Making Friends And Influencing Duration
Replicating and Extending Brian Phillips' "Terrorist Group Cooperation and Longevity" (2014)

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Introduction

Phillips' Research Question

Does increasing the number of allies that a terror group has increase the group's duration?

Motivation for Extension

What if *who* a group is allied with matters more than the overall count of allies?

Baseline and Alternative Models

Problem

The model that Phillips estimated can not be applied to an expanded dataset that includes additional network information. Several independent variables are collinear with homophilic attributes of the alliance networks.

Overlap in Coefficient and 95% CI Range Across Full and Parsimonious Model
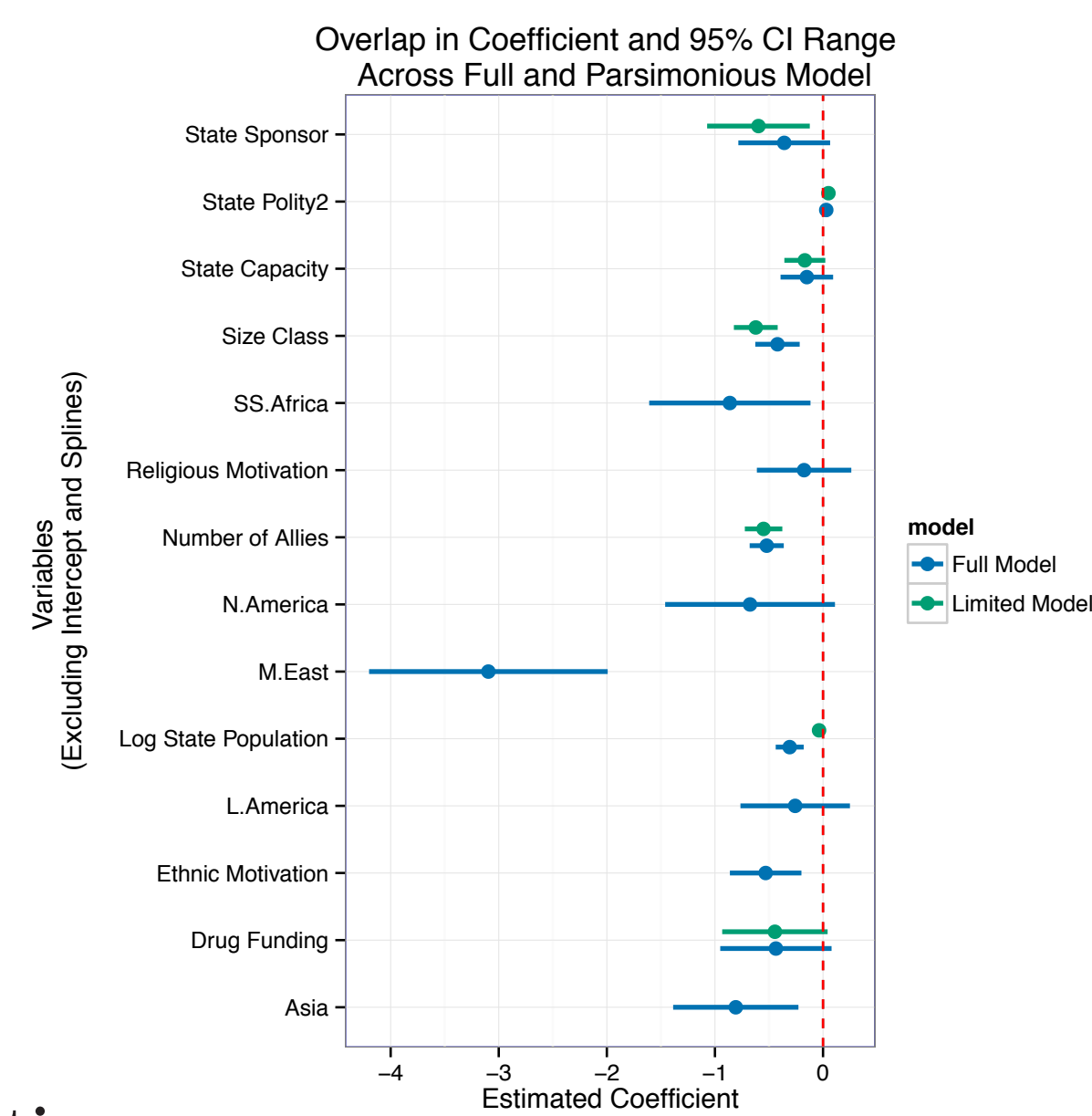
Solution

