

# Dynamic Patterns of Human Rights Practices

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## Summary

- ▶ A science of international human rights requires valid comparisons of repression levels across time and space. Though extensive data collection efforts have made such comparisons possible in principle, statistical measures based on simple additive scales have made them rare in practice.
- ▶ We develop a dynamic measurement model that contrasts with the current approaches by (1) accounting for the fact that human rights indicators can be more or less informative about the latent level of repression, (2) allowing realistic descriptions of measurement uncertainty in the form of credible intervals, and (3) modeling temporal dependence in human rights levels within states over time.
- ▶ The dynamic model (DO-IRT) outperforms standard static measurement model (O-IRT), which is used elsewhere in international relations and comparative politics.
- ▶ The DO-IRT model extends the O-IRT model by using a prior of  $\theta_{it} \sim N(\theta_{i,t-1}, \delta)$  for each country-year.

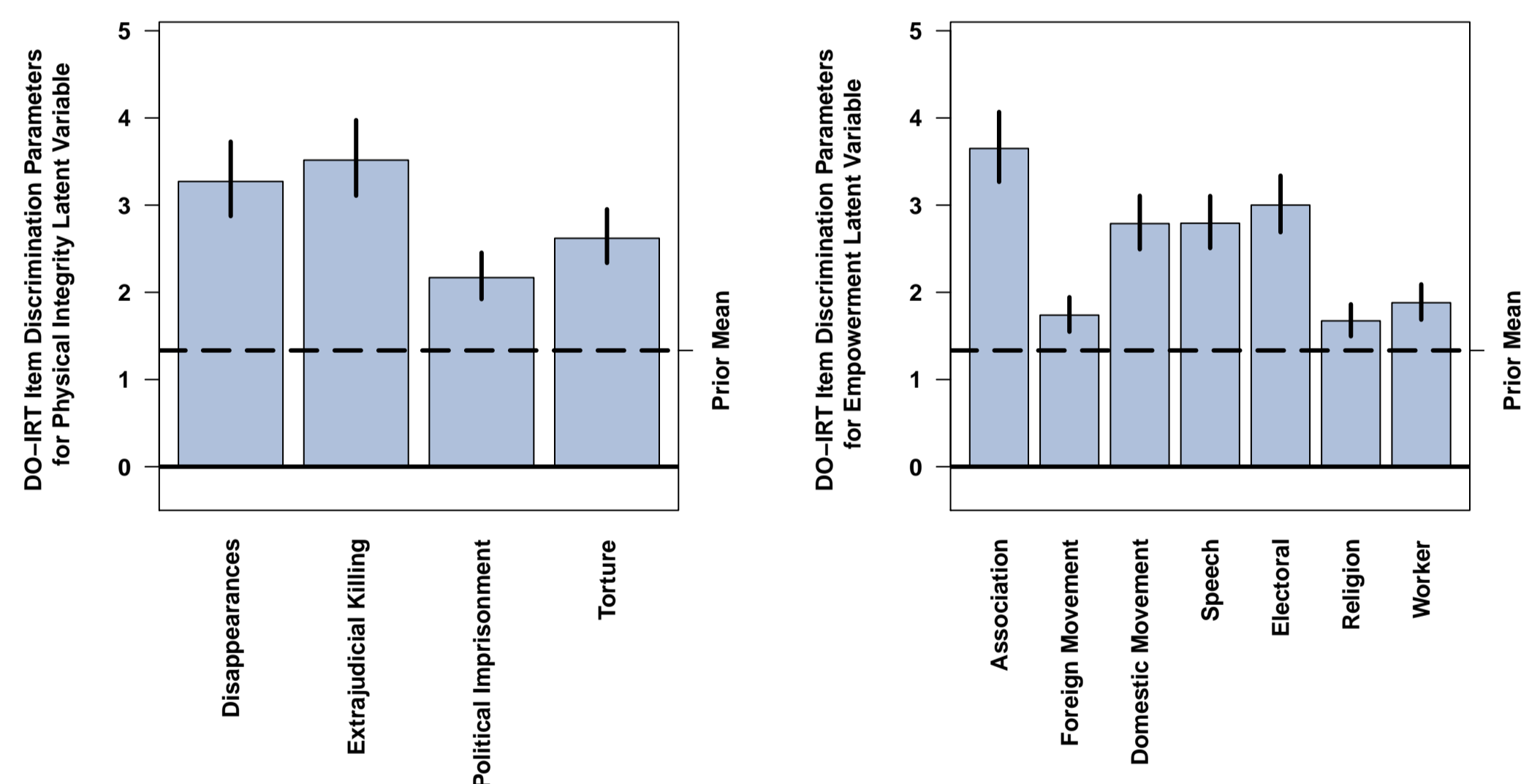
## CIRI Human Rights Indicators

### Items from Physical Integrity Index

Disappearances	Lack of deliberate disappearances of citizens by the government
Extrajudicial Killing	Lack of political and other extrajudicial killings or unlawful deprivation of life
Political Imprisonment	Lack of imprisonment because of religious, political or other beliefs in a give year
Torture	Lack of torture and other cruel, inhumane, or degrading treatment or punishment

