

Dynamics of Friendship Networks and Political Views

Cheng Wang¹, David S. Hachen², Omar Lizardo²

1 Department of Population Health and Disease Prevention, University of California, Irvine
2 Department of Sociology, University of Notre Dame

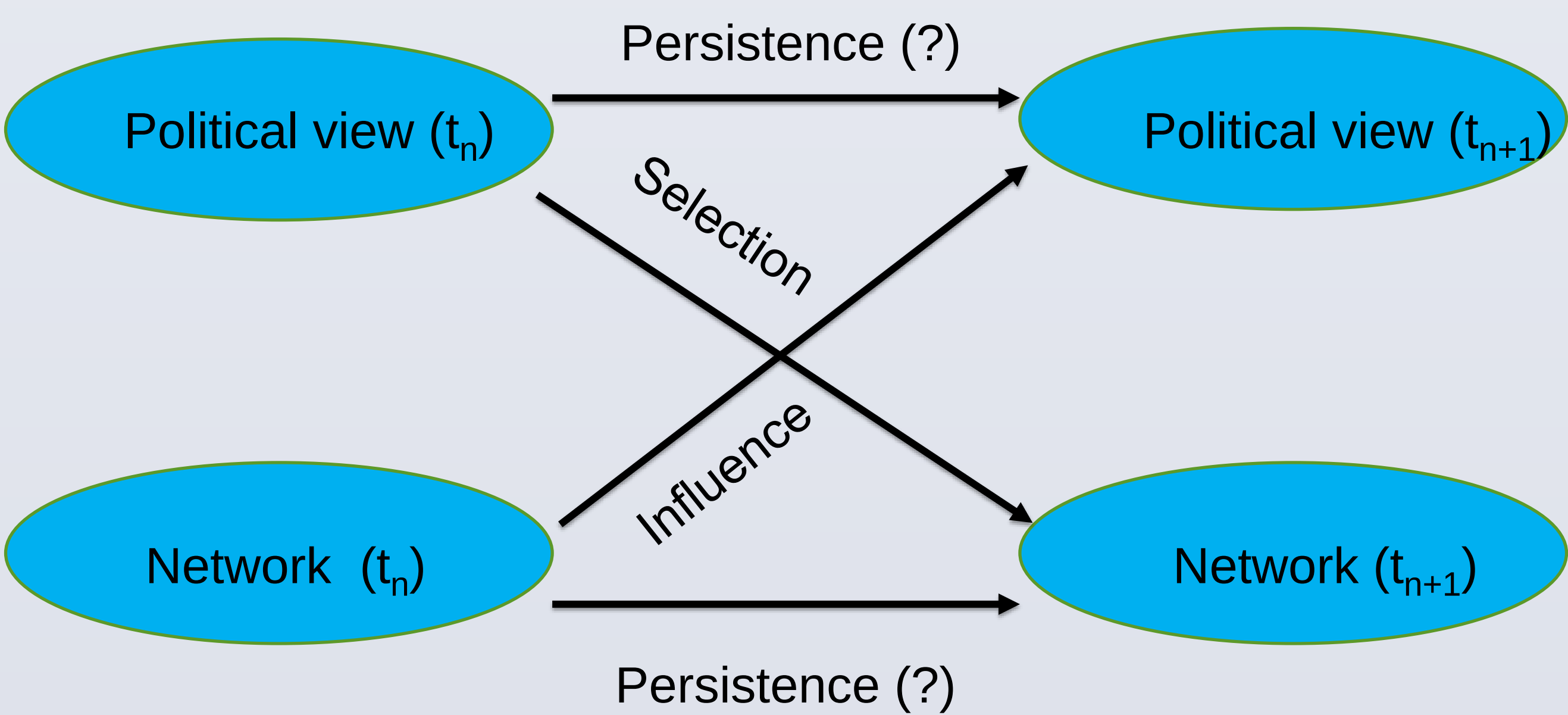
Abstract

The stochastic actor-based (SAB) modeling has been widely used to explore the co-evolution of friendship networks and behavior dynamics simultaneously in recent years. However, none of the studies has touched the area of respondents' political altitudes or activities. This study analyzes data from the Netsense project, a longitudinal survey and smartphone data collection of 196 college students over 4 semesters since 2011. And we find that selection effects play an important and consistent role in creating peer clusters with similar political tastes in a dynamic context, but friends were not found to influence political tastes, net of other socio-demographic, network, or family factors.

