LET'S SAY AMEN FOR LATENT SPACE MODELS

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Response to Cranmer et al. (2016).

Date: August 20, 2016.

1. Replication Results

	Logit	MRQAP	LSM	ERGM	LSM (Bilinear)
Intercept/Edges	-4.44*	-4.24*	0.94*	-12.17*	-3.40*
	(0.34)		[0.11; 1.83]	(1.40)	[-4.42; -2.50]
Conflicting policy preferences					
Business vs. NGO	-0.86	-0.87*	-1.37*	-1.11*	-1.38*
	(0.46)		[-2.42; -0.41]	(0.51)	[-2.46; -0.49]
Opposition/alliance	1.21*	1.14*	0.00	1.22*	1.08*
	(0.20)		[-0.39; 0.39]	(0.20)	[0.72; 1.49]
Preference dissimilarity	-0.07	-0.60	-1.76*	-0.44	-0.79*
	(0.37)		[-2.60; -0.90]	(0.39)	[-1.55; -0.07]
Transaction costs					
Joint forum participation	0.88*	0.75*	1.52*	0.90*	0.92*
	(0.27)		[0.87; 2.19]	(0.28)	[0.41; 1.47]
Influence					
Influence attribution	1.20*	1.29*	0.08	1.00*	1.10*
	(0.22)		[-0.41; 0.55]	(0.21)	[0.69; 1.54]
Alter's influence indegree	0.10*	0.11*	0.01	0.21*	0.11*
	(0.02)		[-0.03; 0.04]	(0.04)	[0.07; 0.15]
Influence absolute diff.	-0.03*	-0.06*	0.04	-0.05*	-0.07*
	(0.02)		[-0.01; 0.09]	(0.01)	[-0.11; -0.03]
Alter = Government actor	0.63*	0.68	-0.47	1.04*	0.55
	(0.25)		[-1.08; 0.13]	(0.34)	[-0.07; 1.15]
Functional requirements					
Ego = Environmental NGO	0.88*	0.99	-0.59	0.79*	0.68
	(0.26)		[-1.31; 0.11]	(0.17)	[-0.36; 1.74]
Same actor type	0.74*	1.12*	1.17*	0.99*	1.04*
	(0.22)		[0.63; 1.71]	(0.23)	[0.62; 1.50]
Endogenous dependencies					
Mutuality	1.22*	1.00*		0.81*	
	(0.21)			(0.25)	
Outdegree popularity				0.95*	
				(0.09)	
Twopaths				-0.04*	
				(0.02)	
GWIdegree (2.0)				3.42*	
				(1.47)	
GWESP (1.0)				0.58*	
				(0.16)	
GWOdegree (0.5)				8.42*	
				(2.11)	

Table 1. * $p < 0.05$ (or 0 outside the 95% confidence interval).

