

Hot Under the Collar: a Latent Measure of Interstate Hostility

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Overview

- This project presents a latent measure of interstate hostility created using a Bayesian Item Response Theory model and data on international interactions

Problem

- Existing measures of hostility are either too aggregated or are not comparable across time
- Presented measure combines the accuracy of expert-coded conflict data and granularity of the machine coded dataset

Data

- Militarized Interstate Disputes (MID) dataset (Palmer et al 2015)
- The Cline Center Historical Phoenix Event Data (Althaus, Bajjalieh, Carter, Peyton, and Shalmon 2017)

Methodological approach

- Bayesian Item Response Theory model with application of a varying difficulty parameter (intercept) to the Phoenix material conflict data
- This model solves the problem of reporting bias in events data coverage through a model structure in which human-coded data is used as a benchmark to correct for biases in machine-coded data

Model

$$P[y_{ij} = 1] = F(\alpha_{j1l} - \beta_j\theta_{it})$$

⋮

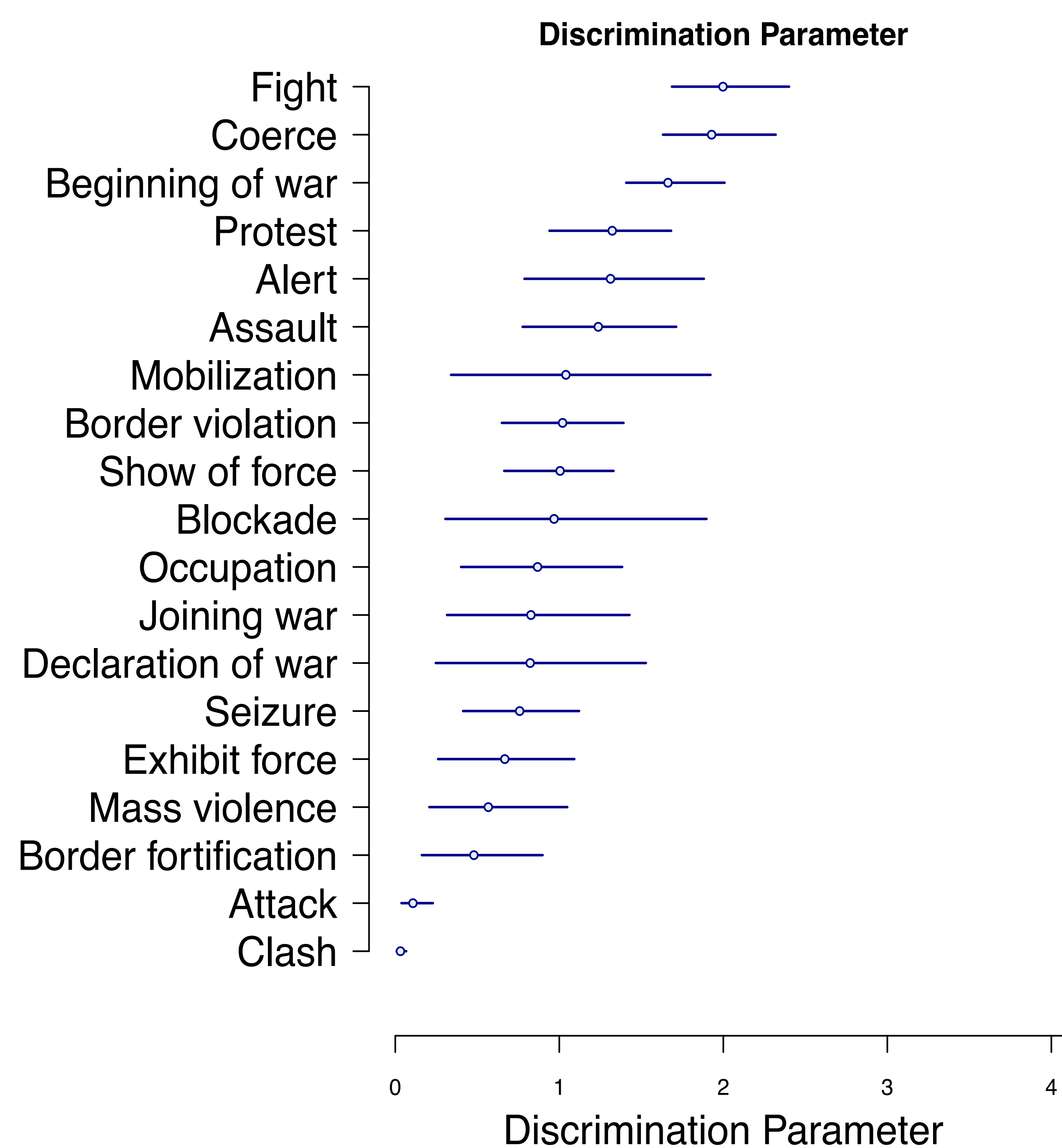
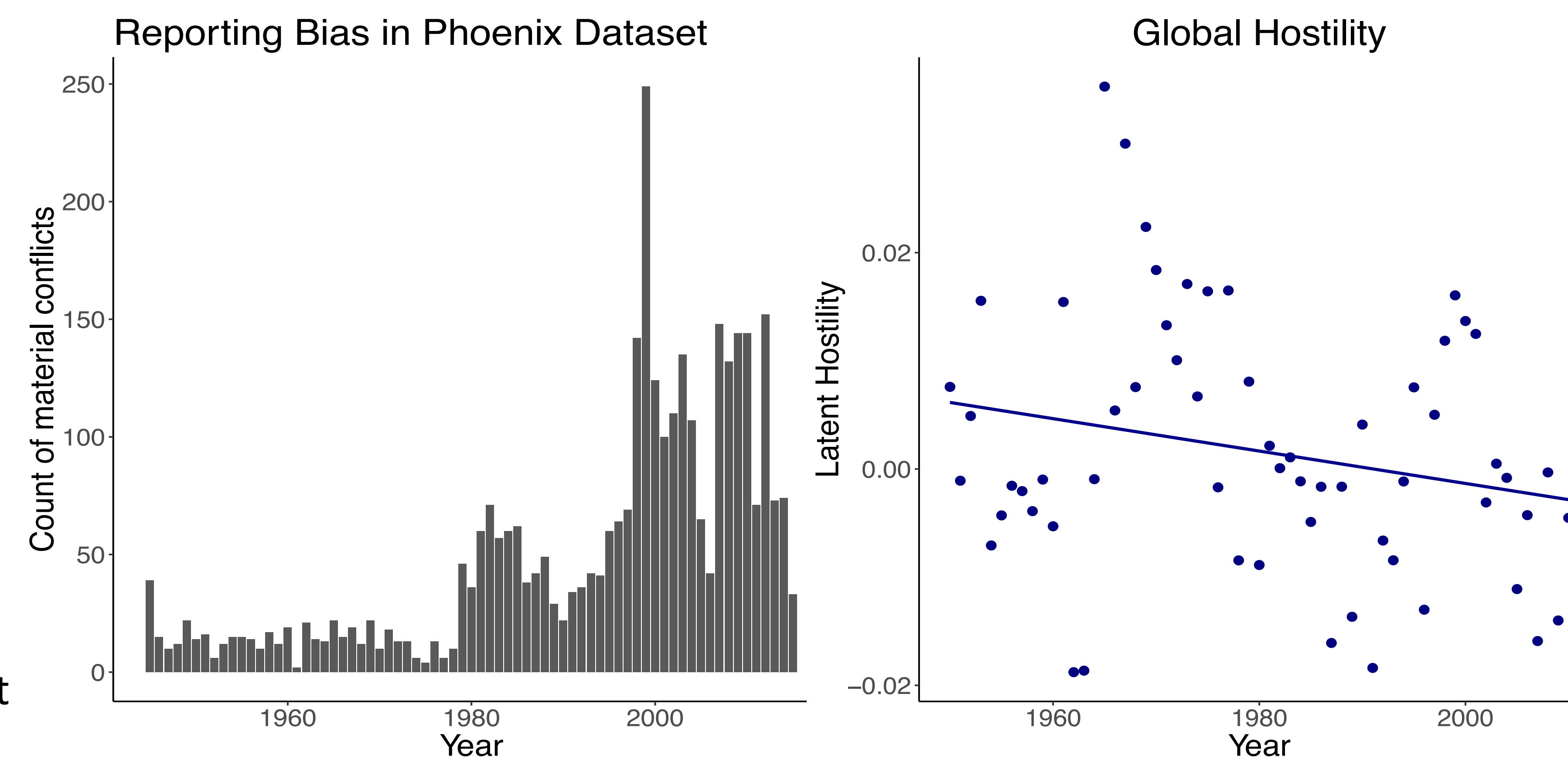
$$P[y_{ij} = k] = F(\alpha_{jtk} - \beta_j\theta_{it}) - F(\alpha_{jtk-1} - \beta_j\theta_{it})$$