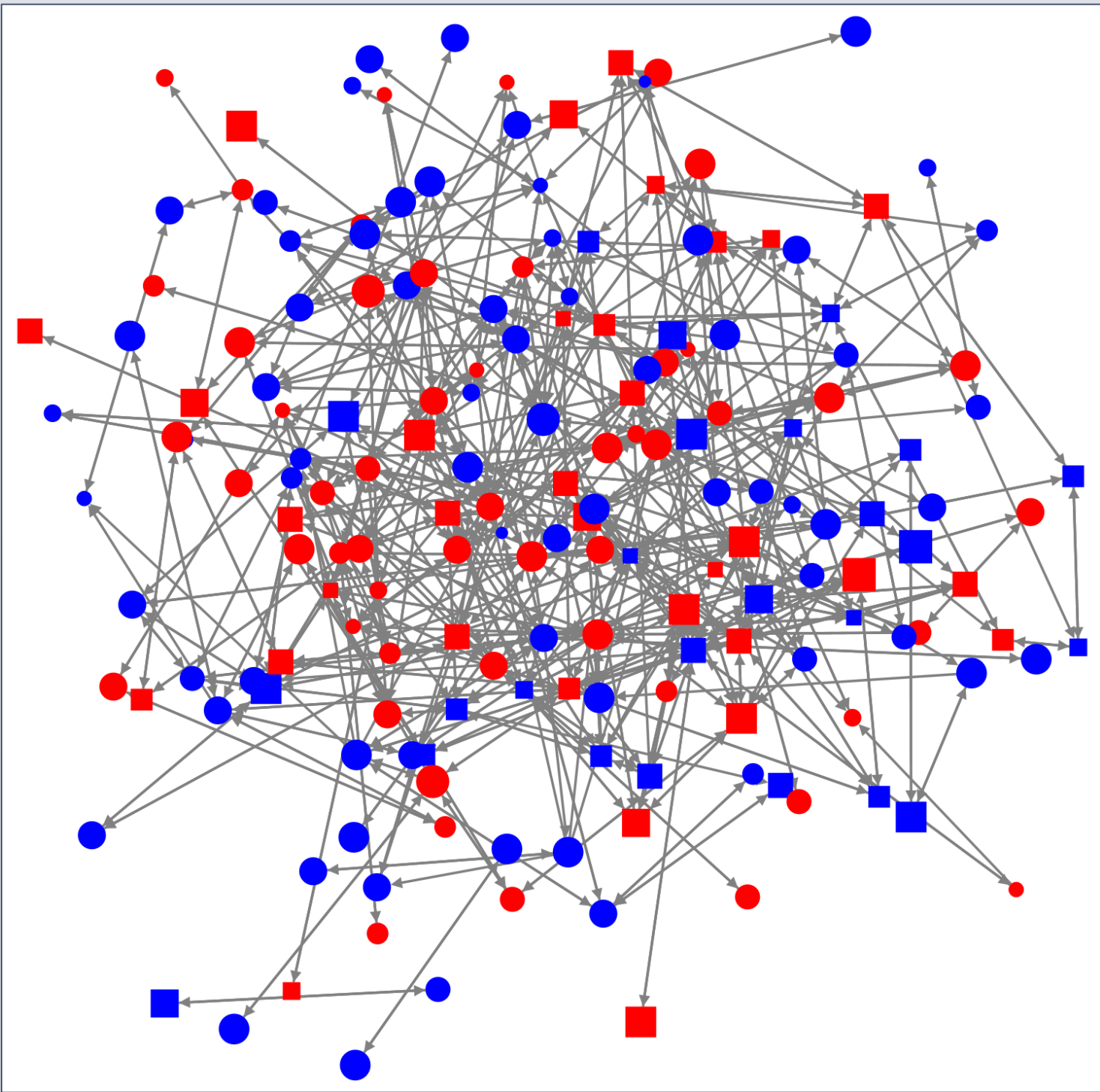
Netsense project

- 196 first-year undergraduate students are provided with free Android-powered smartphones and phone plans for two years (unlimited voice calls to and from other mobile phones, 200 voice-call minutes per month to and from other landlines, unlimited texting, and unlimited data, from August 2011 to May 2013)
- These mobile phones are specially programmed to capture the background information on communication events (i.e., text, voice call, email, Facebook posts) and the proximity between the devices. The information on the contents of telephone calls, emails, text messages, Facebook posts or other forms of communication are not collected.
- The students are required to take an on-line survey each semester to answer questions about their status, attitudes, preferences and activities. The data are securely transferred to secure computer servers.
- Students who are under 18 are required to have their parent or guardian read, complete and sign the Parental Consent Form. All students (either under 18 or above 18) need to read, complete and sign the Student Consent Form.

