

Sunbelt XXVI  
International Sunbelt Social Network Conference  
Vancouver, BC, Canada  
29 April, 2006

# Informal Political Networks in Germany's Parliament

Klaus Liepelt

[liepelt@mittnet.info](mailto:liepelt@mittnet.info)

Haiko Lietz

[lietz@mittnet.info](mailto:lietz@mittnet.info)



MITTWEIDA  
ROSSWEIN

**Hochschule Mittweida (FH)**  
**University of Applied Sciences**

Department of Media

**MittNet.Info**

## [What are we dealing with?]

Informal communication networks of German deputies

Relations by joint affiliations to non-parliamentary institutions

Different roles of deputies: representatives of parties, securers of majorities, power players

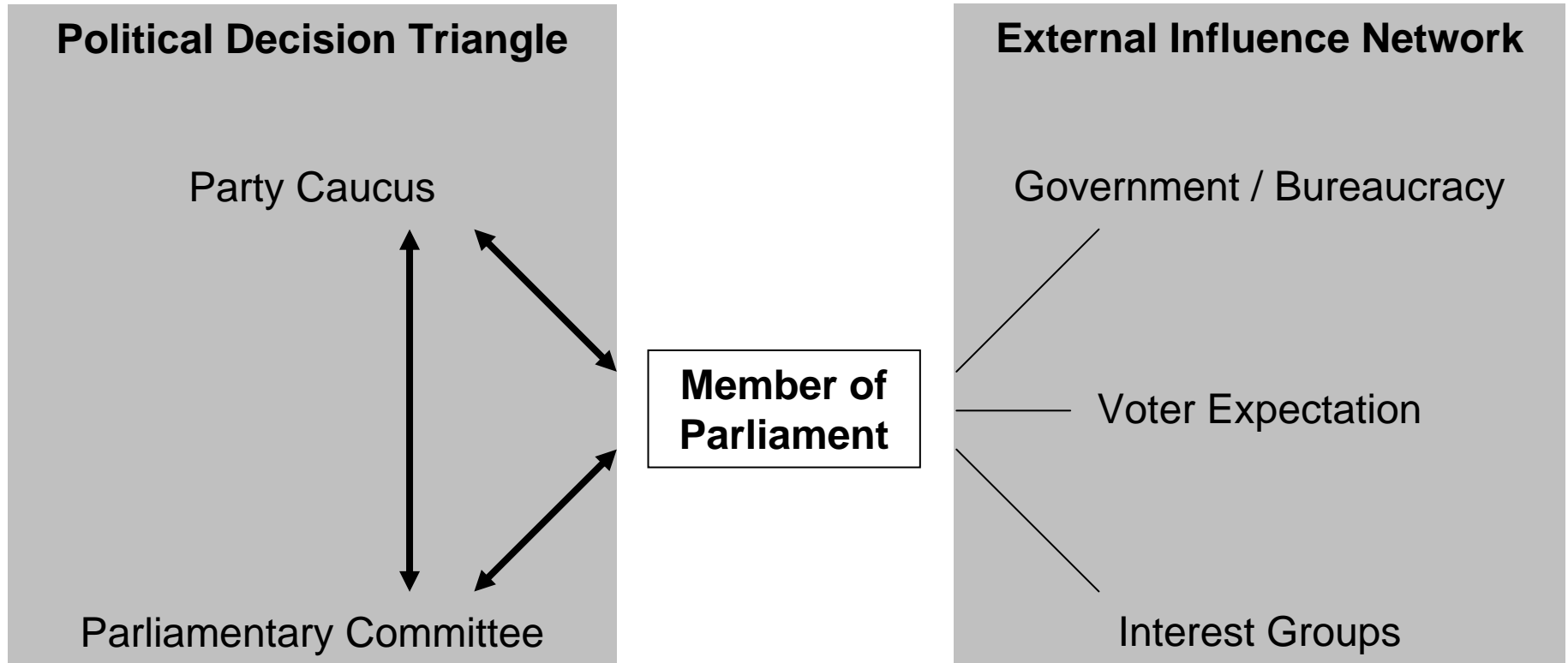
Structure of informal networks

## [Structure of Parliamentary Representation]

4 levels:

- City Council, County Council (Stadtrat, Kreistag)
- State Parliament (Landtag)
- Federal Parliament (Bundestag)
- European Parliament

## [Structure of Parliamentary Decision Making]



## [Focussing on 15th Bundestag (2002-2005)]

- Parliamentary Elite: 45 of 601 deputies (ministers, state secretaries, heads of parties and caucuses)
- Parliamentary Workforce: 545 of 601

These deputies are neither powerless and by no means equally powerless

The all play their own games regarding ascripted roles and achieved positions

Informal networks are each deputy's social capital

## [Data]

Our variables are most simple:

- Party / Caucus affiliation
- Committee affiliation
- Connections to non-parliamentary interest groups

Dataset is complete and publically available (retrieved from deputies' biographies)

Data is "stable" for 4 years

16th Bundestag: deputies have new roles in Grand Coalition

## **How do informal networks respond?**

(to be answered in the future)

[Data cont'd]

		15th Bundes tag	16th Bundes tag	Saxo- nia	Saxo- nia Anhalt	Thurin gia	Branden burg	Berlin	Mecklen burg- Pomeran ia	Total
	<b>Represe ntatives</b>	601	614	123	115	88	88	141	70	1389
<b>Relatio ns</b>	Com- mittees	1240	1245	608	360	220	252	258	200	4383
	Corporate bodies	549	-	88	140	124	71	66	67	1105
	Clubs / Founda- tions / Associa- tions	1800	-	208	217	115	10	521	107	2978
	Business	534	-	94	78	36	3	65	29	839
	Unions	133	-	10	4	0	1	40	8	196
	Total	4256		1008	799	495	337	950	411	9501