Table: Variables in the additive human rights scales. Each item is coded 0, 1 or 2 and added together to form the physical integrity or empowerment indices (See the paper for the empowerment item descriptions).

## Discrimination of Human Rights Indicators



## Comparison of Differences Between Country-Years

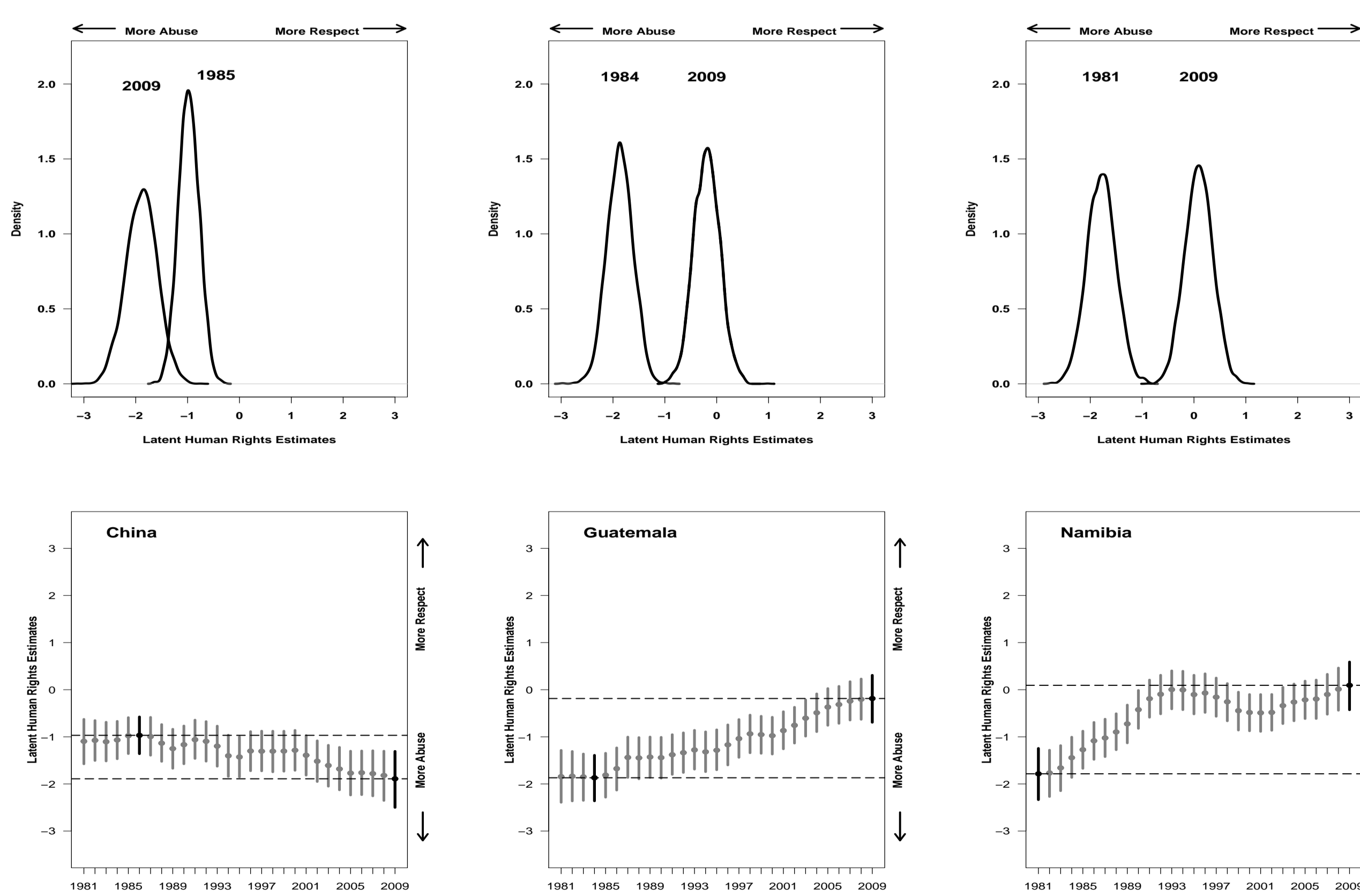


Figure: DO-IRT highest and lowest posterior density for China, Guatemala and Namibia are displayed in the upper row of plots. In the lower row of plots, the dots are posterior means and lines are 95% credible intervals from 1981-2009. A statistical comparison of the draws from the model allows us to give the equivalent of a p-value for the hypothesis of a difference between the highest and lowest years or any other comparison between units.

