Social Networks

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Visualizing Social Groups Linton C. Freeman, American Statistical Association, 1999 Proceedings of the Section on Statistical Graphics, 2000, 47-54.

Social Network Fragments Chap 7, danah boyd MS Thesis "Faceted Id/entity: Managing representation in a digital world"

Vizster: Visualizing Online Social Networks. Jeffrey Heer and danah boyd. InfoVis 2005.

Visualizing Social Groups | SNF | Vizster

scope | binary | MDS | SVD | cliques | quantitative | 3D | colour & motion

using images to visualize social patterning

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on or **off** relationship

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	I 1	W 1	W 2	W 3	W 4	W 5	W 6	W 7	W 8	W 9	S 1	S 4
I1	0	1	1	1	1	0	0	0	0	0	0	0
W1	1	0	1	1	1	1	0	0	0	0	1	0
W2	1	1	0	1	1	0	0	0	0	0	1	0
W3	1	1	1	0	1	1	0	0	0	0	1	0
W4	1	1	1	1	0	1	0	0	0	0	1	0
W5	0	1	0	1	1	0	0	1	0	0	1	0
W6	0	0	0	0	0	0	0	1	1	1	0	0
W7	0	0	0	0	0	1	1	0	1	1	0	1
W8	0	0	0	0	0	0	1	1	0	1	0	1
W9	0	0	0	0	0	0	1	1	1	0	0	1
S1	0	1	1	1	1	1	0	0	0	0	0	0
S4	0	0	0	0	0	0	0	1	1	1	0	0

Table 1. Game Playing at Western Electric

Visualizing Social Groups | SNF | Vizster

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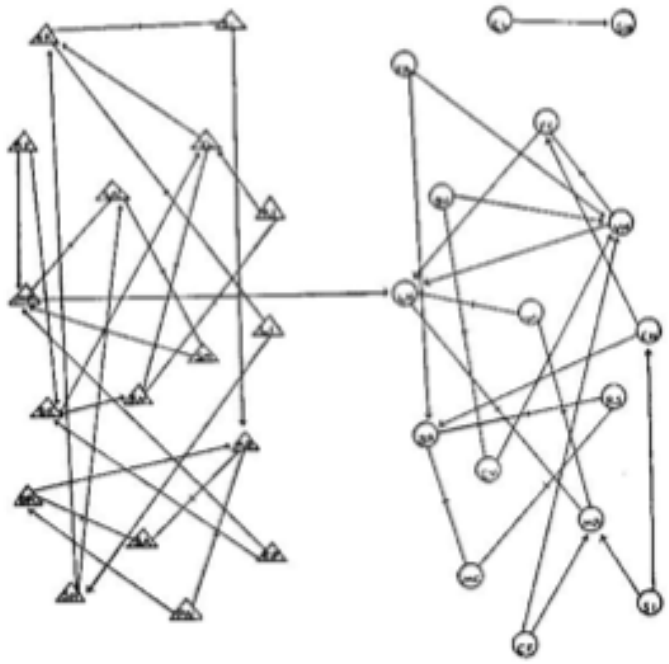
ad-hoc node placement



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multi-dimensional scaling

Visualizing Social Groups | SNF | Vizster

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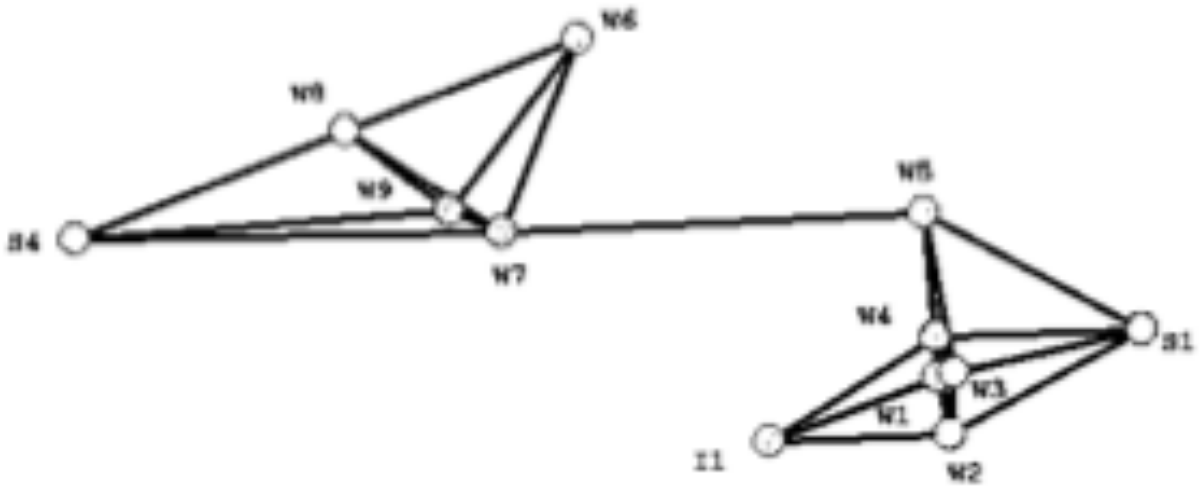