⋮

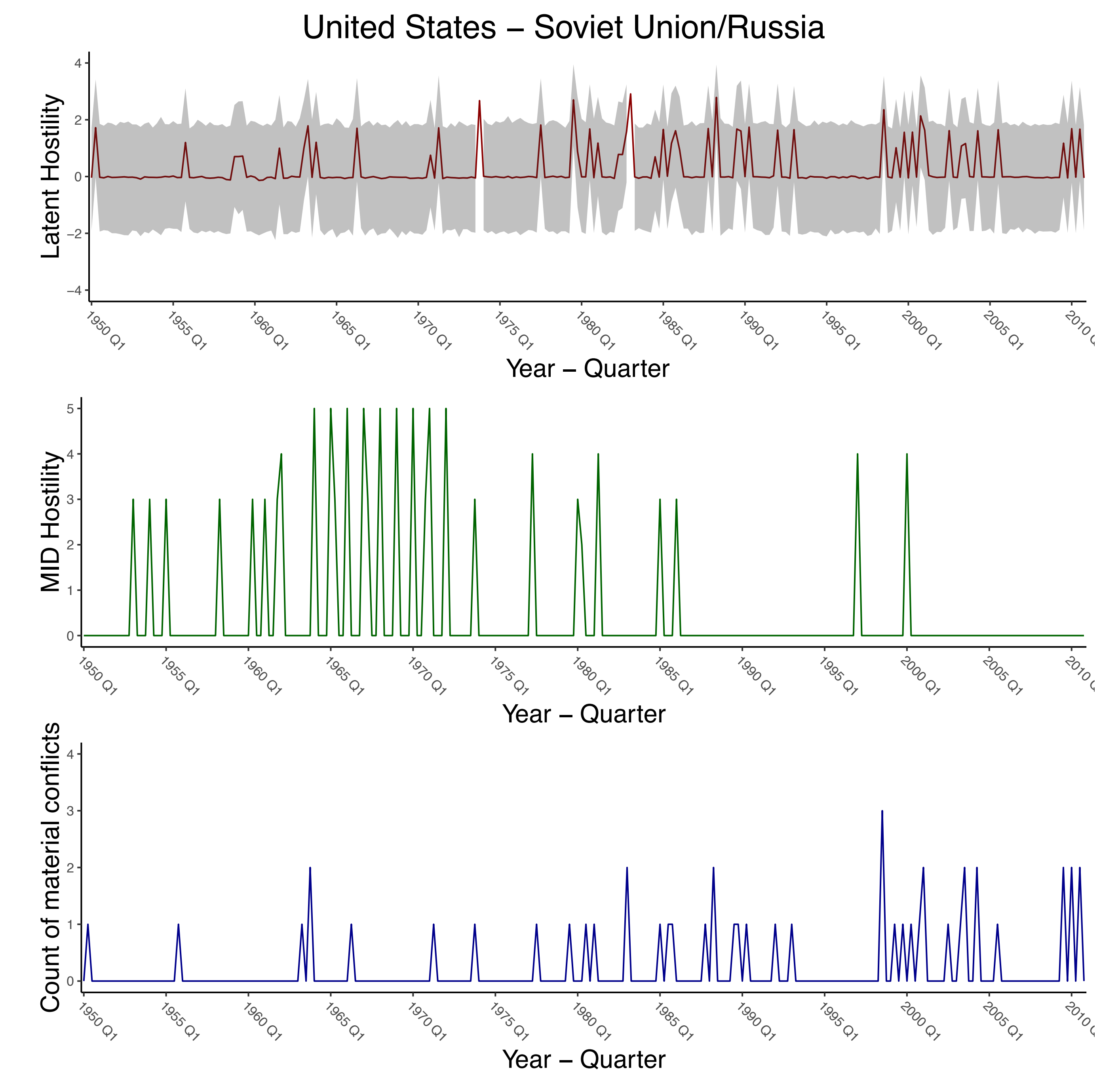
$$P[y_{ij} = K_j] = 1 - F(\alpha_{jK-1} - \beta_j\theta_{it})$$

Results

- Temporal variation in the level of the global hostility shows that (contrary to the Phoenix data) the world has become less hostile over time



Discrimination parameter indicates the extent to which change in each of the manifestations corresponds to a change in the hostility



The example of the United States – Soviet Union/Russia dyad shows that my hostility measure combines the information both from the MID and Phoenix data providing us with granular and precise information about conflict dynamics within the dyad

Summary

- This project presents a new latent measure of interstate hostility that can be used to study conflict dynamics
- This model solves the problem of reporting bias in machine coded event data though the application of a varying difficulty parameter (intercept) to the event dataset
- The results show that scholars should be cautious when using machine-coded datasets to make comparisons across time