## [Method]

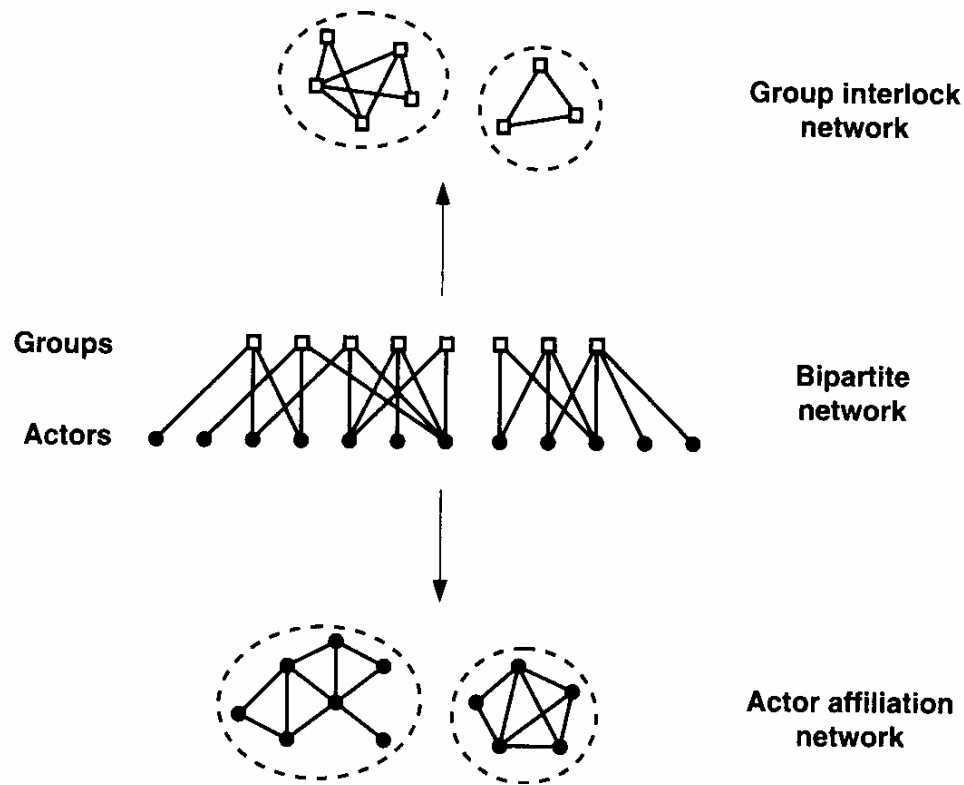


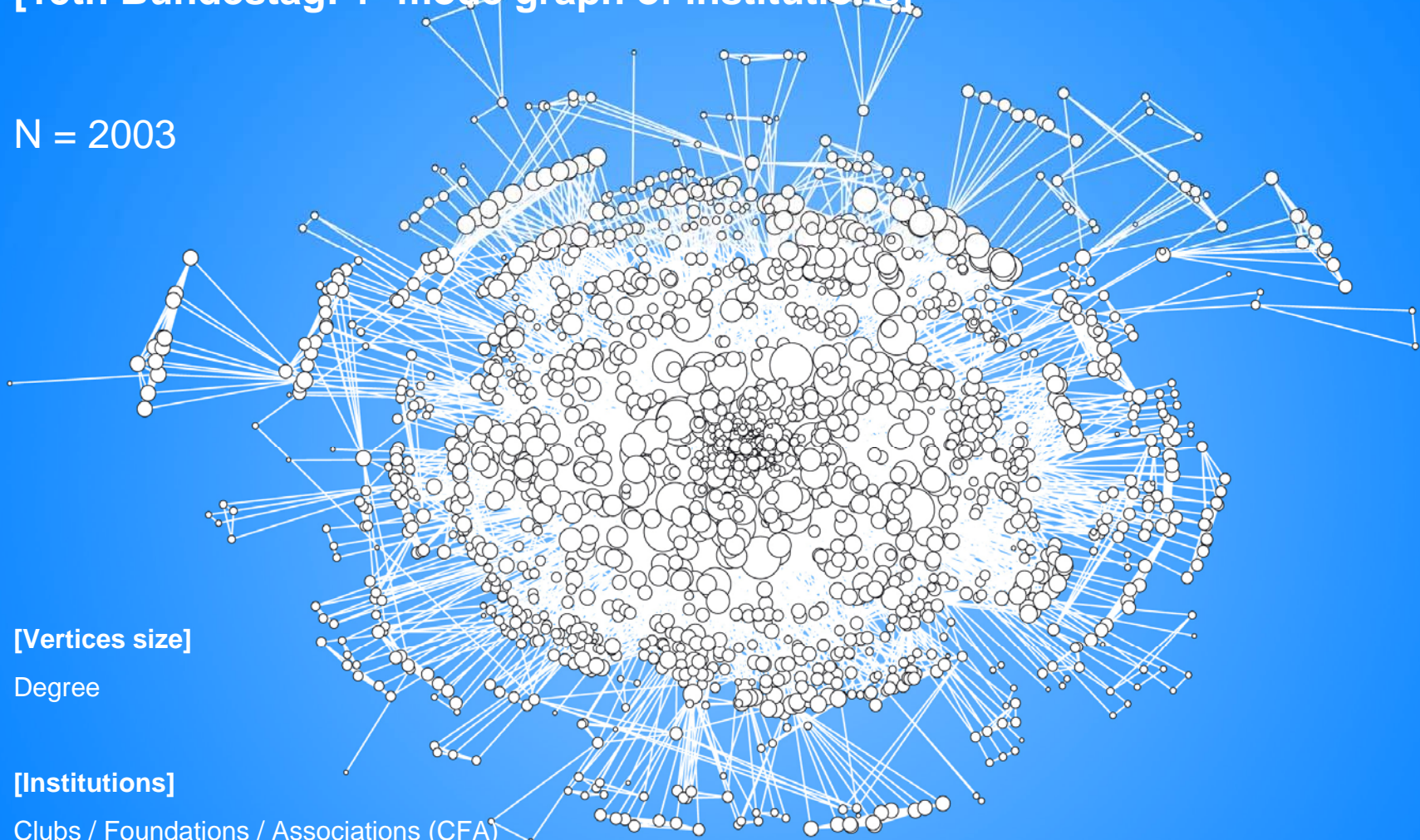
Figure 4.6. Affiliation networks are best represented as bipartite networks (center) in which actors and groups appear as distinct kinds of modes. Bipartite networks can always be projected onto one of two single-mode networks representing affiliations between the actors (bottom) or interlocks between groups (top).