Figure 2. MDS of Game Playing at Western Electric (Raw Data).

Visualizing Social Groups | SNF | Vizster

scope | binary | MDS | SVD | cliques | quantitative | 3D | colour & motion

singular value decomposition

Visualizing Social Groups | SNF | Vizster

all variance in first few variables

Visualizing Social Groups | SNF | Vizster

scope | binary | MDS | SVD | cliques | quantitative | 3D | colour & motion

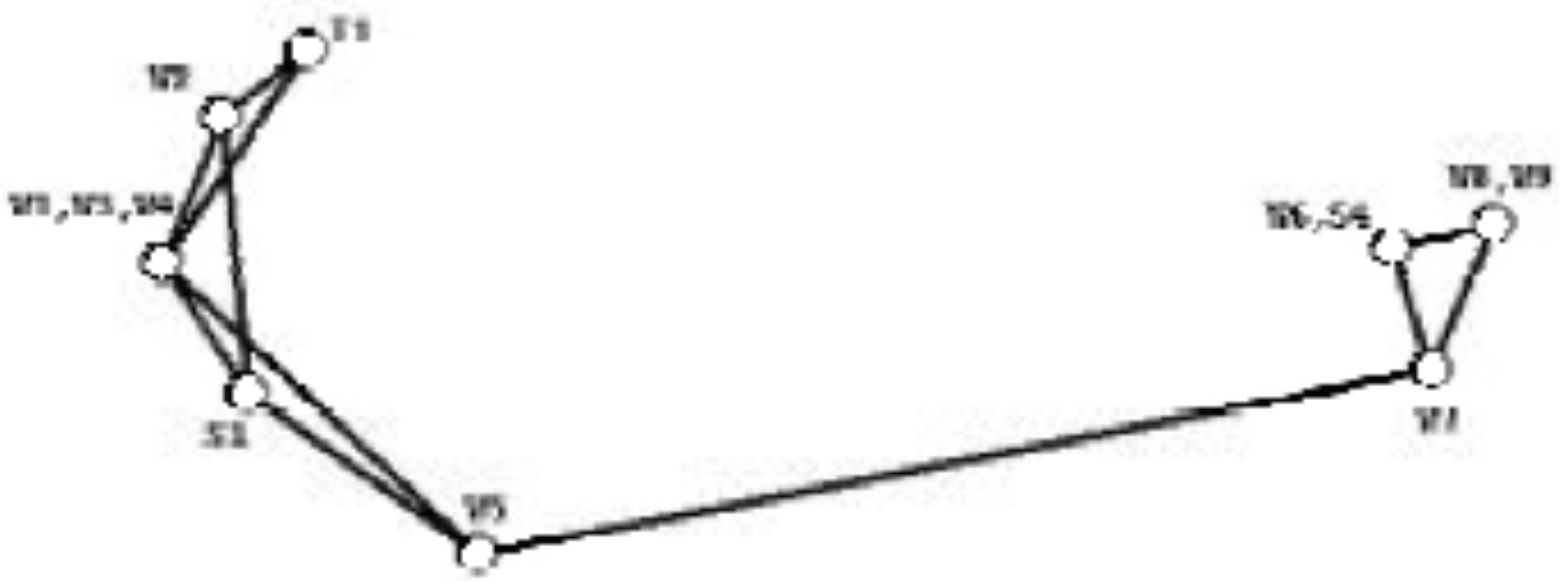

Figure 3. SVD of Game Playing at Western Electric.