## Overall Model Differences

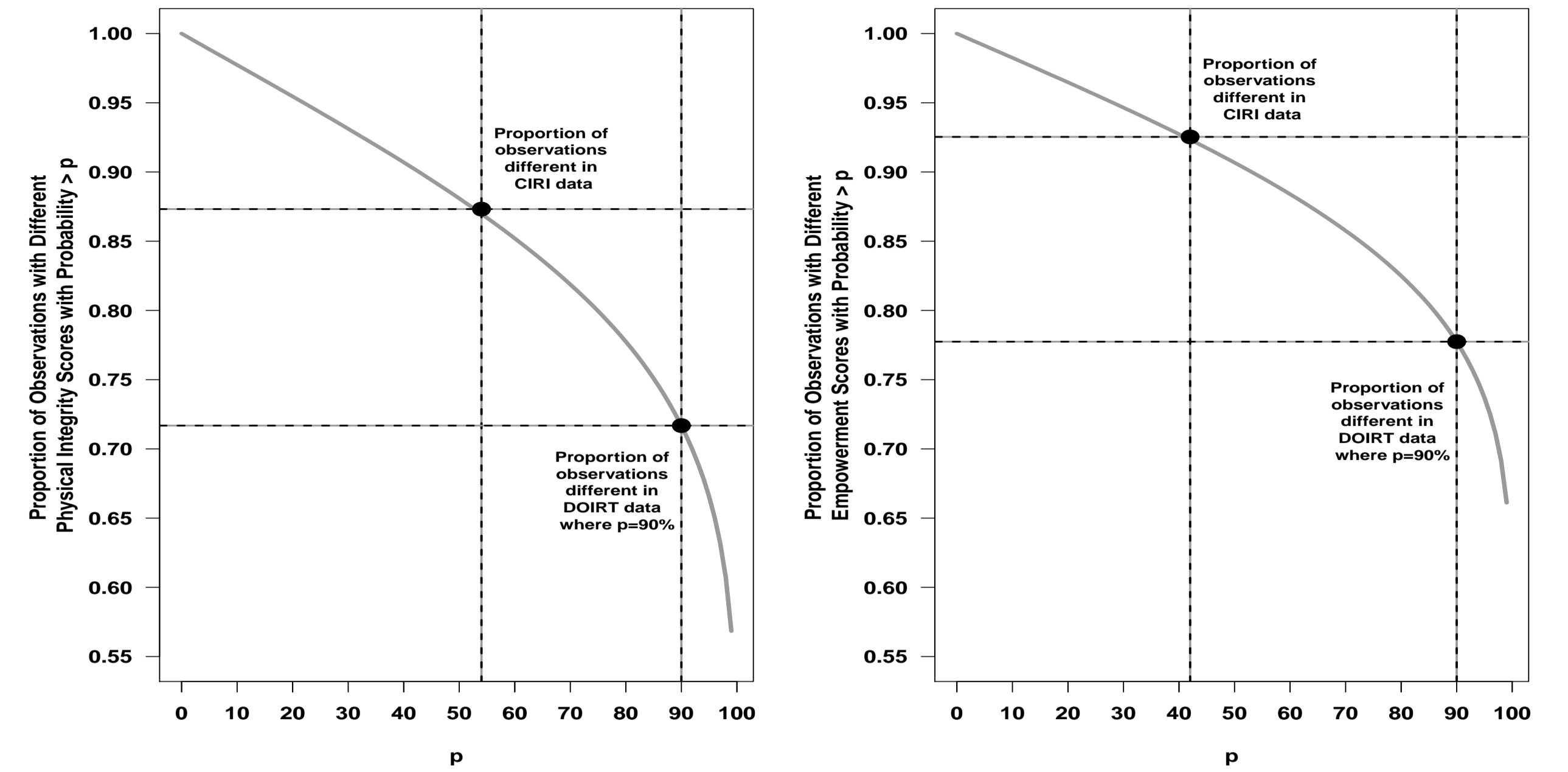


Figure: Summary of paired country-year comparisons for all such pairs in the DO-IRT physical integrity model and empowerment model. The Y-axis in each graph represents the proportion of country-year pairs that the DO-IRT model predicts are different from one another with level of confidence p on the x-axis. It is important to emphasize that there is no model-free way to estimate latent levels of respect for human rights. Thus, the additive scale approach is a *model* assuming equally weighted indicators and no error. If two country-years have the same value on the CIRI additive scale, the additive scale model states that those country-years are the same with a probability of 1. Our model finds substantial evidence of variation in latent respect for human rights within levels of the traditional additive scale.

