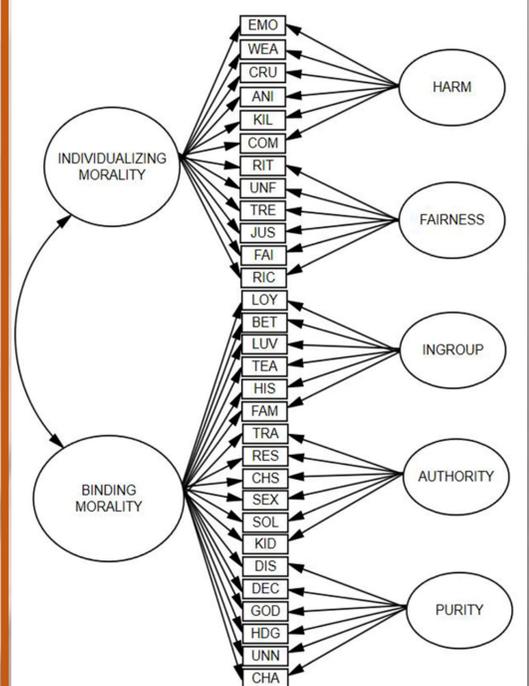
- five moral domains model overestimated in previous research
- cross-cultural modular nature of moral domains disputed
- need to test the fit between the MFT model and MFQ data across the cultures and outside the WEIRD population
- need to devise a tool testing Individualizing and Binding moralities directly and out of the five domains



Are CFI and TLI indices meaningless for MFQ? Quite contrary!

It has been assumed (Davies et al. 2014) that CFI and TLI indices cannot be high, since morality is a complex phenomenon and therefore they're meaningless. However, we should look for the reasons of their low values instead.

The reasons are linked to different assumption of those who argue for ignoring CFI and TLI indices. Davies and colleagues, professedly based on Kenny (2015), follow the rule of thumb of refusing CFI index as meaningless if RMSEA is lower than .158. But what does lower RMSEA index indicate? Basically, it is that null model has better fit than proposed alternative model (five-factor model). So, if RMSEA index is low also CFI index, which compares null and alternative model as well, will achieve suboptimal value favoring a null model.



Results in detail

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 in terms of 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 five-factor correlated model, but its fit indices remained suboptimal (CFI = .862, RMSEA = 0.085). The hierarchical Omega is .72 which means that single general factor explains 72 % of variance, but the ECV is only .52 which means that 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 = 0.069). 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 which means that two general factors general factor explain 87 % of variance. The ECV is .75 which means that these two general factors explain 75 % of variance explained by all factors.