Duality of Persons and Groups (Breiger); Source of image: Watts 2002



## [15th Bundestag: 1- mode graph of institutions]

N = 2003



[Vertices size]

Degree

[Institutions]

Clubs / Foundations / Associations (CFA)

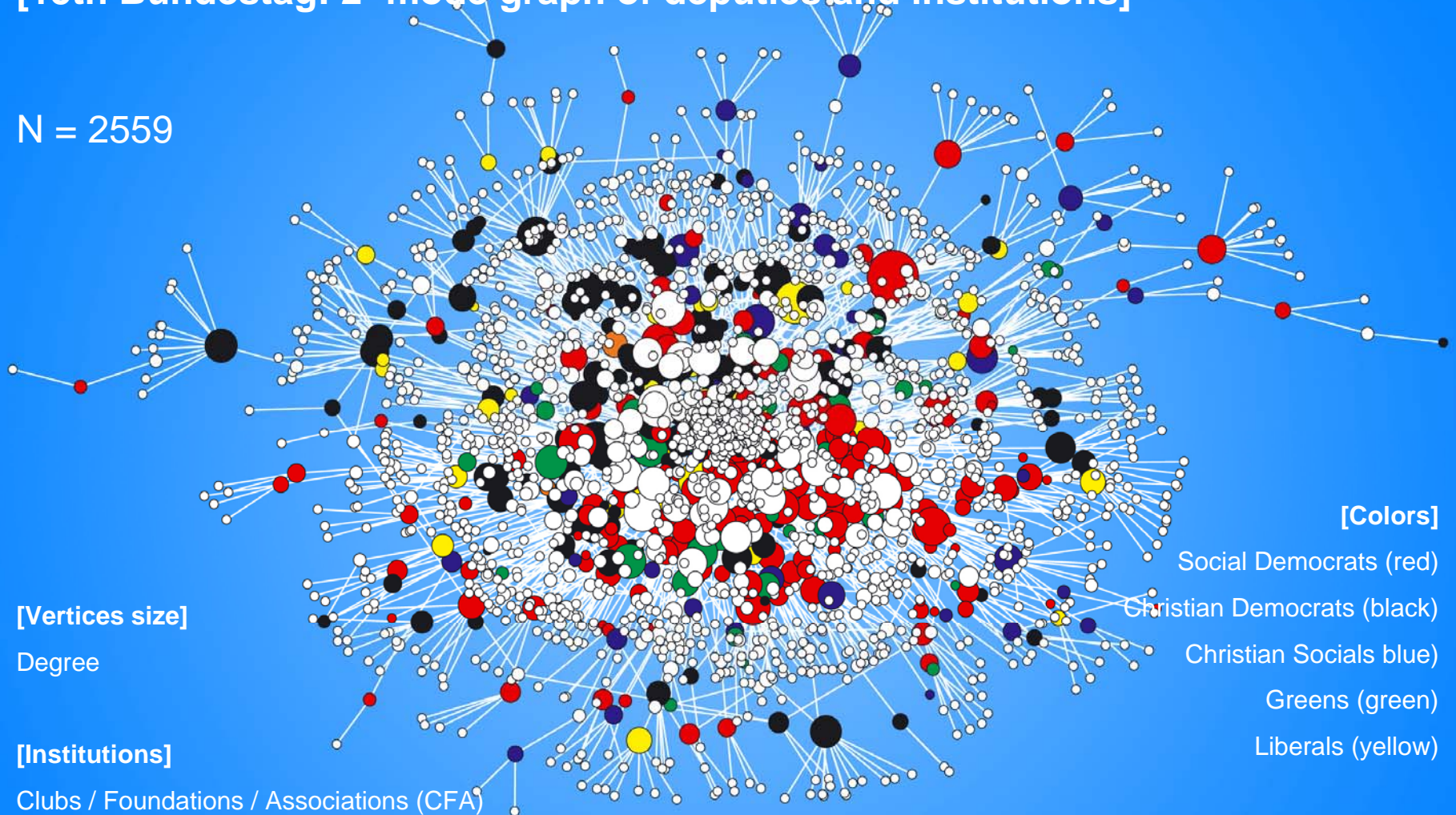
Corporate Bodies (C)

Business (B)

# Informal Political Networks in Germany's Parliament

[15th Bundestag: 2-mode graph of deputies and institutions]

N = 2559



[Vertices size]

Degree

[Institutions]

Clubs / Foundations / Associations (CFA)

Corporate Bodies (C)

Business (B)

[Colors]

Social Democrats (red)

Christian Democrats (black)

Christian Socials (blue)

Greens (green)

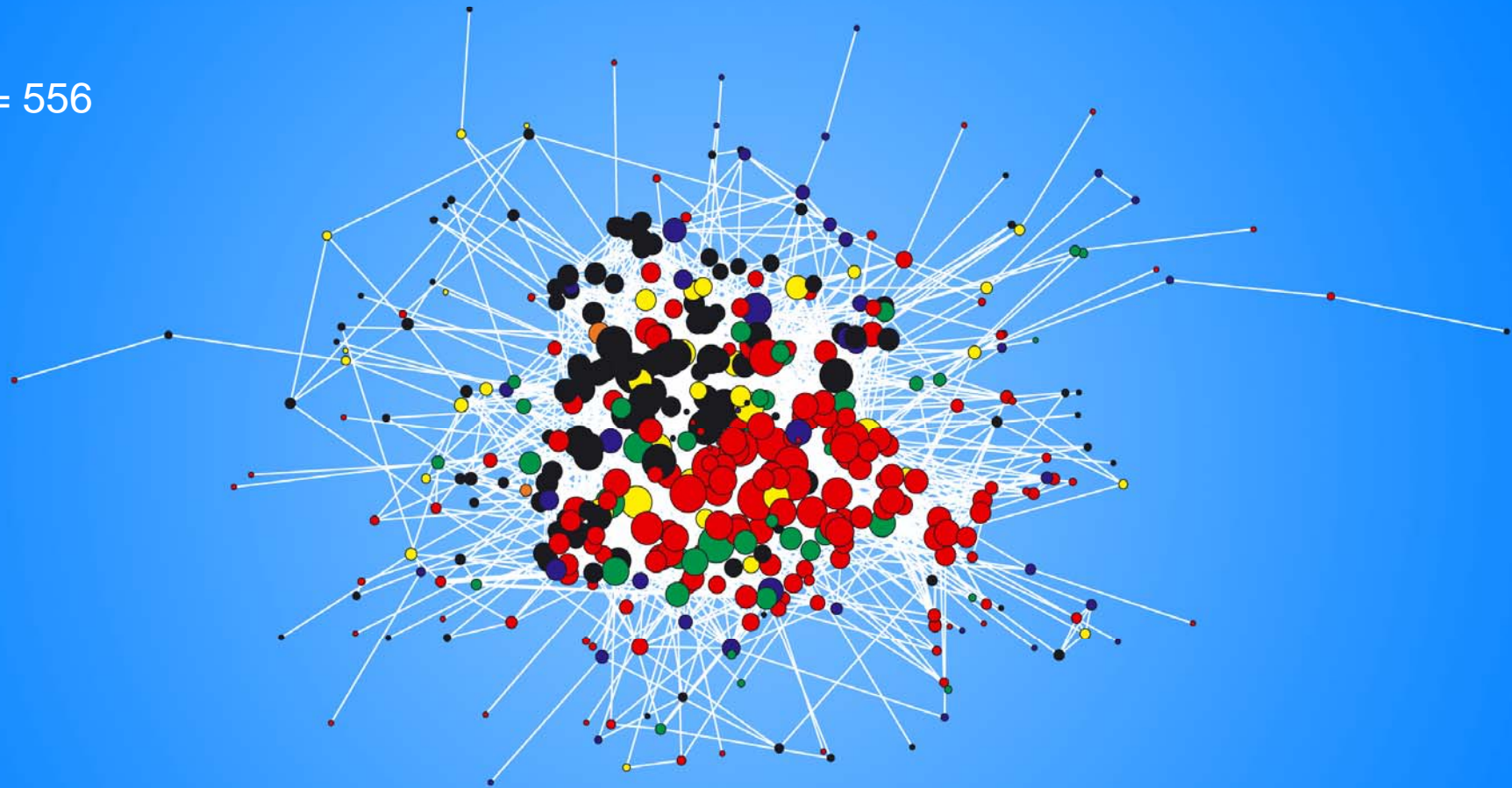
Liberals (yellow)