2. Capturing Network Stuff

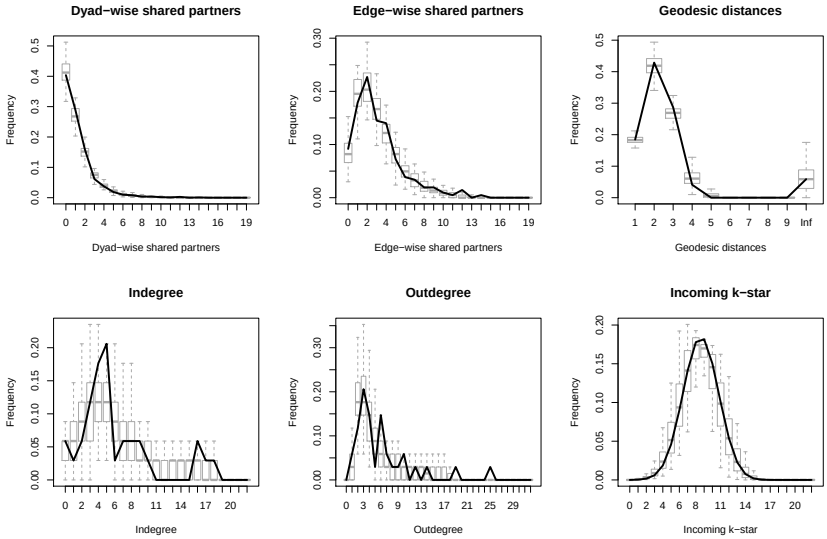

Figure 1. ERGM network stuff

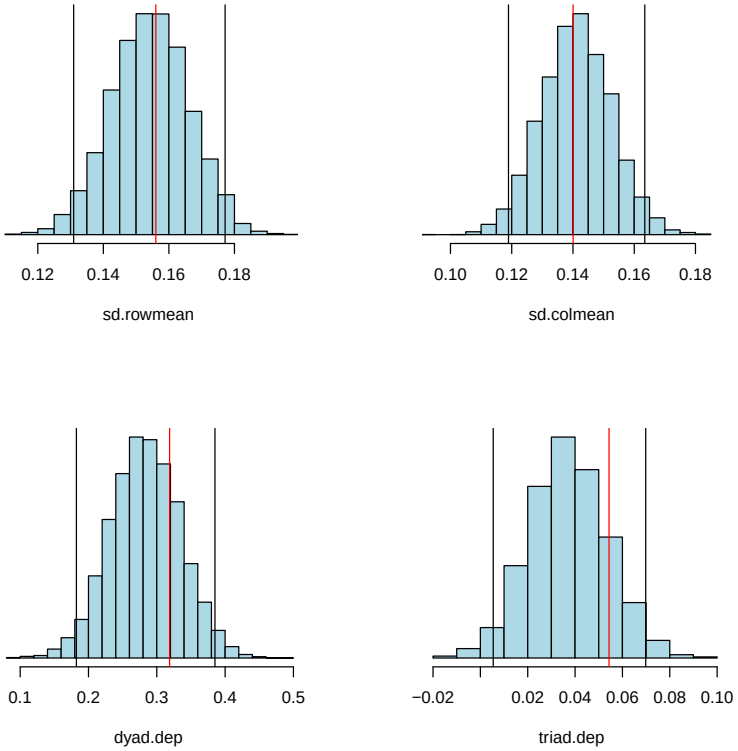

Figure 2. AMEN network stuff

3. Tie Formation Prediction

	AUC	AUC (PR)
AME	0.99	0.94
LSM	0.92	0.68
ERGM	0.91	0.70
MRQAP	0.88	0.67
Logit	0.88	0.67

Table 2. Area under the curve (AUC) comparison.