Visualizing Social Groups | SNF | Vizster

scope | binary | MDS | SVD | cliques | quantitative | 3D | colour & motion

maximal complete graph

Visualizing Social Groups | SNF | Vizster

scope | binary | MDS | SVD | cliques | quantitative | 3D | colour & motion

Galois Lattices

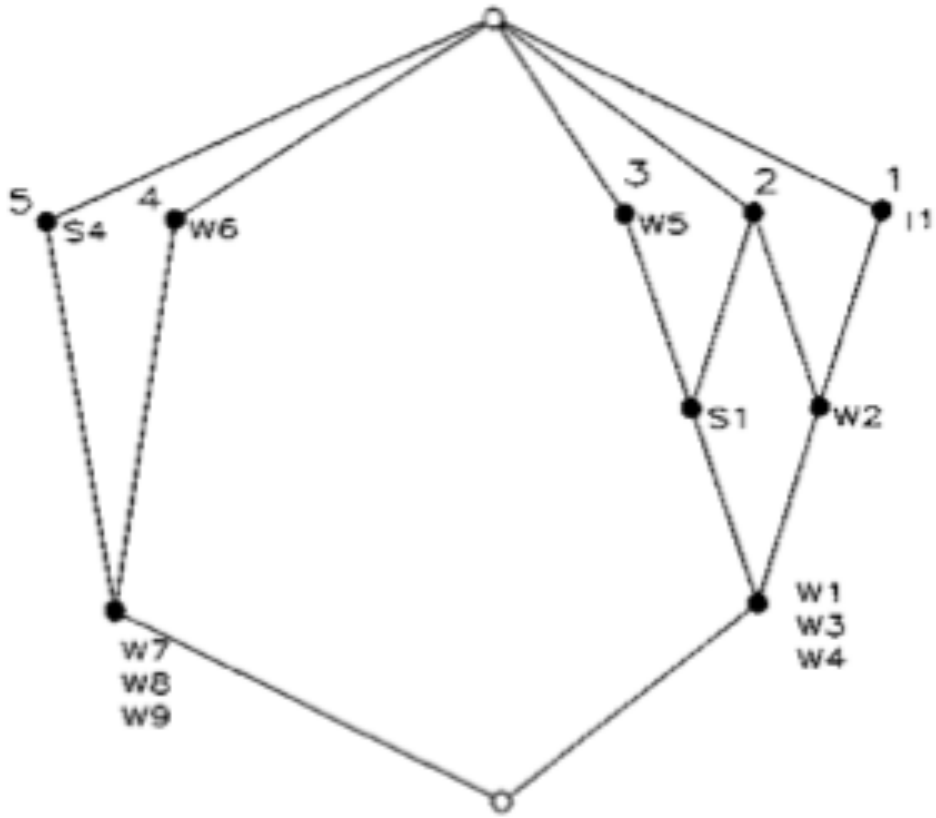

Figure 4. Galois Lattice of the Western Electric Cliques.

Visualizing Social Groups | SNF | Vizster

scope | binary | MDS | SVD | cliques | quantitative | 3D | colour & motion

use quantity to identify groups

Visualizing Social Groups | SNF | Vizster

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dolphins

swimming

together

	a	b	c	d	e	f	g	h	i	j	k	l	m
a	12	12	8	7	7	4	7	4	0	0	0	0	0
b	12	12	8	7	7	4	7	4	0	0	0	0	0
c	8	8	24	23	18	3	5	3	0	0	0	0	0
d	7	7	23	26	19	2	4	2	0	0	0	0	0
e	7	7	18	19	20	3	5	3	0	0	0	0	0
f	4	4	3	2	3	21	20	21	0	0	0	0	0
g	7	7	5	4	5	20	23	20	0	0	0	0	0
h	4	4	3	2	3	21	20	21	0	0	0	0	0
i	0	0	0	0	0	0	0	0	31	26	0	0	0
j	0	0	0	0	0	0	0	0	26	28	0	0	0
k	0	0	0	0	0	0	0	0	0	0	35	31	24
l	0	0	0	0	0	0	0	0	0	0	31	31	22
m	0	0	0	0	0	0	0	0	0	0	24	22	25