[Persons]

Deputies

## [15th Bundestag: 1- mode graph of deputies]

N = 556



[Vertices size]

Degree

[Persons]

Deputies

## [Levels of Analysis]

Who communicates across party lines?

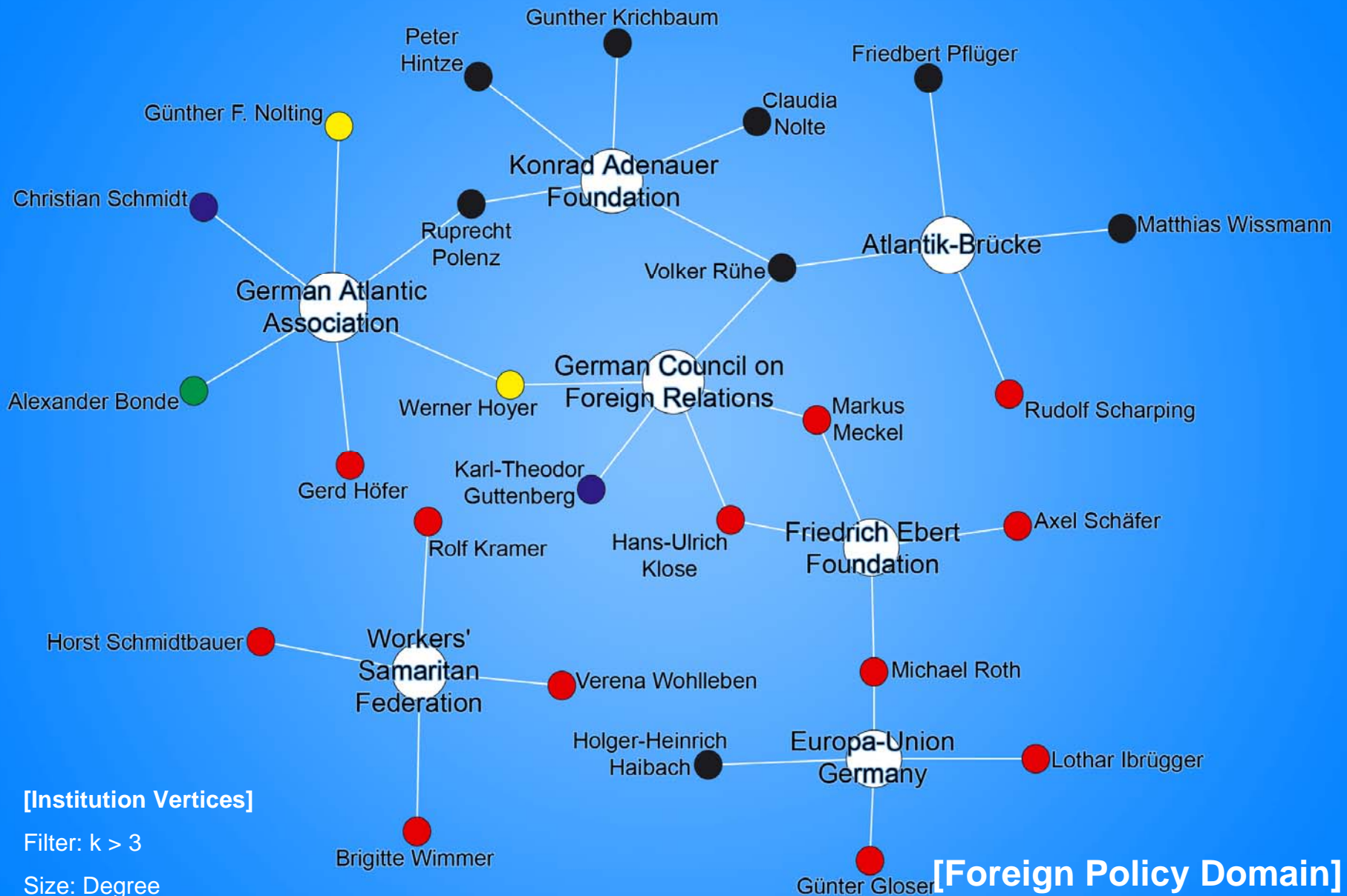
Identification of Policy Domains (Clustering of Committees by cohesion and position analyses)

Identification of cohesive subgroups, representatives, brokers (slide 13)

Power: Separate analysis of domination and influence (Knoke 1994) (slide 14)

- Basic tool: Bonacich centrality (Bonacich 1987)
- Domination: negative Beta factor
- Influence: positive Beta factor
- high degree correlation: Beta factors usually 0.1 .. 0.2
- small but significant variance between power types (slide 15)

# Informal Political Networks in Germany's Parliament



## [Power in Informal Networks]

		INFLUENCE	
		Absent	Present
DOMINATION	Present	Coercive Power	Authoritative Power
	Absent	Egalitarian "Power"	Persuasive Power

Figure 1.1 Types of power as combinations of influence and domination.