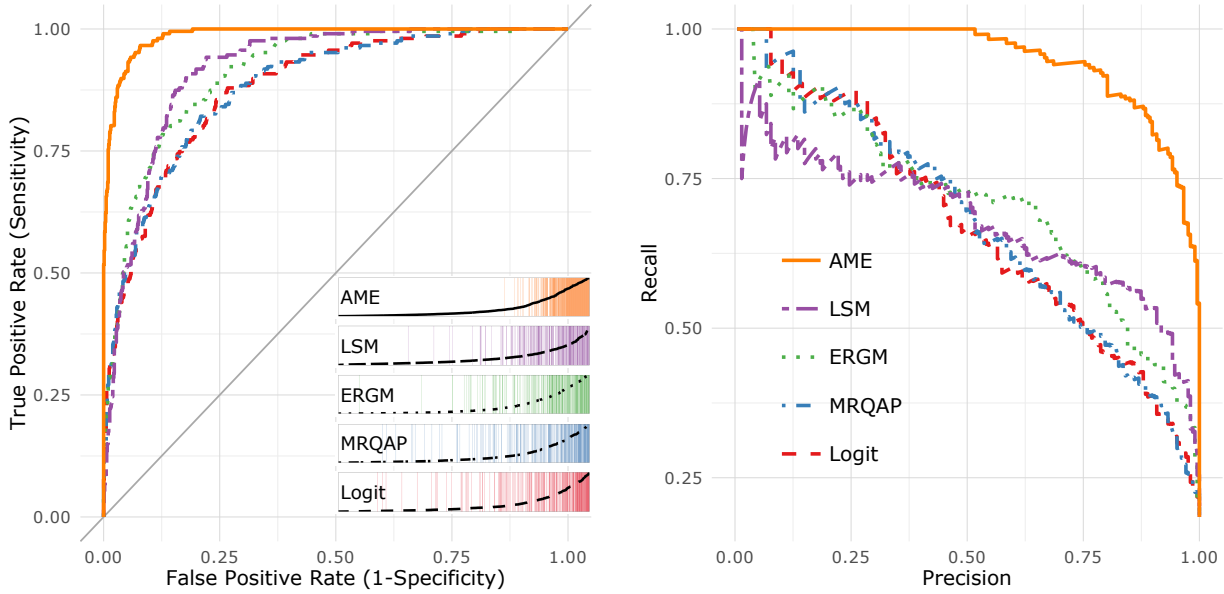

Figure 3. ROC and separation plots

4. Latent Space Model Comparison

	LSM	LSM (Bilinear)	LSM (SR)	LSM (Bilinear + SR)	GBME	AME
Intercept/Edges	0.94*	-2.66*	0.60	-2.50*	-11.69*	-3.40*
	[0.09; 1.82]	[-3.53; -1.87]	[-1.10; 2.37]	[-4.14; -0.88]	[-10.57; -24.20]	[-4.42; -2.50]
Conflicting policy preferences						
Business vs. NGO	-1.37*	-2.64*	-3.07*	-2.87*	-4.92*	-1.38*
	[-2.42; -0.41]	[-4.61; -0.96]	[-4.77; -1.56]	[-4.63; -1.29]	[-4.46; -10.99]	[-2.46; -0.49]
Opposition/alliance	0.00	0.04	0.31	0.24	3.44*	1.08*
	[-0.40; 0.39]	[-0.44; 0.54]	[-0.24; 0.86]	[-0.36; 0.82]	[3.12; 1.80]	[0.72; 1.49]
Preference dissimilarity	-1.76*	-2.00*	-1.88*	-2.20*	-2.37*	-0.79*
	[-2.62; -0.90]	[-3.01; -1.03]	[-3.07; -0.68]	[-3.46; -0.96]	[-2.14; -6.00]	[-1.55; -0.07]
Transaction costs						
Joint forum participation	1.51*	1.24*	1.56*	1.62*	3.11*	0.92*
	[0.86; 2.17]	[0.53; 1.93]	[0.69; 2.41]	[0.70; 2.52]	[2.82; 1.18]	[0.41; 1.47]
Influence						
Influence attribution	0.08	-0.08	0.30	0.28	3.73*	1.10*
	[-0.40; 0.55]	[-0.62; 0.46]	[-0.37; 0.96]	[-0.42; 0.97]	[3.38; 1.89]	[0.69; 1.54]
Alter's influence indegree	0.01	-0.05*	0.06	0.05	0.37*	0.11*
	[-0.03; 0.04]	[-0.09; -0.01]	[-0.03; 0.14]	[-0.04; 0.13]	[0.34; 0.19]	[0.07; 0.15]
Influence absolute diff.	0.04	0.02	-0.08*	-0.08*	-0.23*	-0.07*
	[-0.01; 0.09]	[-0.03; 0.07]	[-0.14; -0.02]	[-0.14; -0.02]	[-0.22; -0.47]	[-0.11; -0.03]
Alter = Government actor	-0.46	-0.80	-0.11	-0.20	1.92	0.55
	[-1.08; 0.14]	[-1.67; 0.04]	[-1.91; 1.76]	[-2.14; 1.74]	[1.75; -0.12]	[-0.07; 1.15]
Functional requirements						
Ego = Environmental NGO	-0.60	-1.90*	-1.69	-1.84	2.26	0.68
	[-1.32; 0.09]	[-3.10; -0.86]	[-3.74; 0.23]	[-4.02; 0.11]	[2.08; -1.03]	[-0.36; 1.74]
Same actor type	1.17*	1.40*	1.82*	1.90*	3.61*	1.04*
	[0.63; 1.71]	[0.85; 1.95]	[1.10; 2.54]	[1.19; 2.62]	[3.25; 1.73]	[0.62; 1.50]

Table 3. * $p < 0.05$ (or 0 outside the 95% confidence interval).