The parsimonious model is consistent across five of the six independent variables, with the most impactful difference occurring for the logged state population. Although it loses the impact of regional dummies and religious motivation, the limited model allows for inclusion of community attributes.
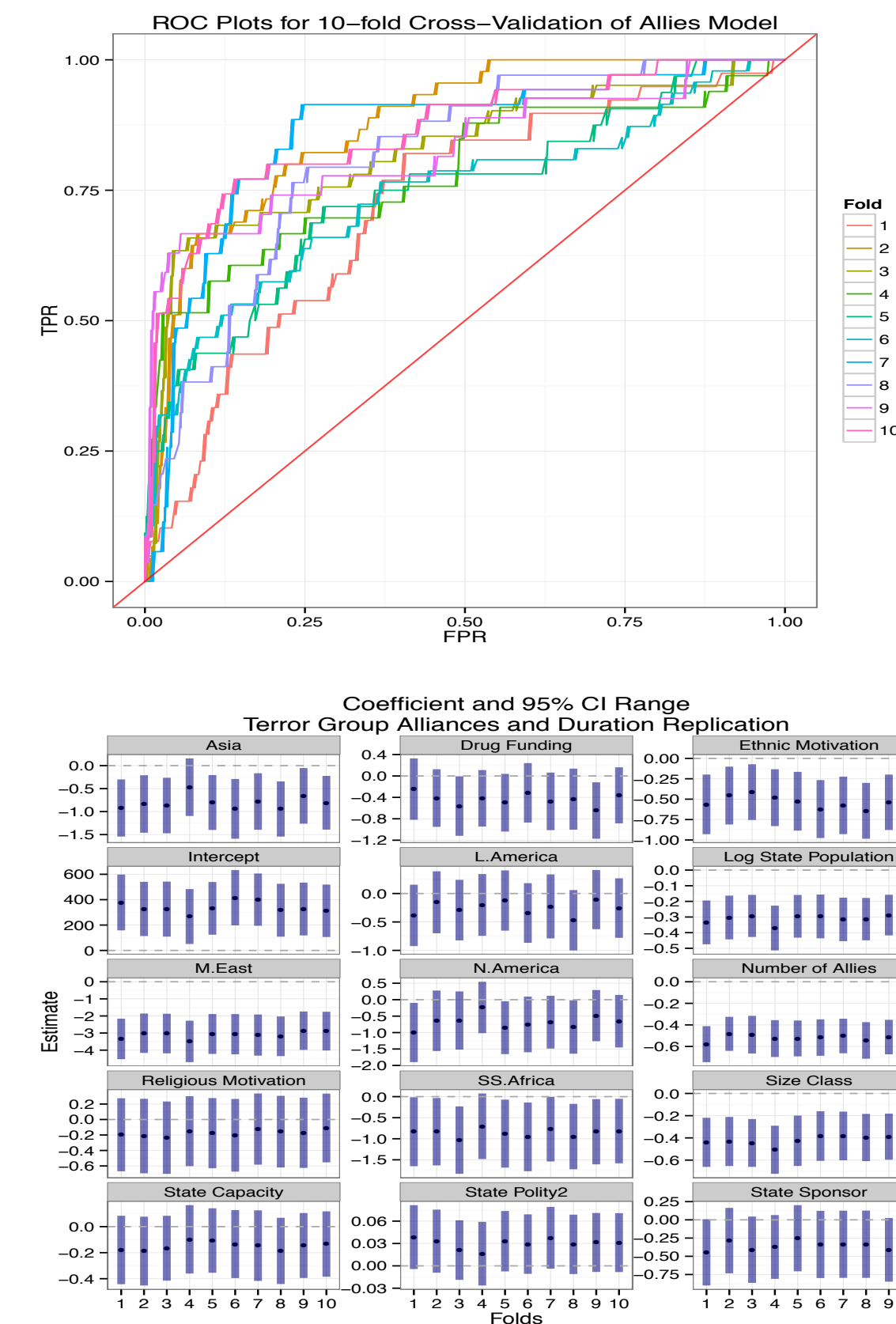
Marginal Effects of Allies in Base Model