Source: Knoke 1994

## [Correlation of Centrality Measures]

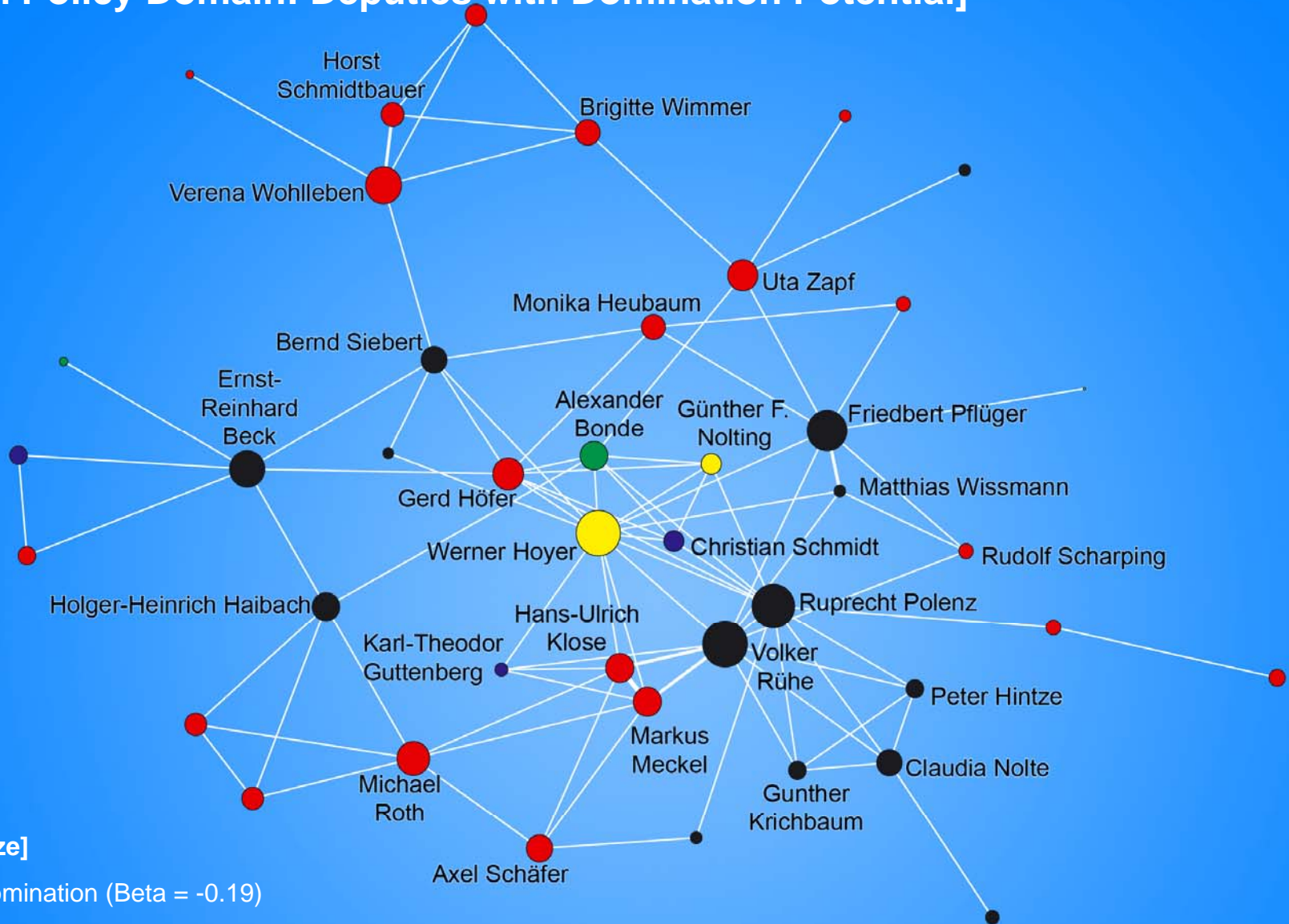
Korrelationen

		nEigenvector	nCloseness	nInfluence (.13)	nDegree	nDomination (-.19)	nBetweenness	nFlowBetweenness
nEigenvector	Korrelation nach Pearson	1	,749**	1,000**	,865**	,620**	,449**	,102
	Signifikanz (1-seitig)	,	,000	,000	,000	,000	,001	,260
	N	42	42	42	42	42	42	42
nCloseness	Korrelation nach Pearson	,749**	1	,762**	,840**	,667**	,743**	,425**
	Signifikanz (1-seitig)	,000	,	,000	,000	,000	,000	,002
	N	42	42	42	42	42	42	42
nInfluence (.13)	Korrelation nach Pearson	1,000**	,762**	1	,877**	,635**	,467**	,118
	Signifikanz (1-seitig)	,000	,000	,	,000	,000	,001	,229
	N	42	42	42	42	42	42	42
nDegree	Korrelation nach Pearson	,865**	,840**	,877**	1	,901**	,768**	,454**
	Signifikanz (1-seitig)	,000	,000	,000	,	,000	,000	,001
	N	42	42	42	42	42	42	42
nDomination (-.19)	Korrelation nach Pearson	,620**	,667**	,635**	,901**	1	,848**	,636**
	Signifikanz (1-seitig)	,000	,000	,000	,000	,	,000	,000
	N	42	42	42	42	42	42	42
nBetweenness	Korrelation nach Pearson	,449**	,743**	,467**	,768**	,848**	1	,784**
	Signifikanz (1-seitig)	,001	,000	,001	,000	,000	,	,000
	N	42	42	42	42	42	42	42
nFlowBetweenness	Korrelation nach Pearson	,102	,425**	,118	,454**	,636**	,784**	1
	Signifikanz (1-seitig)	,260	,002	,229	,001	,000	,000	,
	N	42	42	42	42	42	42	42

\*\* Die Korrelation ist auf dem Niveau von 0,01 (1-seitig) signifikant.