## Posterior Predictive Checks

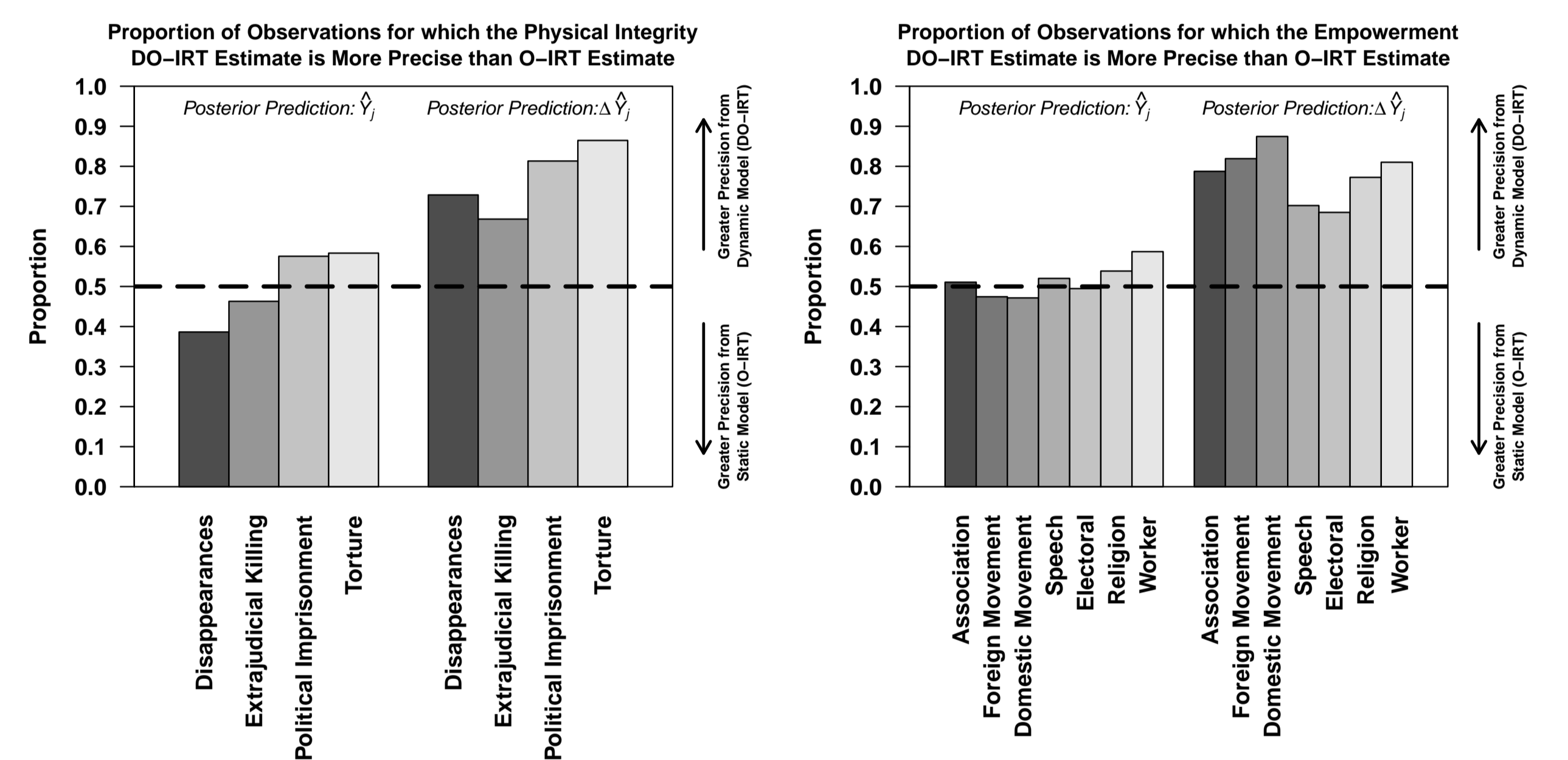


Figure: Proportions closer to 1 indicate that the dynamic version of the model is outperforming the static version of the model at predicting the original CIRI items and changes in those items from year  $t - 1$  to year  $t$ . Proportions closer to 0 indicate that the static version of the model is outperforming the dynamic version. Proportions at 0.50 indicate that both models are predicting the items with about the same amount of error. Notice that while a few of the proportions in the first figure are below the 0.50 mark, only in the case of predicting disappearances does the static model (O-IRT) substantially out performs the dynamic model. The dynamic model is clearly superior at predicting temporal changes in the original data.

