Making Friends And Influencing Duration

Replicating and Extending Brian Phillips' "Terrorist Group Cooperation and Longevity" (2014)

Margaret J. Foster - mjf34@duke.edu

Duke UNIVERSITY

Introduction

Phillips' Research Question

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

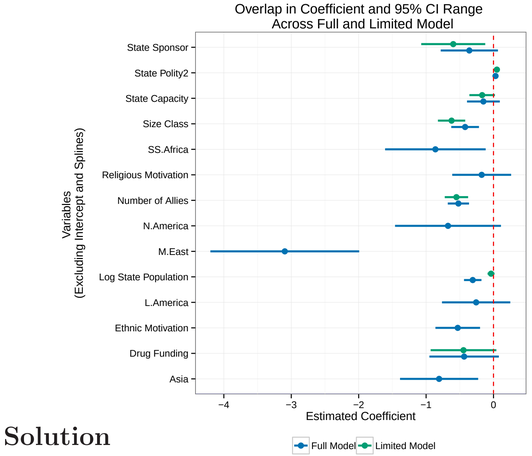
Motivation for Extension

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

Replicated and Alternative Models

Problem

The model that Phillips estimated can not be estimated using expanded network information. Many of the fourteen independent variables are collinear with homophilic attributes of the alliance networks.

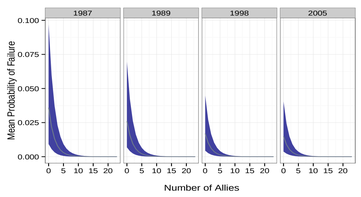


Solution

Estimating a parsimonious model with seven of the original independent variables. The new model is consistent across six of the seven IDVs, differing most on logged state population. Although the new model loses the impact of regional dummies and religious motivation, the new model allows for inclusion of community attributes.

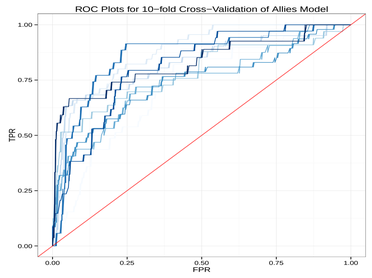
Marginal Effects of Allies in Base Model

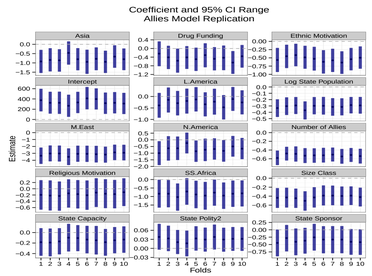
The four panels below show the changes in predicted probability of failure as number of allies increases, estimated at the beginning and end of each data collection wave. Notably, the effect diminishes with time.



Robustness of the Allies Model

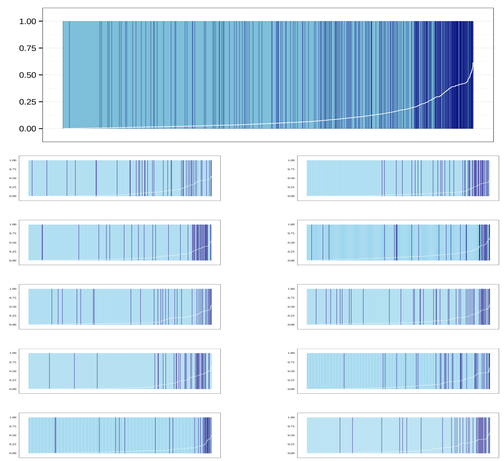
The coefficient plots indicate that the coefficient estimates of the Allies model are generally robust out-of-sample tests on randomly selected folds of the data. However, the ROC plots show that predictive performance is sensitive to which groups are included. AUC values for the out-of-sample data range from 0.72 to 0.873, with an average of .804.





Predictive Power of the Allies Model

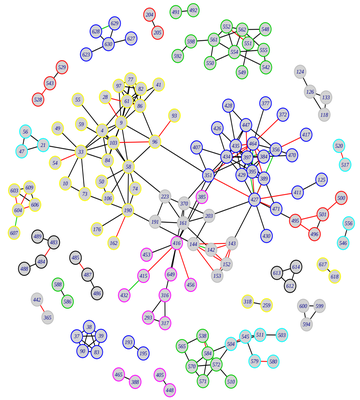
The Allies model suffers from consistently high false negative predictions both in the full model (large plot) and in the training sets of the cross-validation (small plots). This characteristic potentially reflects the strategic interplay between groups and security organizations or signals an underlying duration-enhancing attribute omitted from the Allies model.



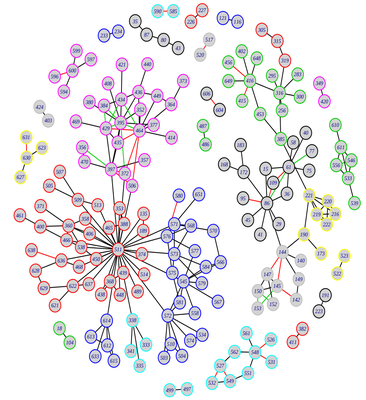
Extension: Extracting and Leveraging Network Information

The following two graphs replicate and extend the network graph that Phillips used to generate his *allies* and *allies connections* variables. I extended the network analysis to highlight densely connected sub-graphs and to include both alliances and rivalries. Network communities were identified via a 5-step random walk procedure.

Late 1980s Terror Group Alliance and Rivalry Network



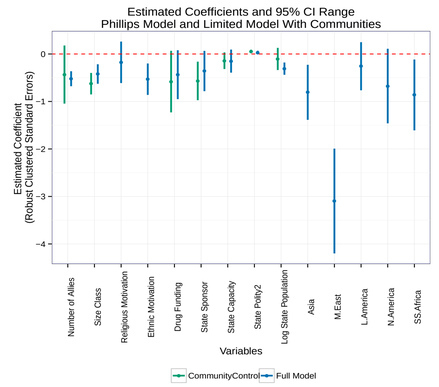
Late 1990s−2000s Terror Group Alliance and Rivalry Network

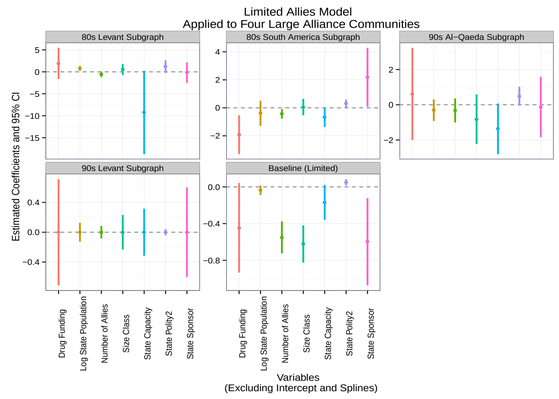


Black edges show alliances, red edges show rivalries, and green edges indicate that a dyad had experienced both alliances and rivalries. Communities are indicated by the outline color of contiguous nodes.

Extension: Quality or Quantity?

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 four of the largest sub-communities to investigate whether the estimates change. Within these communities, the estimated coefficient for number of allies ceases to be statistically significant.





Conclusions

- Controlling for large communities removes statistical significance of number of allies variable. This suggests that the overall number of allies is less important than the quality of those allies.
- Unexpectedly, controlling for large communities makes having a state sponsorship significantly associated with duration.

Future Avenues

- Address missing Polity2 data for Afghanistan, Cambodia, Iraq, Lebanon, and Surname.
- Expand model using a multi-level approach to allow for possible community-specific effects.
- Explore robustness and predictive power of community extension.