## Foreign Policy Domain

## [Foreign Policy Domain: Deputies with Domination Potential]

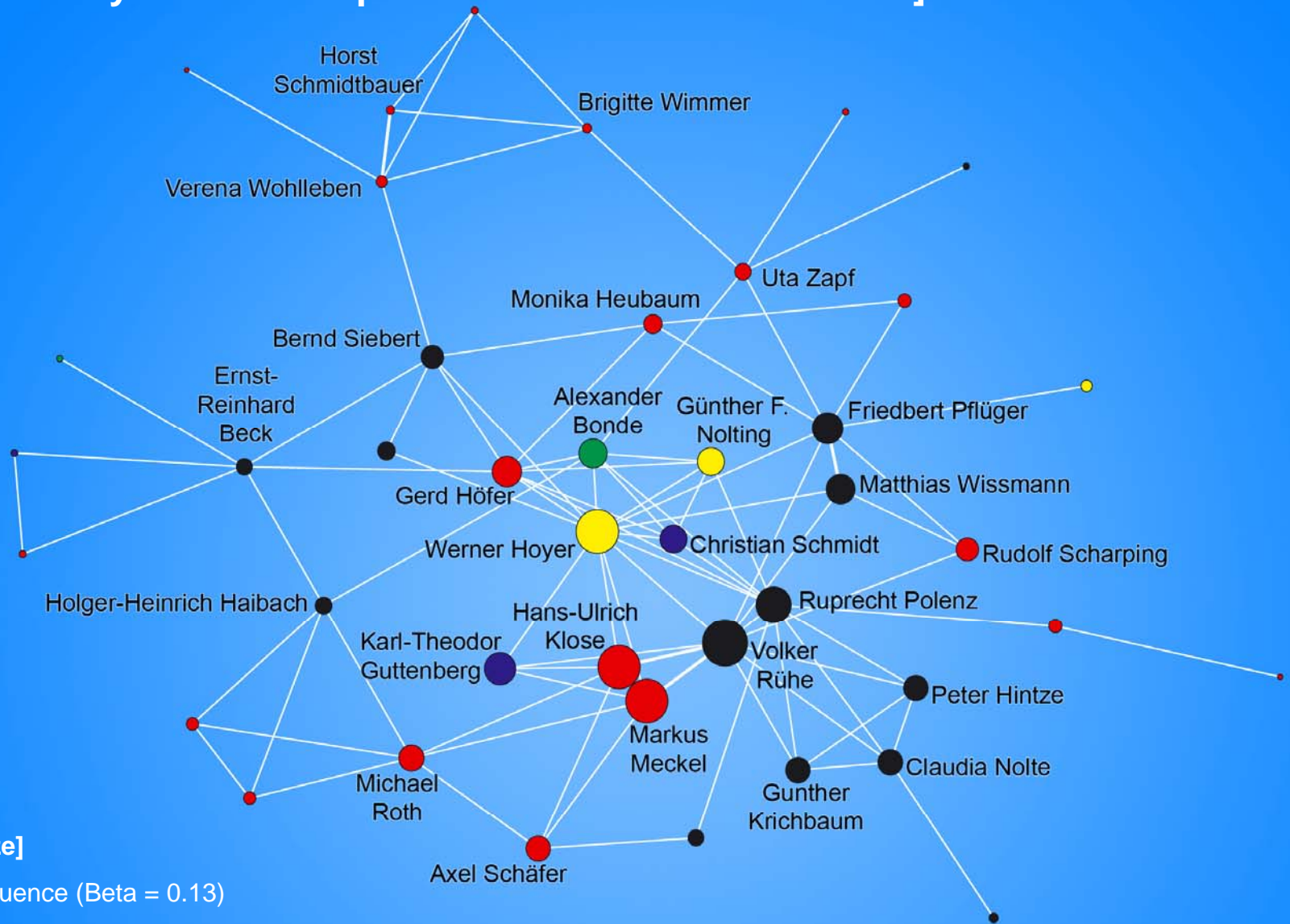


[Vertices size]

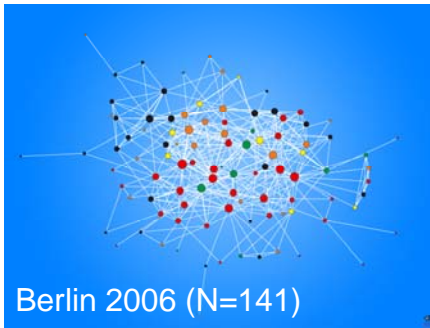
Bonacich Domination (Beta = -0.19)



## [Foreign Policy Domain: Deputies with Influence Potential]

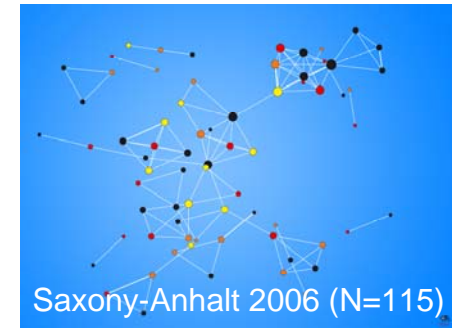


## [Small World Structure of all Parliaments: Clustering and Structural Holes]

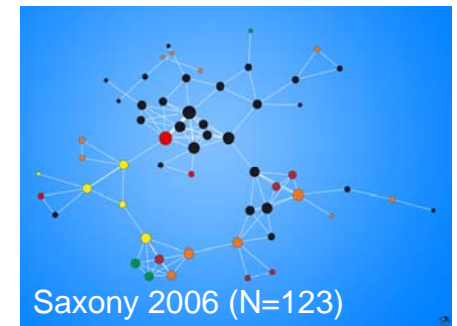
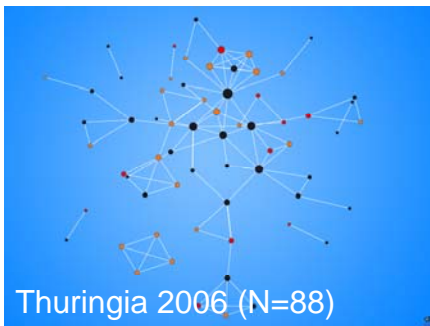
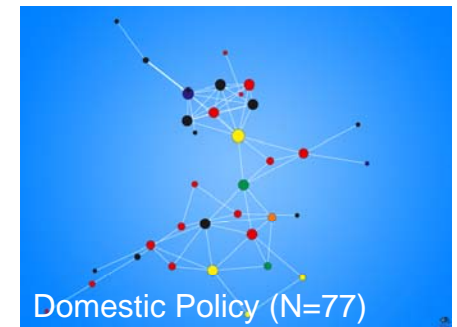
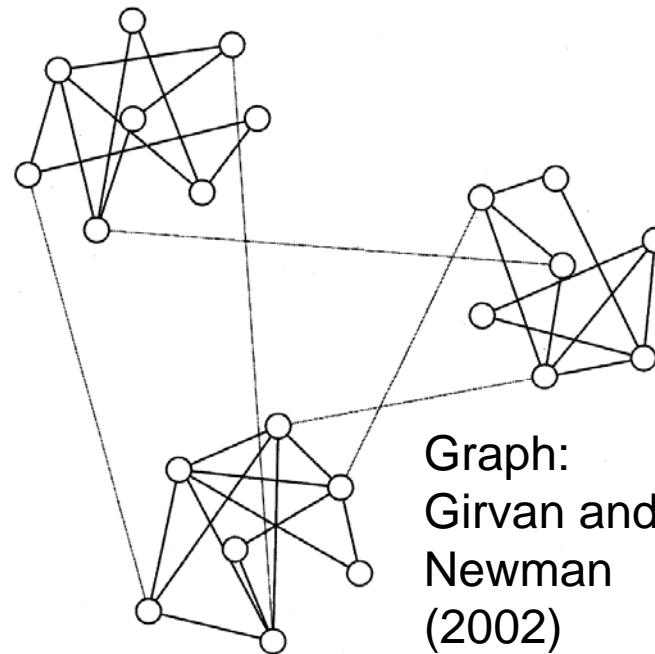
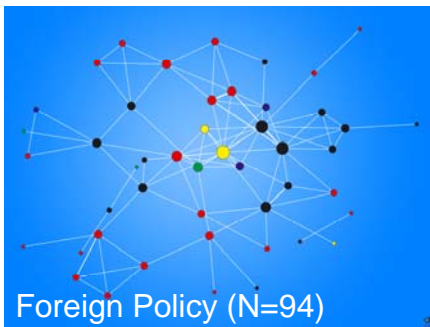