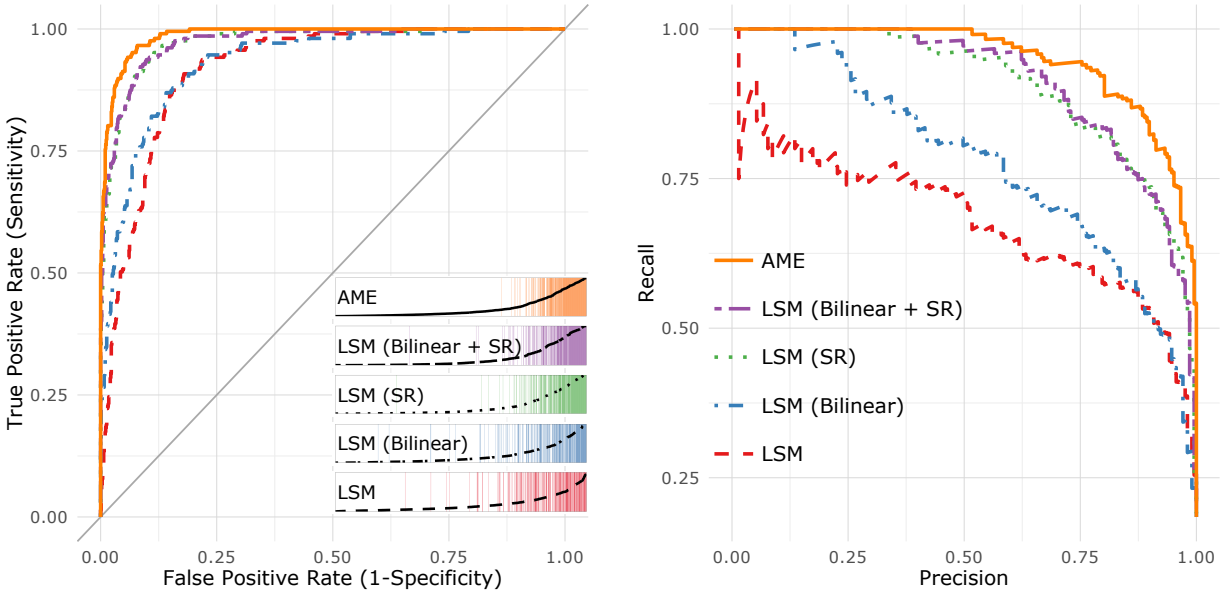

Figure 4. ROC and separation plots

5. Conclusion

6. Appendix

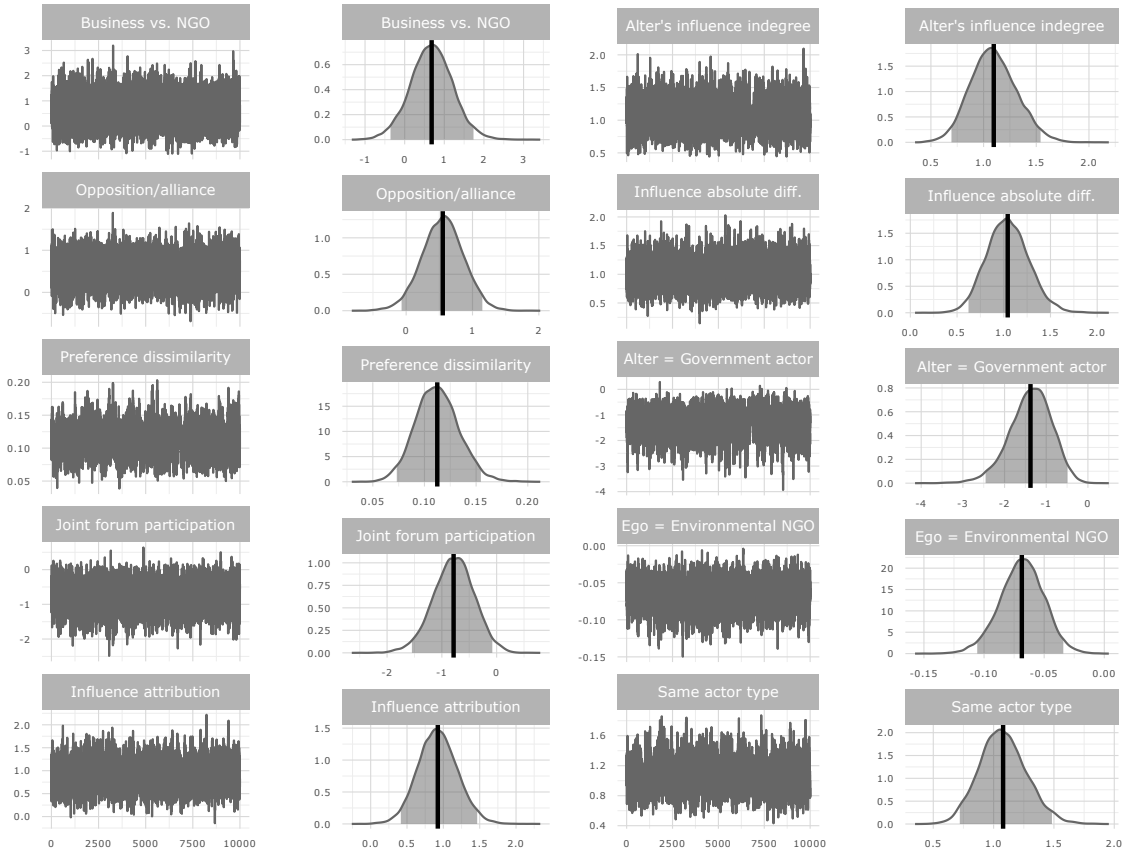

Figure 5. ame convergence

REFERENCES

Cranmer, Skyler; Philip Leifeld; Scott McClurg & Meredith Rolfe (2016) Navigating the range of statistical tools for inferential network analysis. *American Journal of Political Science*.

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