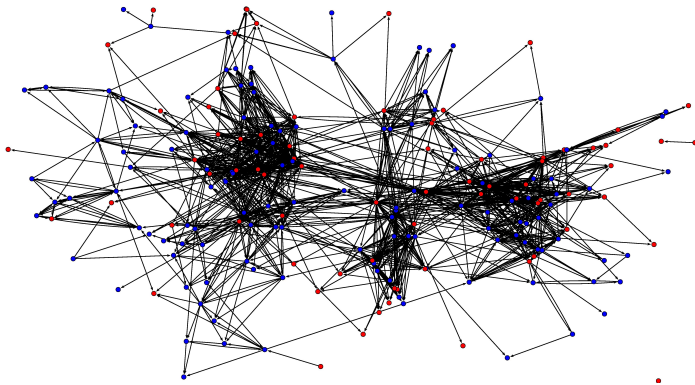


## Evolution of Acquaintance Networks



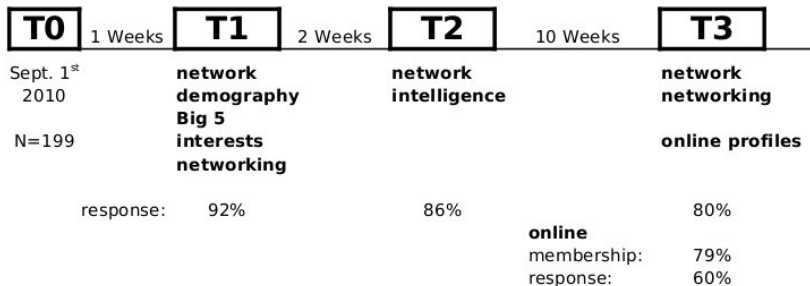
Goele Bossaert, Mathias Kuhnt, Nadine Meidert

Paterswolde, September 2011

# Empirical data

- Fachhochschule der Sächsischen Verwaltung Meißen
  - university of applied sciences for the formation of civil servants
  - 3 waves after 1, 4 and 10 weeks, at  $t_0$ : no links
  - 55% live in boarding school, no contacts to town
  - four specializations (70,65,18,44 students)
  - 10 courses (size  $\approx$  20 students)

# Survey





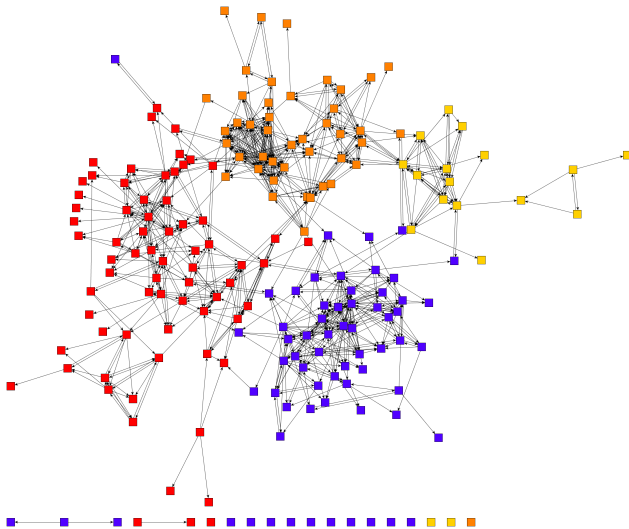
# Research question

- How large are the influences of the two complementary effects Homophily and Matthew Effect?

# Preliminary analysis

- 199 students, response rates: 90%, 81%, 69%
- age: mean 21.8, SD. 4.3
- 59% women
- Jaccard Index  $t_2 \rightarrow t_3$  0.42
- missings: 27%