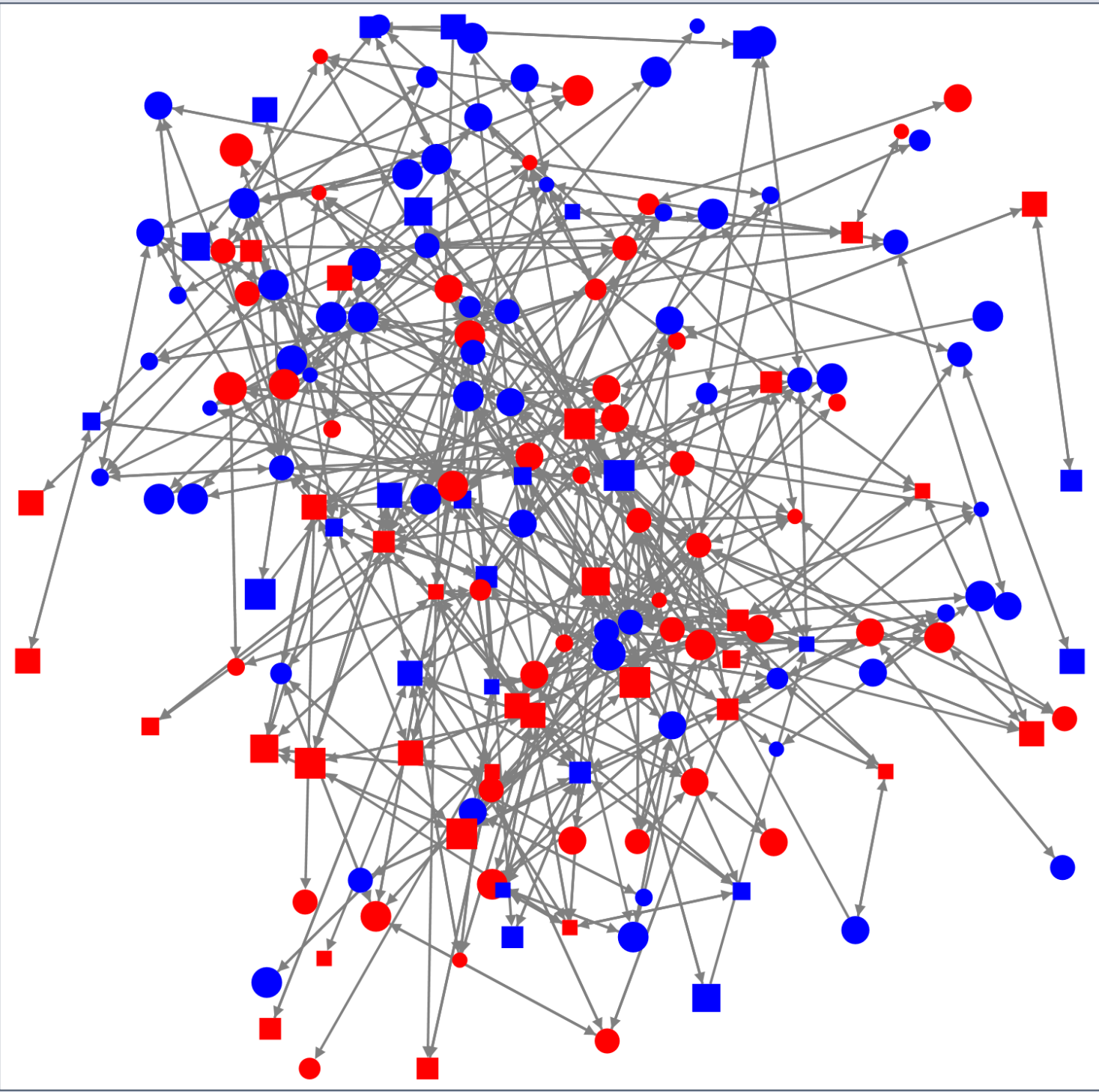
Modeling



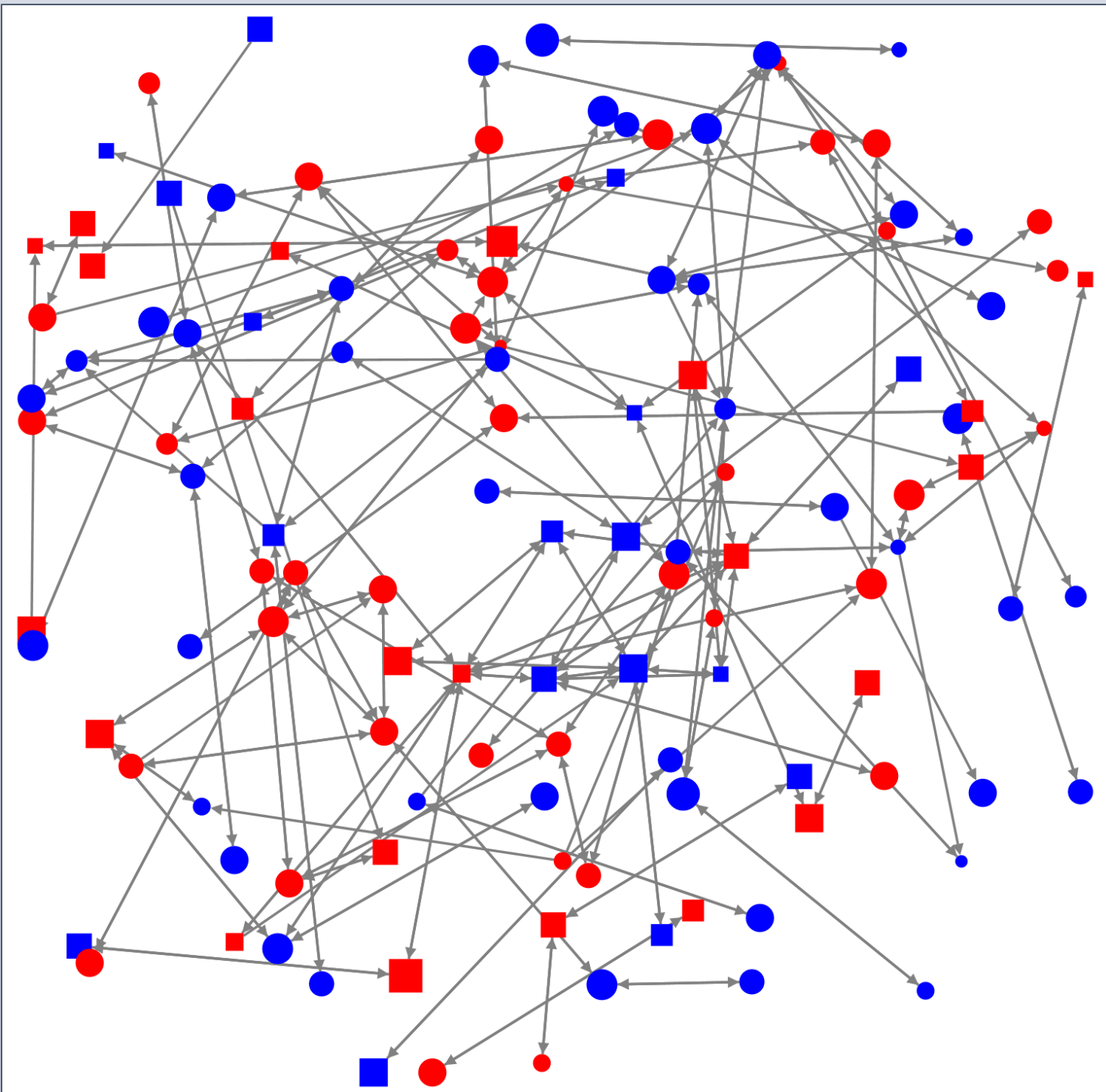
Mobile phone networks



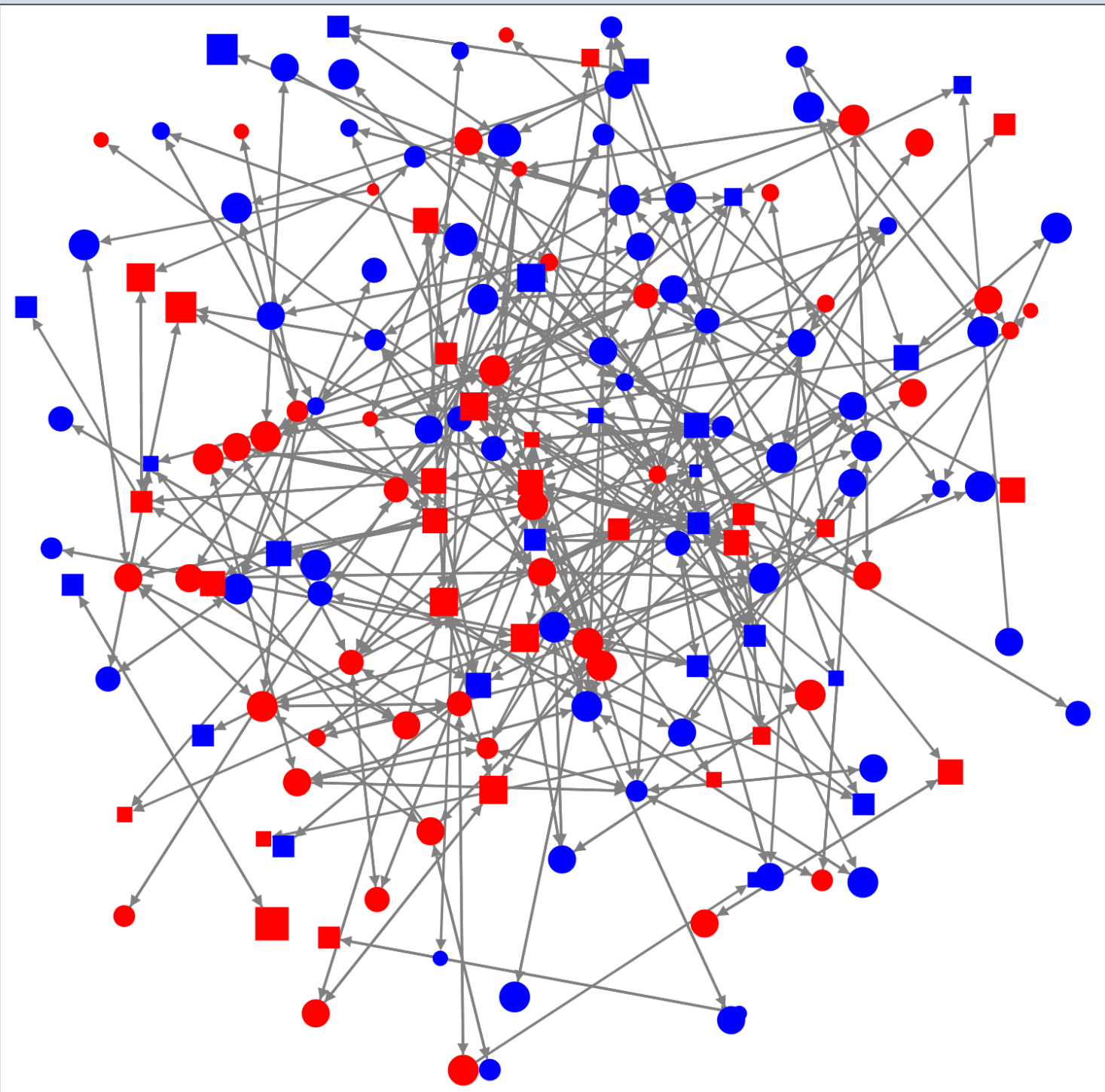
Fall 2011



Spring 2012



Summer 2012



Fall 2012

Results

Network model	Parameter	Standard error
Rate		
Rate (t ₁ -t ₂)	14.79***	1.43
Rate (t ₂ -t ₃)	9.94***	0.86
Rate (t ₃ -t ₄)	11.92***	1.99
Endogenous network processes		
Outdegree	-5.99***	0.41
Reciprocity	7.40***	0.29