The graph below shows the changes in predicted probability of group failure as number of allies increases for three group-years.
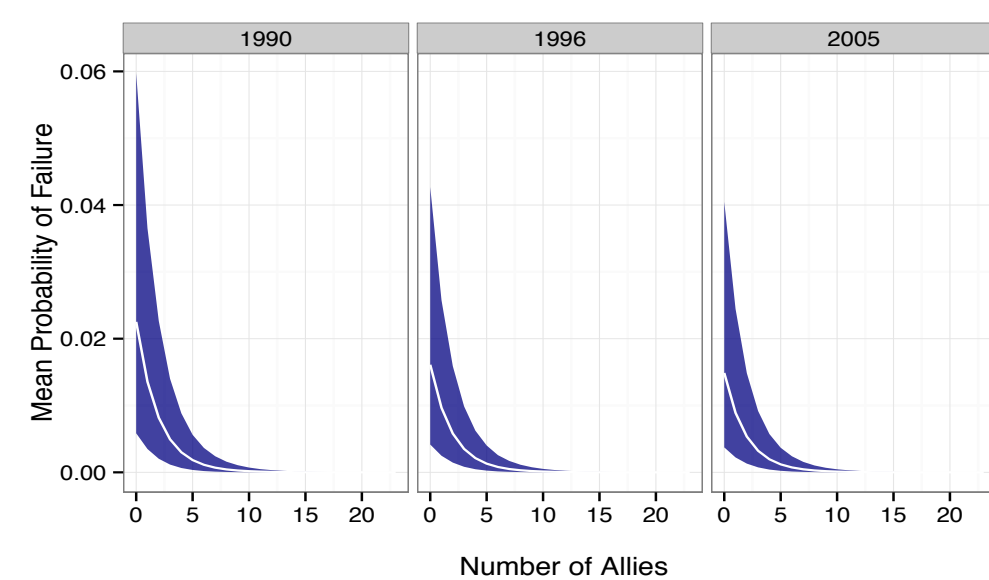

Robustness of the Base Model

The plots below indicate that Phillips' model is robust to a 10-fold cross validation.