# Specializations, $t_2$

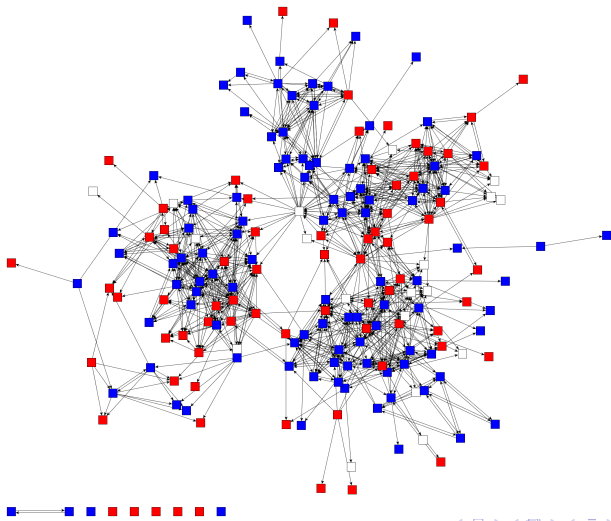


# Boarding school, $t_2$

→ visone



# Sex, $t_3$



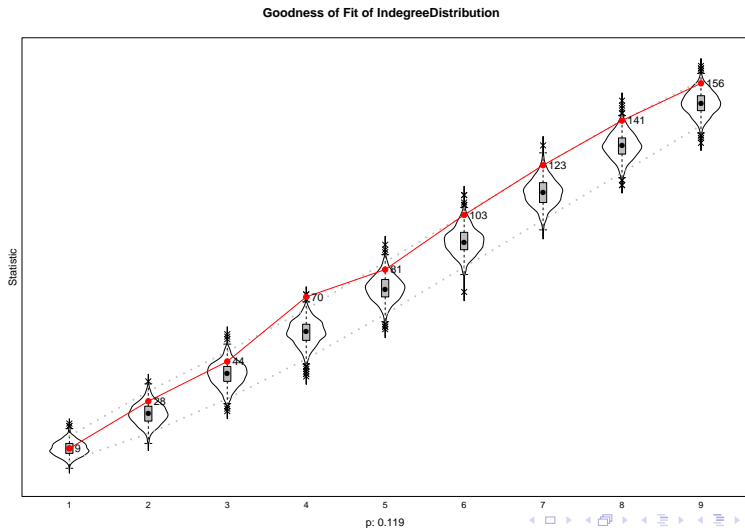
## RSiena results

	Model 1		Model 2	
	estimate	s.e.	estimate	s.e.
rate	<b>12.6</b>	(0.8)	<b>12.5</b>	(0.7)
outdegree	<b>3.2</b>	(0.2)	<b>-3.1</b>	(0.2)
reciprocity	<b>1.2</b>	(0.1)	<b>1.2</b>	(0.1)
trans. ties	<b>3.6</b>	(0.1)	<b>1.6</b>	(0.2)
inPopSqrt	<b>-0.3</b>	(0.1)	<b>-0.3</b>	(0.1)

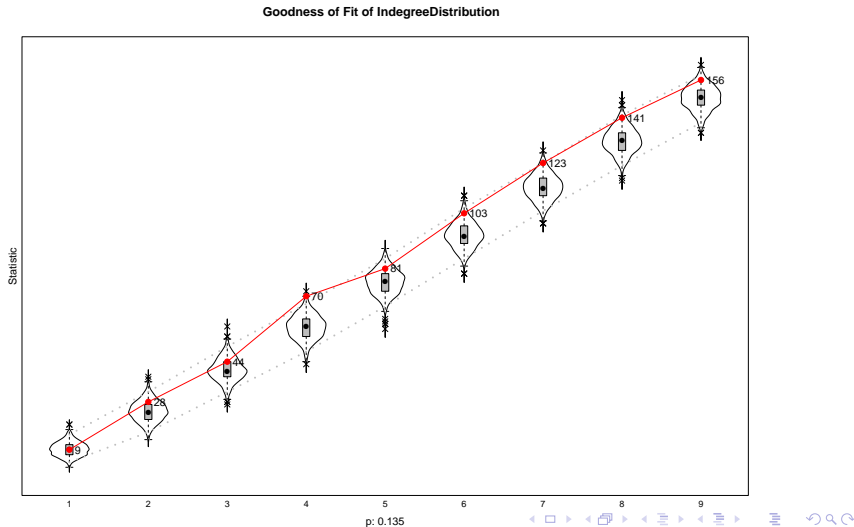
## RSiena results

	Model 1		Model 2	
	estimate	s.e.	estimate	s.e.
specialization same	<b>0.8</b>	(0.1)	<b>0.8</b>	(0.1)
course same	<b>0.5</b>	(0.1)	<b>0.5</b>	(0.1)
sex same	0.1	(0.1)	0.1	(0.1)
age sim	<b>0.5</b>	(0.2)	<b>0.5</b>	(0.2)
boarding sc. same	<b>0.4</b>	(0.1)	<b>0.4</b>	(0.1)
rel st. same	-0.1	(0.1)	<b>-0.2</b>	(0.1)
intelligence sim	0.4	(0.2)	0.4	(0.2)
B5 Extraversion sim			-0.2	(0.2)
B5 Agreeableness sim			0.3	(0.2)
B5 Conscientiousness sim			-0.4	(0.2)
B5 Neuroticism sim			0.2	(0.2)
B5 Openness sim			0.2	(0.2)

