

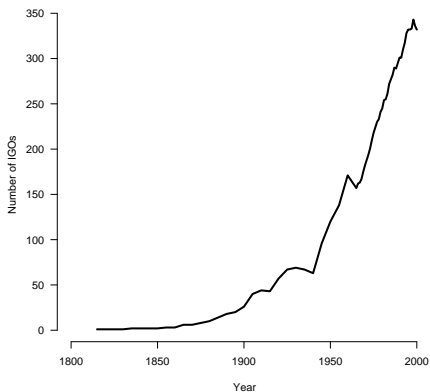
# Modeling States' Participation in Networks of Intergovernmental Organizations

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# Total Number of IGOs, 1800-2000



# Motivation

- ▶ Common membership in IGOs has been shown to matter in a wide variety of domains, for example:
  - ▶ International conflict (Oneal et al., 2003)
  - ▶ Promotion of democracy (Pevehouse, 2002)
  - ▶ Interest convergence (Bearce and Bondanella, 2007)
  - ▶ Diffusion of economic policies (Cao, 2009)
  - ▶ Diffusion of human rights practices (Greenhill, 2010)
- ▶ But very little work focuses on the IGO network as the DV

# Hypotheses about IGO joining

## 1. Functionalist hypothesis

- ▶ Richer, more democratic states are under greater pressure to join IGOs.
- ▶ Examples: European Union, G-20

## 2. Cultural hypothesis

- ▶ States preferentially associate with culturally similar others.
- ▶ Examples: Commonwealth, Organisation of the Islamic Conference

## Dependent Variable

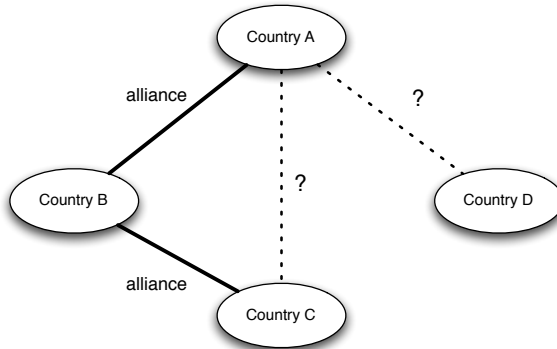
### “IGO Flows”

- ▶ Number of *new* IGO ties formed between state  $i$  and state  $j$  at time  $t$ .
- ▶ Data from the COW IGO dataset.
- ▶  $n \times n$  matrix (for each year)
- ▶ Example:
  - ▶ In 1991 Mongolia joined two new IGOs – the IMF and the Asian Development Bank.
  - ▶ China already belonged to both organizations, whereas Taiwan only belonged to the AsDB.
  - ▶ So the entries in the *IGO Flows* matrix for 1991 will be:
    - ▶ MON, CHN: 2
    - ▶ MON, TAW: 1

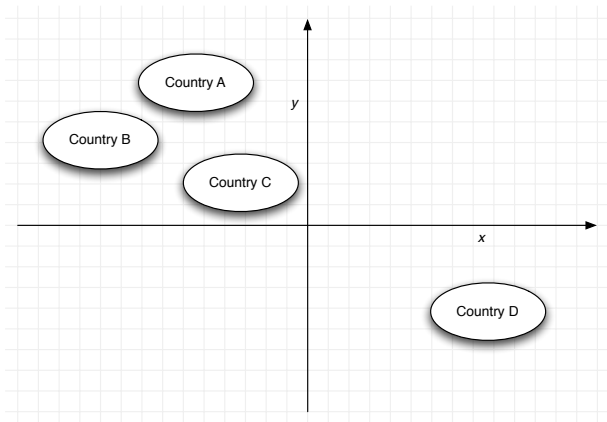
# The Model

- ▶ Latent Space Model (Hoff, Raftery and Handcock 2002; Hoff 2005)
- ▶ Key idea: Dyads are not treated as independent observations
- ▶ Separate model for each year

# Transitivity in Social Networks



# Transitivity in Social Networks





## The Model

$$\theta_{i,j} = \beta'_s x_i + \beta'_r x_j + \beta'_d x_{ij} + a_i + b_j + u'_i v_j + \epsilon_{ij}$$

$\theta_{i,j}$  is the linear predictor corresponding to the number of new IGO ties formed between state  $i$  and state  $j$ ;