ROC Plots for 10–fold Cross–Validation of Allies Model

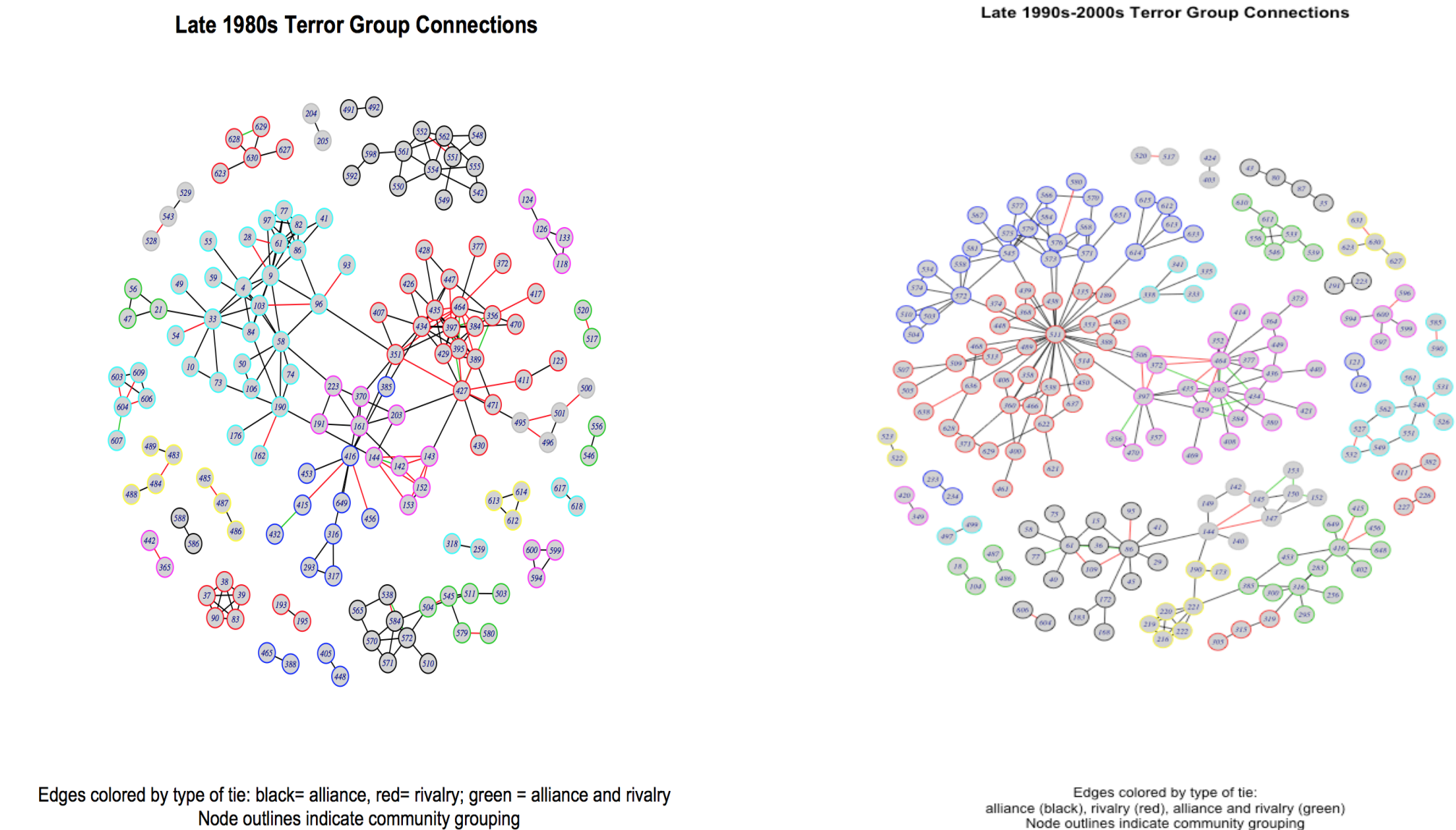Coefficient and 95% CI Range Terror Group Alliances and Duration Replication