Main components: usual

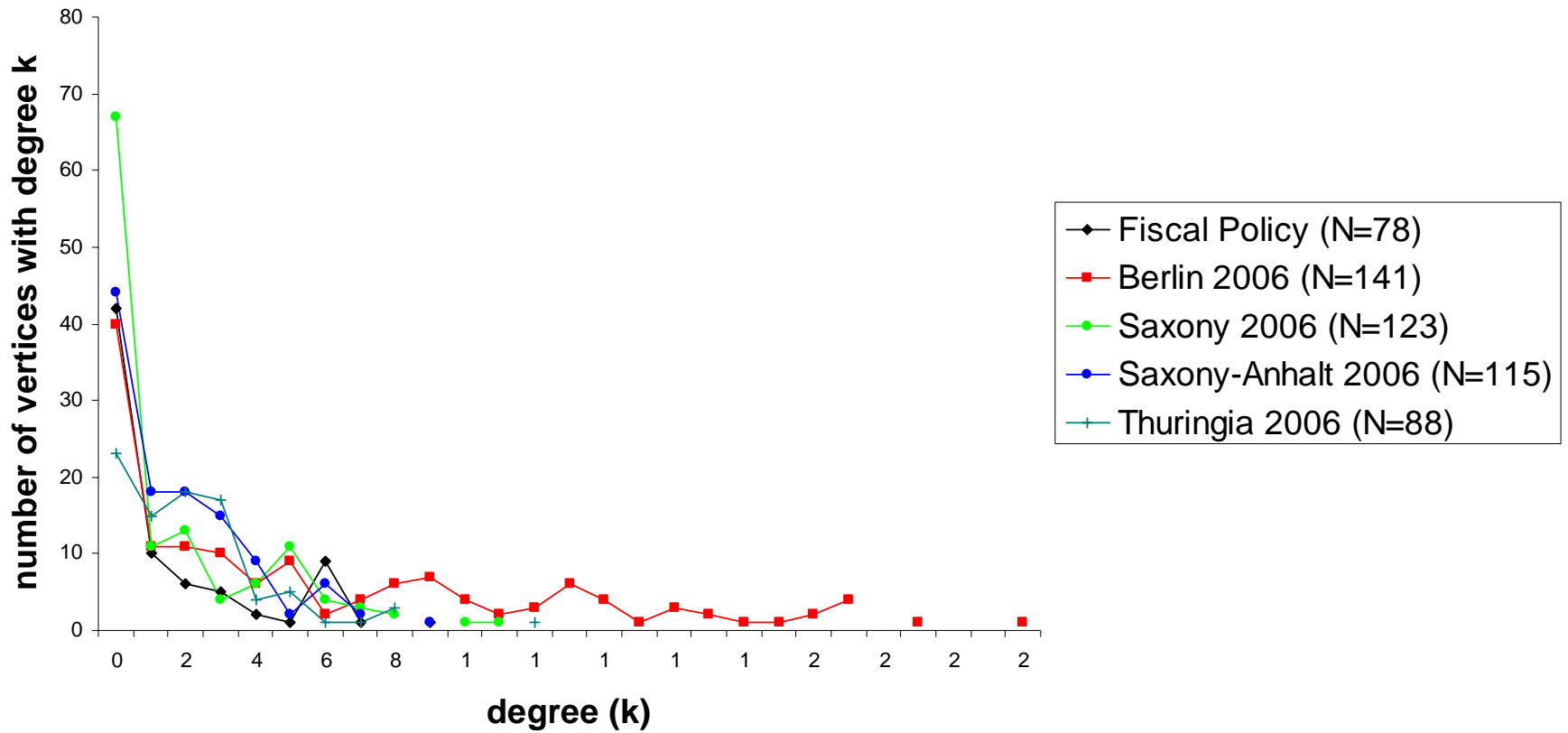
- densities: 11%
- clustering coefficients: 65%
- average distances: 3
- degree centralization: 20%



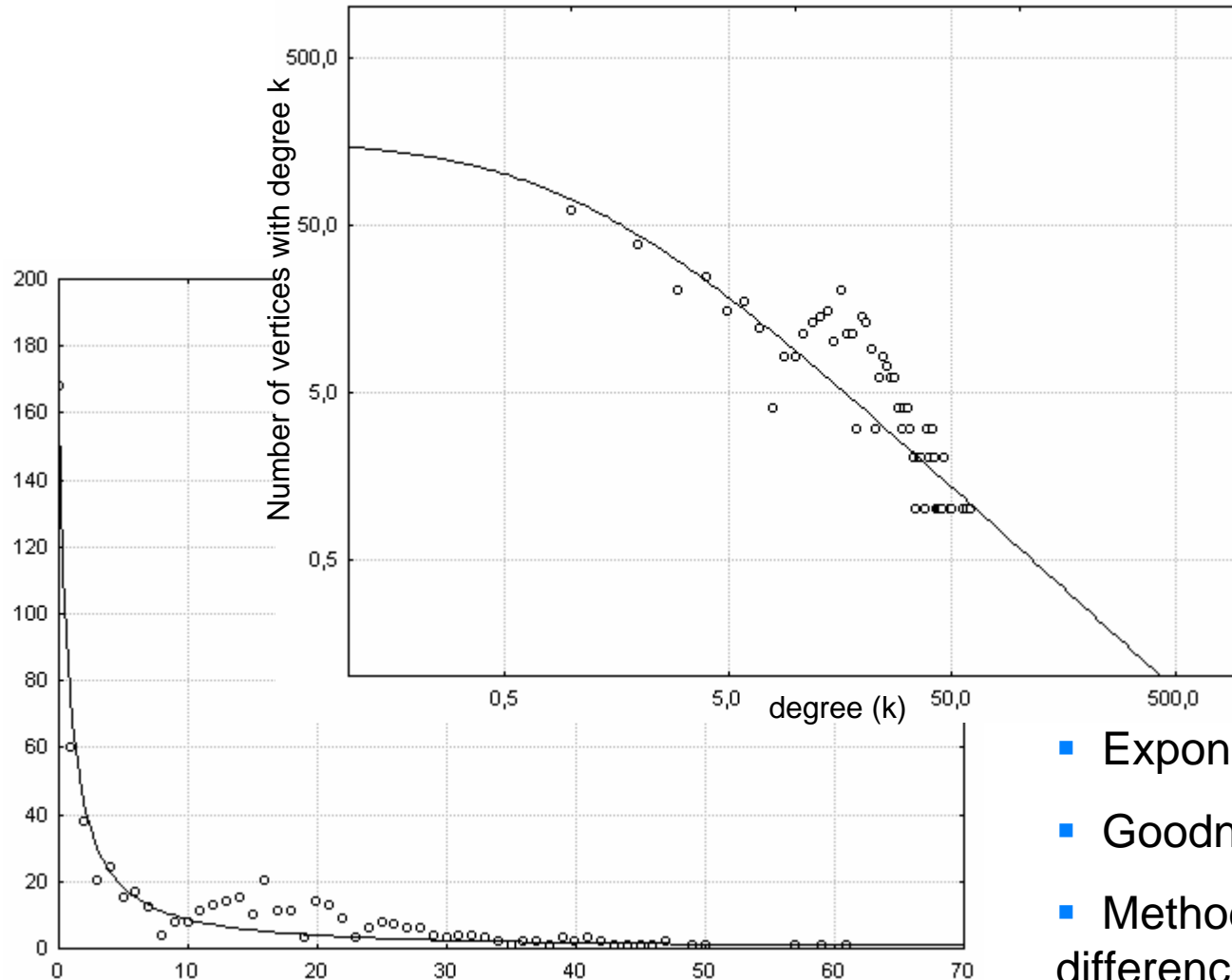
Community Structure:



## [Degree Distributions of German Parliaments]



## [Degree Distribution of Bundestag 2005]



Distribution has a power law regime:

- Exponent: 1.22
- Goodness of fit: 96.3 %
- Method: Minimizing squared differences

## [Why a power law regime makes sense for informal parliamentary networks]

Affiliations not by chance, but to join powerful people (hubs)

Political career = growth process (preferential attachment)

Yesterday Pfeffer (FAS) said: "It's better not to be a star"

Stars in parliament: media presence, position constantly debated and in question

Semi stars: working in background, long political career

Next slide: Model with Small World and scale-free properties

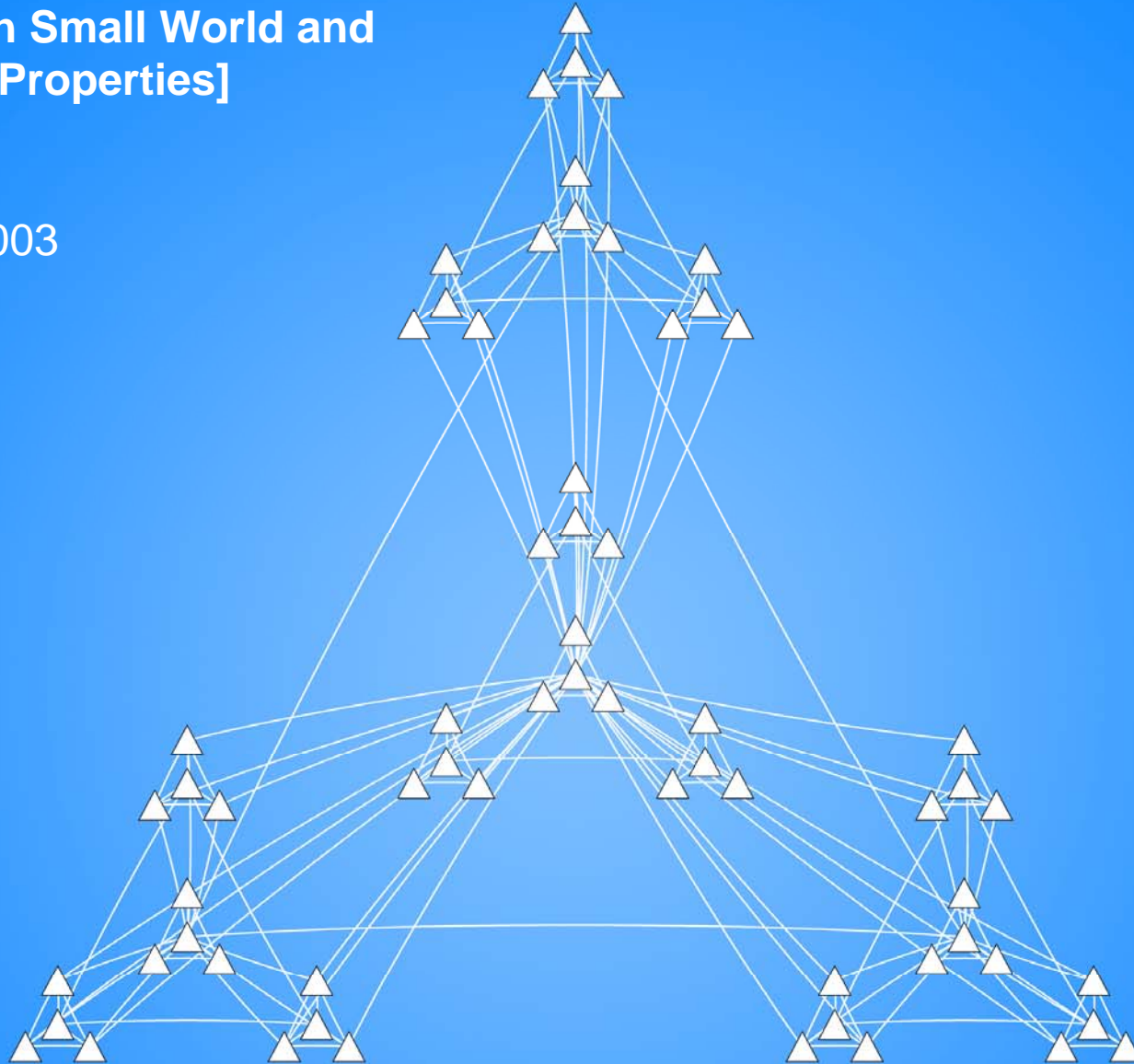
As parliamentary representation model has hierarchical structure

This tempted us to "throw all deputies together"

Hypothesis: Better fit

[Model with Small World and Scale-free Properties]

Barabási 2003



## [Degree Distribution of All Deputies]

N = 1225

Distribution again has a power law regime:

- Exponent: 1.27
- Goodness of fit: 98.5 %

## [Summary and Discussion]

We have identified:

- Non-parliamentary communication potentials
- Bridges over structural holes / between parties or caucuses
- Deputies' roles

Network structure:

- Small World structure
- Community structure
- Power law regime

Limitations:

- Source of bias: data is given by deputies, virtually no control
- static image of informal networks



## [Future Work]

Compare structure of 15th and 16th Bundestag

Fully shift to meta matrix mode

Enrich individual deputy records by semantic network data (names in context)

Further analyze structure - also 2- mode