$\beta'_s x_i$  sender-specific covariates;

$\beta'_r x_j$  receiver-specific covariates;

$\beta'_d x_{ij}$  dyadic covariates;

$a_i$  represents a random effect specific to state  $i$ ;

$b_j$  represents a random effect specific to state  $j$ ;

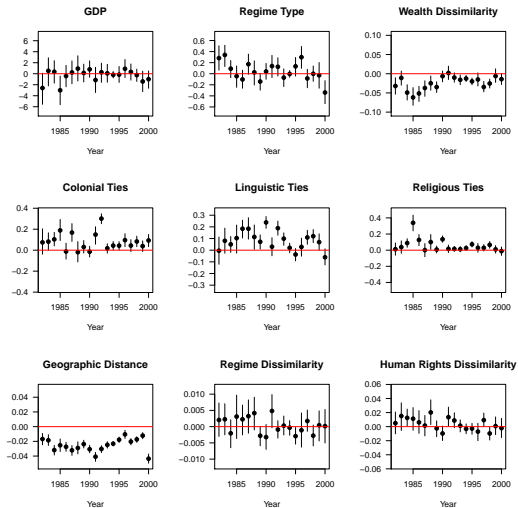
$u'_i v_j$  is the inner product of the coordinates of states  $i$  and  $j$  in the latent space; and

$\epsilon_{ij}$  is the error term.

# Covariates

- ▶ Functionalist hypothesis
  - ▶ GDP (of joiner)
  - ▶ Polity 2 score (of joiner)
  - ▶ Wealth Dissimilarity
- ▶ Cultural hypothesis
  - ▶ Colonial Ties
  - ▶ Linguistic Ties
  - ▶ Religious Ties
- ▶ Control variables
  - ▶ Geographic Distance
  - ▶ Regime Dissimilarity
  - ▶ Human Rights Dissimilarity

# Results



## What have we learned?

- ▶ Richer, more democratic states are no more likely to join IGOs
- ▶ Cultural similarity plays a surprisingly important role in states' decisions to join IGOs
  - ▶ Is trust more important than potential gains from cooperation?
- ▶ No evidence of homophily on the basis of regime type or human rights practices

# Correlation Matrix

Dyadic Covariates for 2000:

	col	lang	rel	geo	gdp	dem	HR	IGO
col	1.00	0.43	0.00	-0.02	-0.02	-0.02	-0.03	0.09
lang	0.43	1.00	0.17	-0.08	0.02	-0.07	-0.04	0.06
rel	0.00	0.17	1.00	-0.04	0.18	-0.05	0.07	0.13
geo	-0.02	-0.08	-0.04	1.00	0.05	-0.06	-0.06	-0.04
gdp	-0.02	0.02	0.18	0.05	1.00	0.13	0.06	-0.00
dem	-0.02	-0.07	-0.05	-0.06	0.13	1.00	0.44	0.00
HR	-0.03	-0.04	0.07	-0.06	0.06	0.44	1.00	0.01
IGO	0.09	0.06	0.13	-0.04	-0.00	0.00	0.01	1.00

## New Joiners Matrix

	UN	WHO	IMF	NATO	AsDB
AFG	0	0	0	0	0
BLR	1	1	0	0	0
CHN	0	0	0	0	0
FRN	0	0	0	0	0
MON	0	0	1	0	1
RUS	0	0	0	0	0
TAW	0	0	0	0	0
USA	0	0	0	0	0

# Membership Matrix

	UN	WHO	IMF	NATO	AsDB
AFG	1	1	1	0	1
BLR	1	1	0	0	0
CHN	1	1	1	0	1
FRN	1	1	1	1	1
MON	1	1	1	0	1
RUS	1	1	0	0	0
TAW	0	0	0	0	1
USA	1	1	1	1	1

## IGO Flows Matrix

	AFG	BLR	CHN	FRN	MON	RUS	TAW	USA
AFG	0	0	0	0	0	0	0	0
BLR	2	0	2	2	2	2	0	2
CHN	0	0	0	0	0	0	0	0
FRN	0	0	0	0	0	0	0	0
MON	2	0	2	2	0	0	1	2
RUS	0	0	0	0	0	0	0	0
TAW	0	0	0	0	0	0	0	0
USA	0	0	0	0	0	0	0	0



# Positions in Latent Space, 2000