Predictive Power, Base Model

Despite robustness, the predictive accuracy of the model is unimpressive both in the full model and in the training sets of the cross-validation. The light blue plot is for the full data, and the darker blue separation plots represent separation plots for each of the folds of a 10-fold cross-validation.
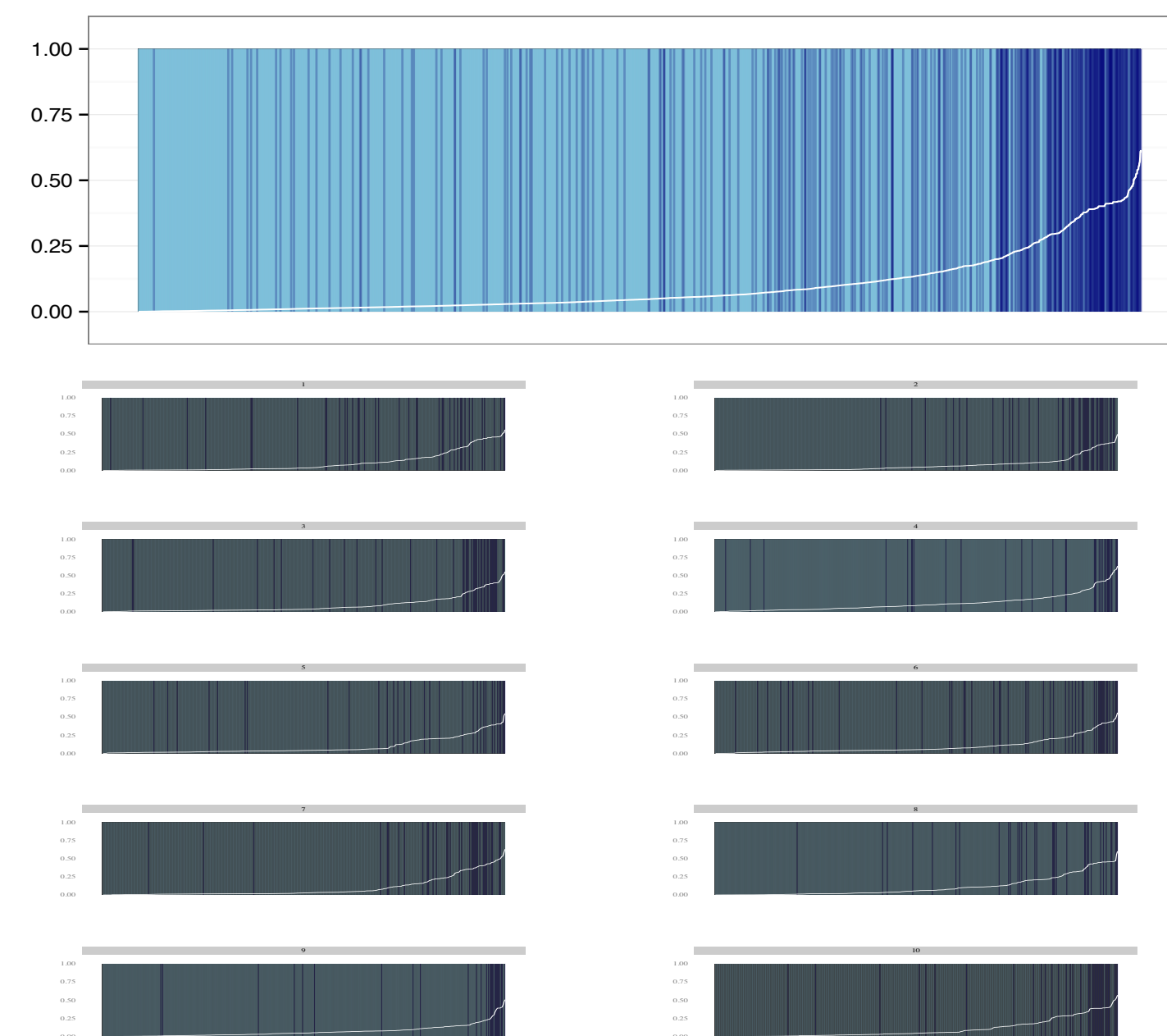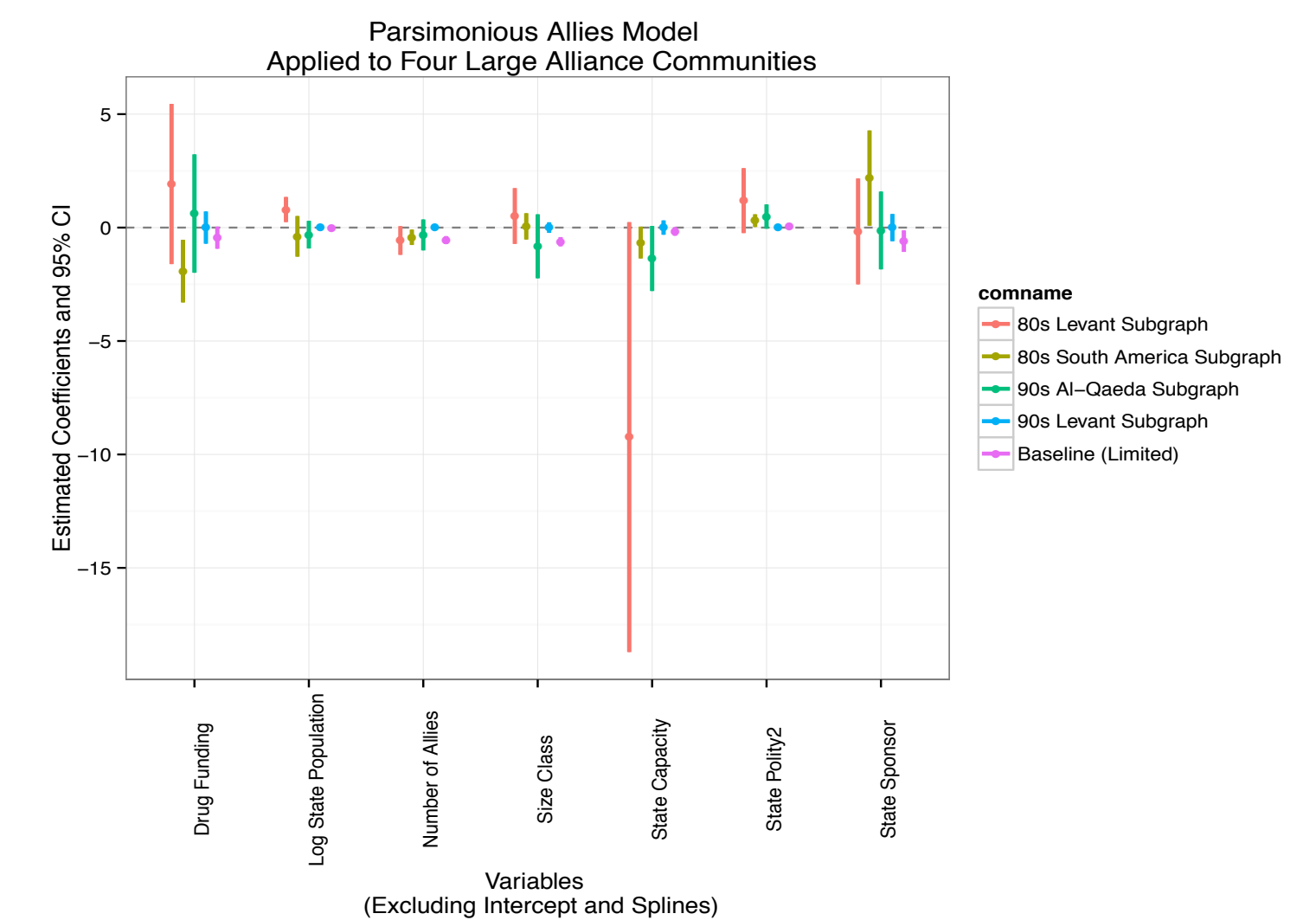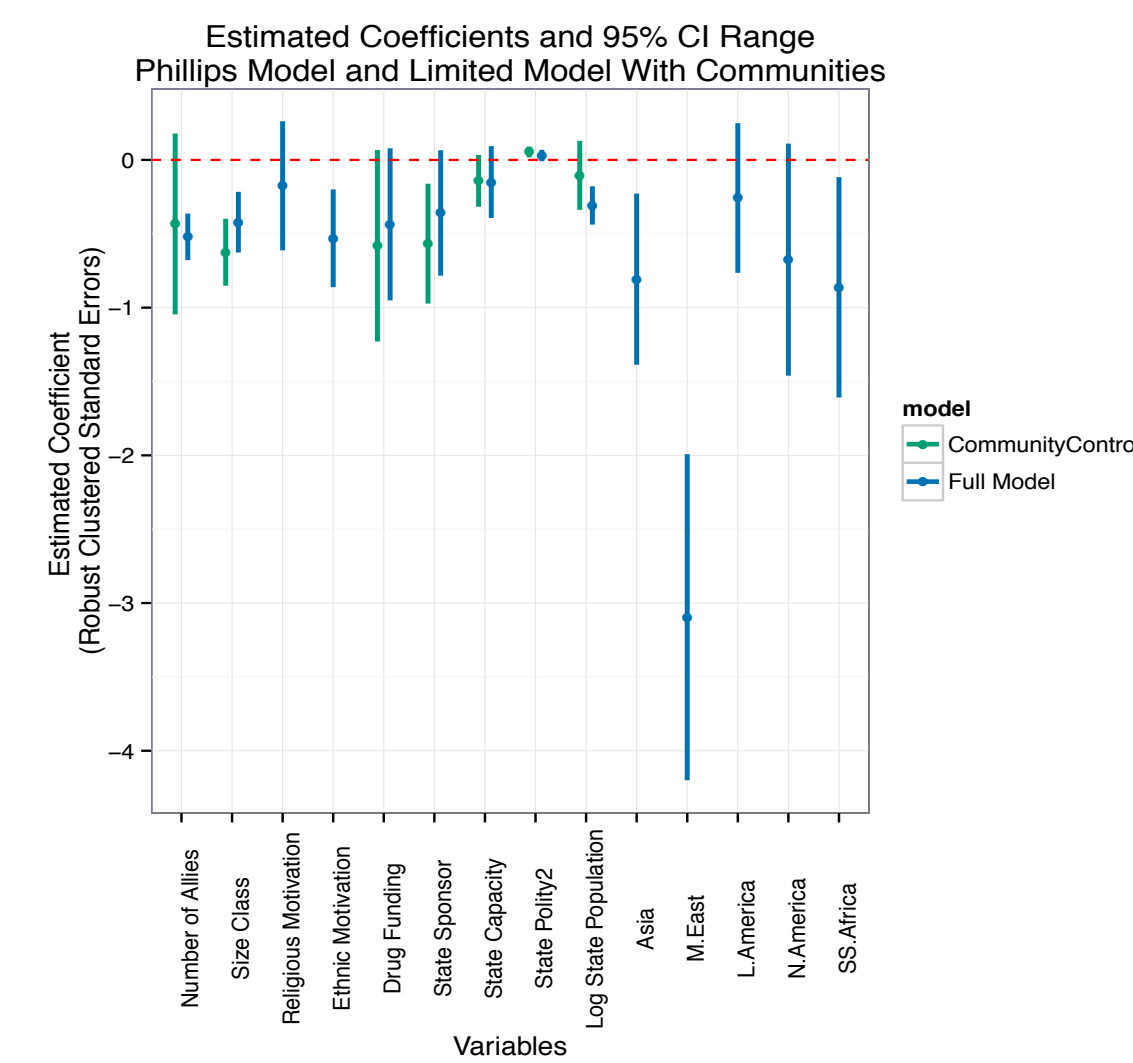