## Predictive Validity

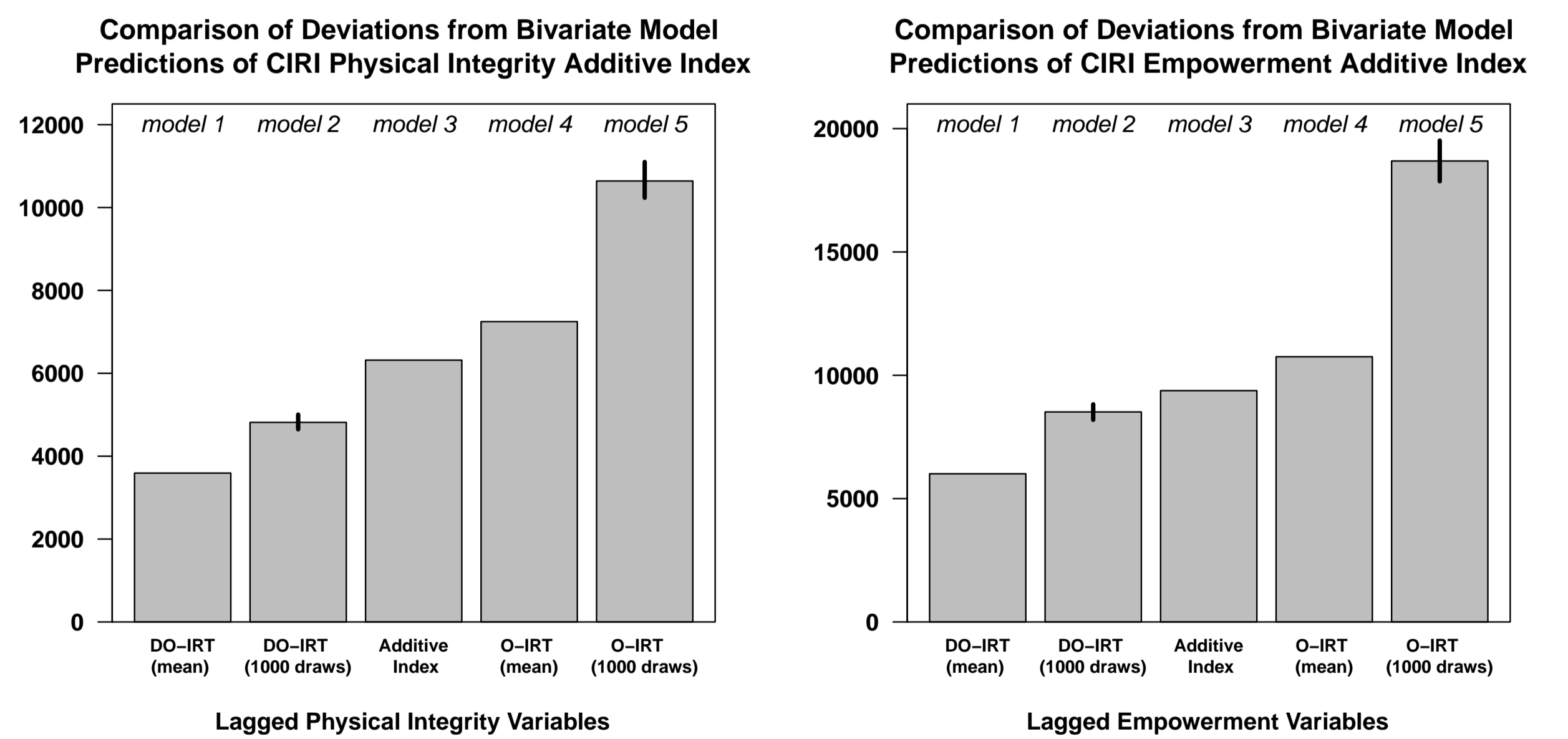


Figure: Sum of squares deviations are derived from each of five bivariate ordered logistic regressions in which the CIRI Physical Integrity Additive Index (left panel) and the CIRI Empowerment Additive Index (right panel) are regressed on one of five different lagged variables. Lower values represent a better fitting model. The dynamic latent variable in period  $t - 1$  predicts values of the indices in period  $t$  with greater accuracy than the static variables or the additive indices themselves.

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