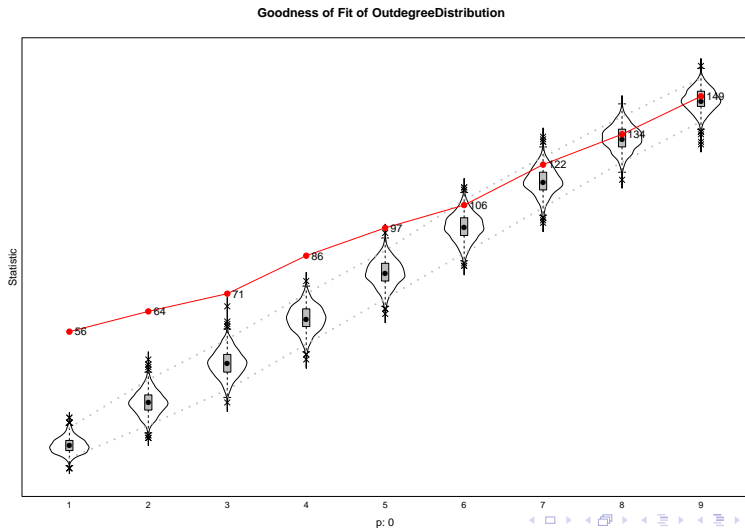
# GoF Indegree Model 1



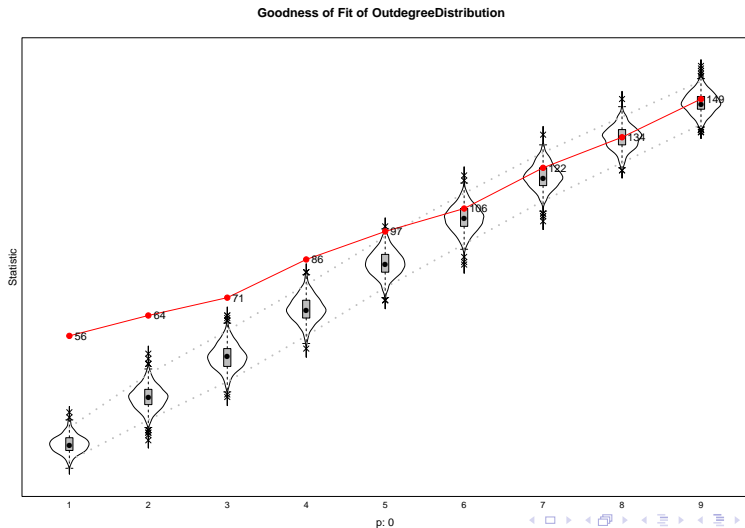
# GoF Indegree Model 2



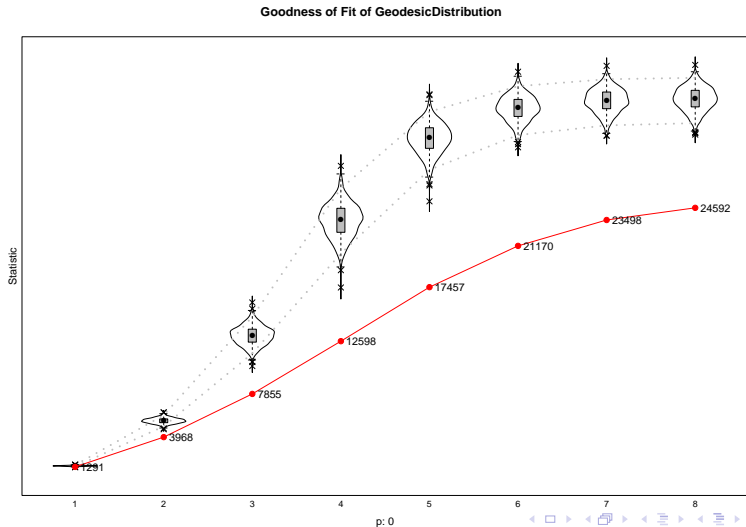
# GoF Outdegree Model 1



## GoF Outdegree Model 2



# GoF Geodesic distance Model 1





# GoF Geodesic distance Model 2