Extension: Extracting and Leveraging Network Information

The graphs below replicate and extend the network graph that Phillips used to generate his *allies* and allies connections variables. The graphs have been extended to highlight densely connected sub-graphs and to include ties based on alliances, rivalries, and both type of connections. Graph communities were identified via a 5-step random walk procedure. Future work can address robustness to alternative walk specifications.

Late 1980s Terror Group Connections — Edges colored by type of tie: black= alliance, red= rivalry; green = alliance and rivalry. Node outlines indicate community grouping

Late 1990s-2000s Terror Group Connections — Edges colored by type of tie: alliance (black), rivalry (red), alliance and rivalry (green). Node outlines indicate community grouping

Extension: Does Who You Know Matter?

The table on the left presents the results of estimating the modified allies model with four large sub-communities included as binary control variables. The right applies the modified model to just the large sub-communities to investigate whether the variable estimates apply similarly to outlier communities of data.

Estimated Coefficients and 95% CI Range Phillips Model and Limited Model With Communities

Parsimonious Allies Model Applied to Four Large Alliance Communities

Conclusions

- Controlling for large communities removes statistical significance of number of allies variable

- Estimated on large alliance networks, duration-influencing variables trend generally with restricted model but substantive impact varies.

Future Avenues

- Address missing Polity2 data for Afghanistan, Cambodia, Iraq, Lebanon, and Surname. This will add 226 important observations to the data.

- Expand model using a multi-level approach to allow for possible community-specific effects.

- Explore extension robustness and predictive power.