Transitive triplets	0.30	1.02
3 cycles	0.05	2.04
Transitive ties	0.54***	0.12
Number of distance at 2	0.15	0.09
In-degree popularity (square root)	-0.34	0.33
Individual attributes		
Age alter	-0.08	0.14
Age ego	0.01	0.15
Age similarity	0.10	0.13
Gender alter (female=1)	-0.14	0.14
Gender ego (female=1)	0.13	0.13
Gender similarity	0.27***	0.07
Race alter (white=1)	0.19	0.17
Race ego (white=1)	-0.11	0.17
Race similarity	0.21**	0.08
Similarity in music	0.04	0.20
Similarity in movies	-0.05	0.18
Similarity in books	0.39*	0.16
Similarity in following sports	-0.01	0.12
Similarity in playing games	-0.01	0.14
Similarity in outdoor activities	0.19	0.17
Similarity in religion preference	0.28	0.24
Political view alter	0.00	0.06
Political view ego	0.01	0.06
Political view similarity	0.50*	0.25
Behavior model		
Rate		
Rate (t ₁ -t ₂)	0.95***	0.17
Rate (t ₂ -t ₃)	0.62***	0.11
Rate (t ₃ -t ₄)	0.78***	0.12
Linear shape	-0.13	0.08
Quadratic shape	-0.14***	0.04
Individual attributes		
Age	0.05	0.17
Gender (female=1)	-0.07	0.16
Race (white=1)	0.20	0.21
Parental education	-0.03	0.06
Frequency in discussing politics	0.08	0.07
Frequency in working on political campaign	-0.29*	0.14
Social influence effect		
Average alter effect	0.16	0.22

* Two-sided p<0.05, ** Two-sided p<0.01, *** Two-sided p<0.001

Network autocorrelation