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can still apply MDS and SVD

Figure 5. Two Dimensional MDS

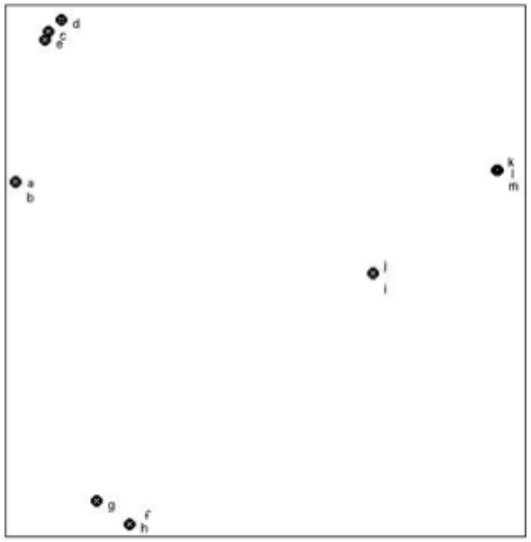

Figure 6. Two Dimensional SVD

Visualizing Social Groups | SNF | Vizster

scope | binary | MDS | SVD | cliques | quantitative | 3D | colour & motion

groups

Visualizing Social Groups | SNF | Vizster

scope | binary | MDS | SVD | cliques | quantitative | 3D | colour & motion

genetic algorithm

Visualizing Social Groups | SNF | Vizster

scope | binary | MDS | SVD | cliques | quantitative | 3D, colour & motion

add complexity for display, navigation

improve link representation

Visualizing Social Groups | SNF | Vizster

scope | binary | MDS | SVD | cliques | quantitative | 3D, colour & motion

Pros:

good walkthrough

simple datasets

Cons:

poor transitions between topics

Visualizing Social Groups | SNF | Vizster

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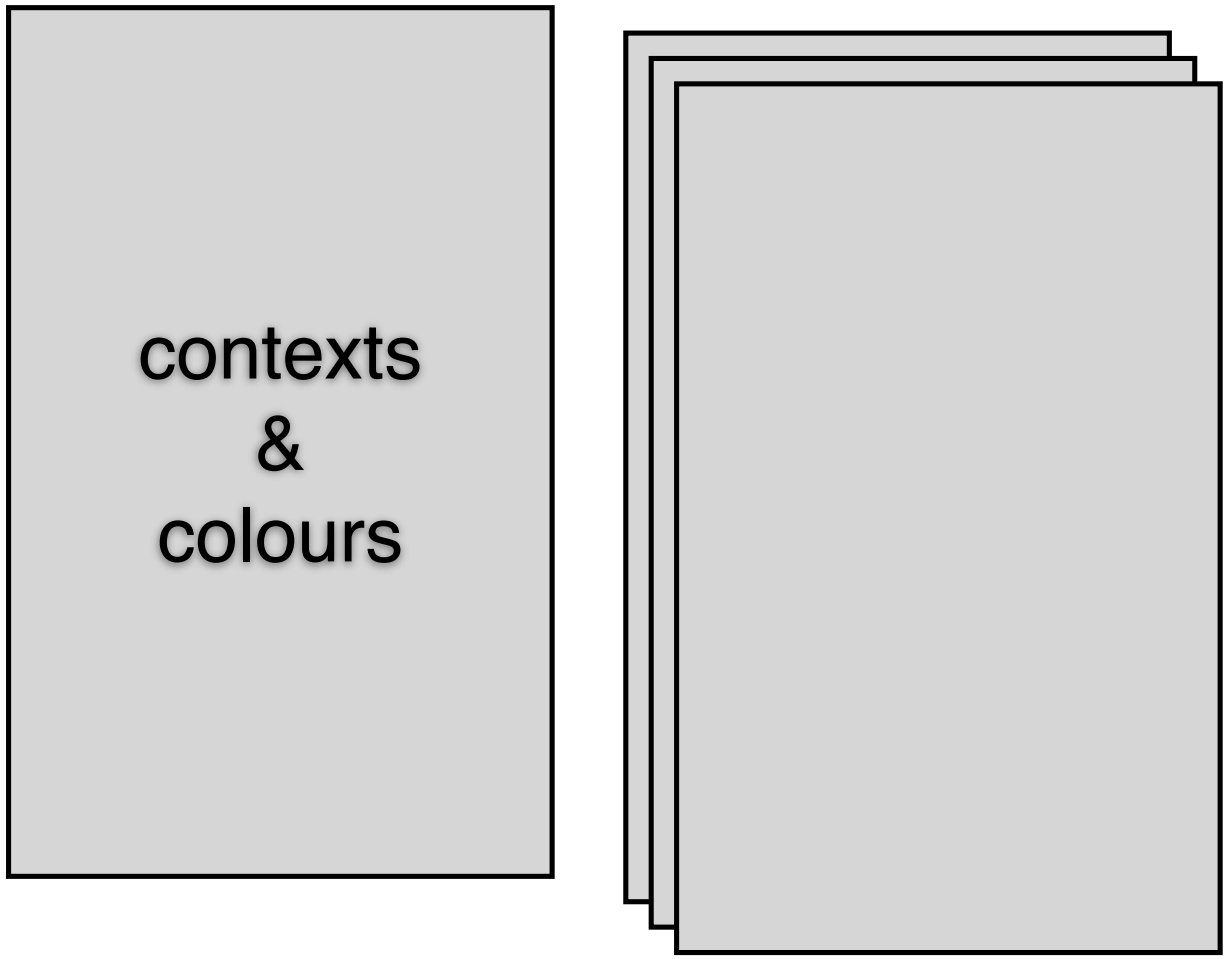
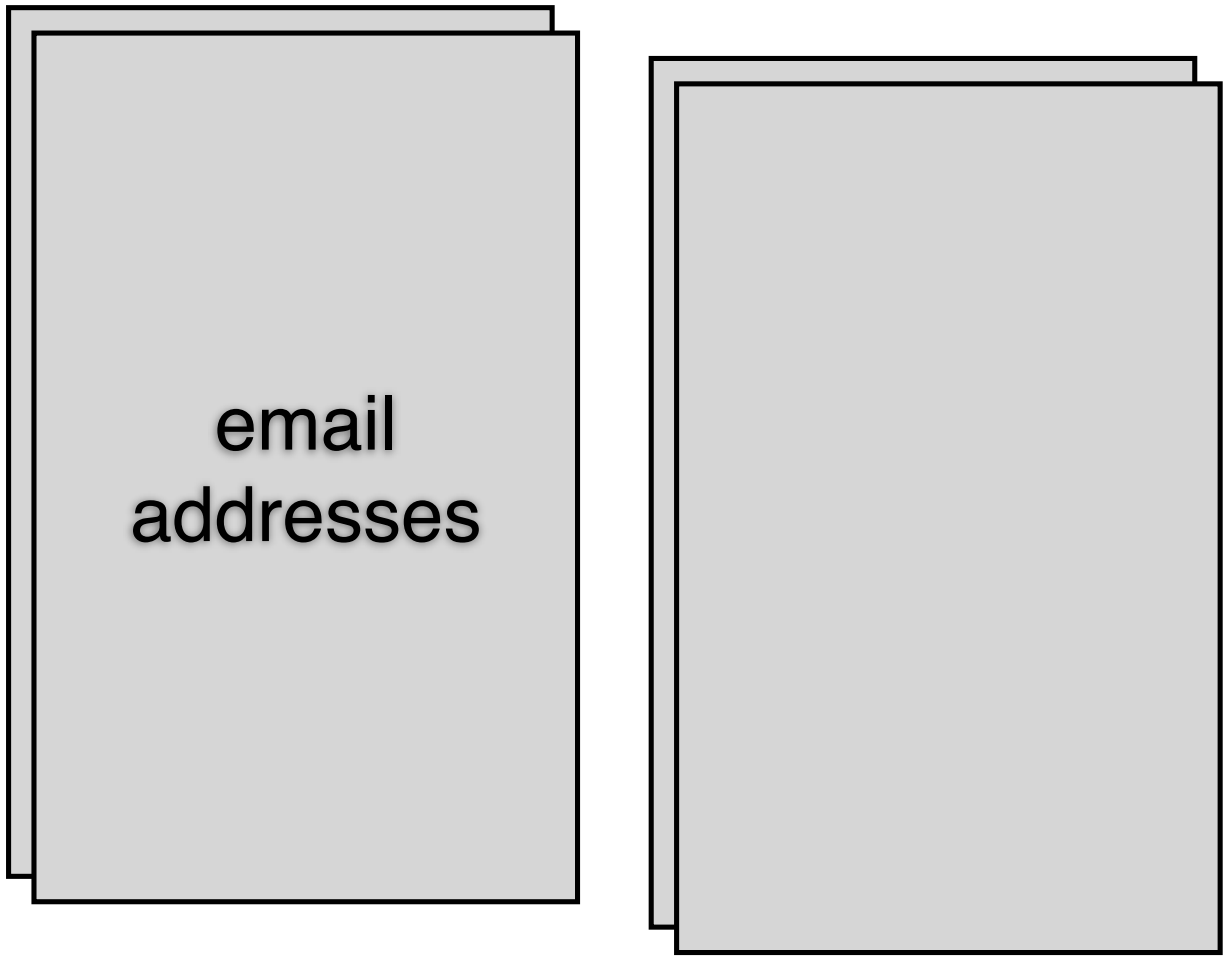
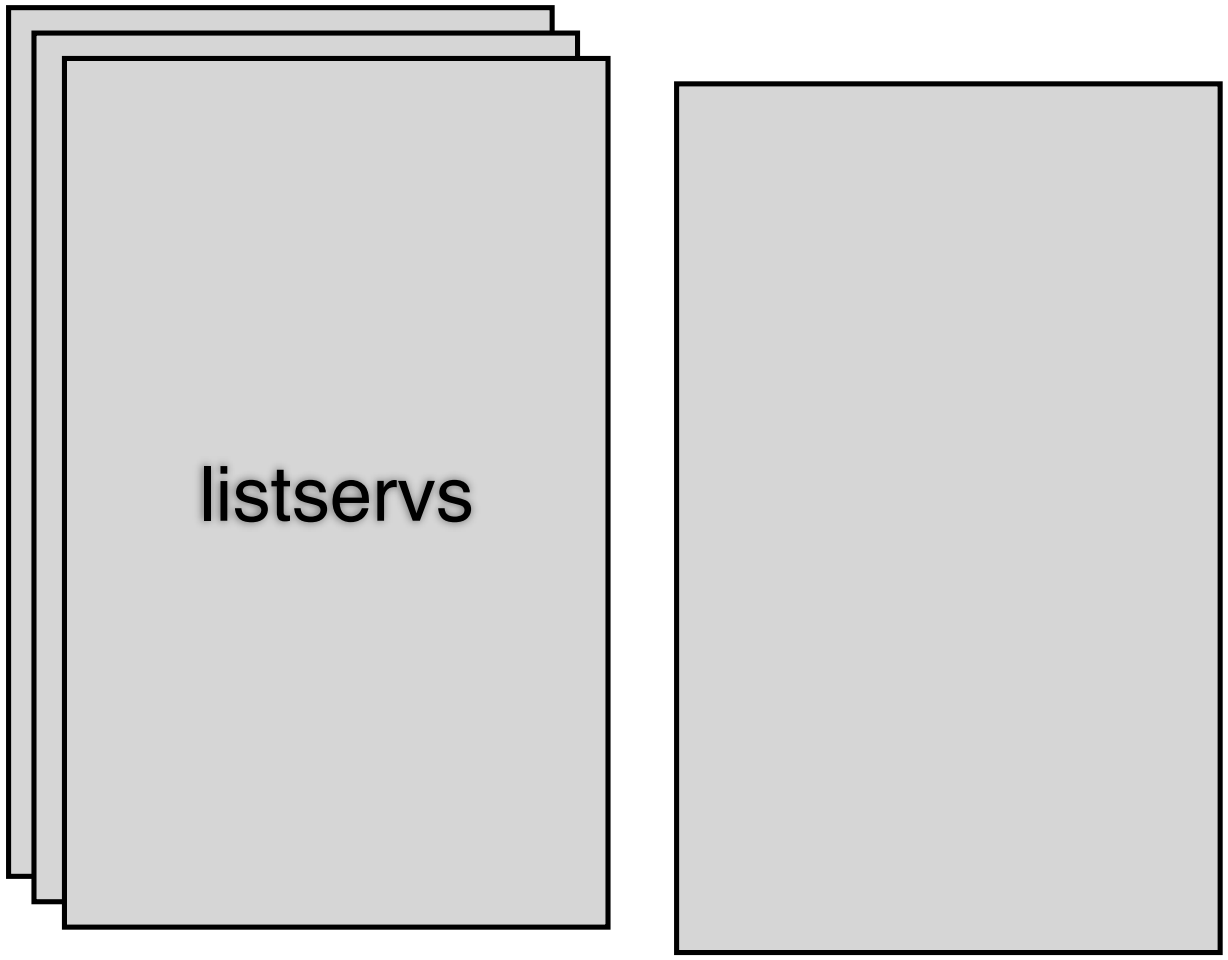
questions?

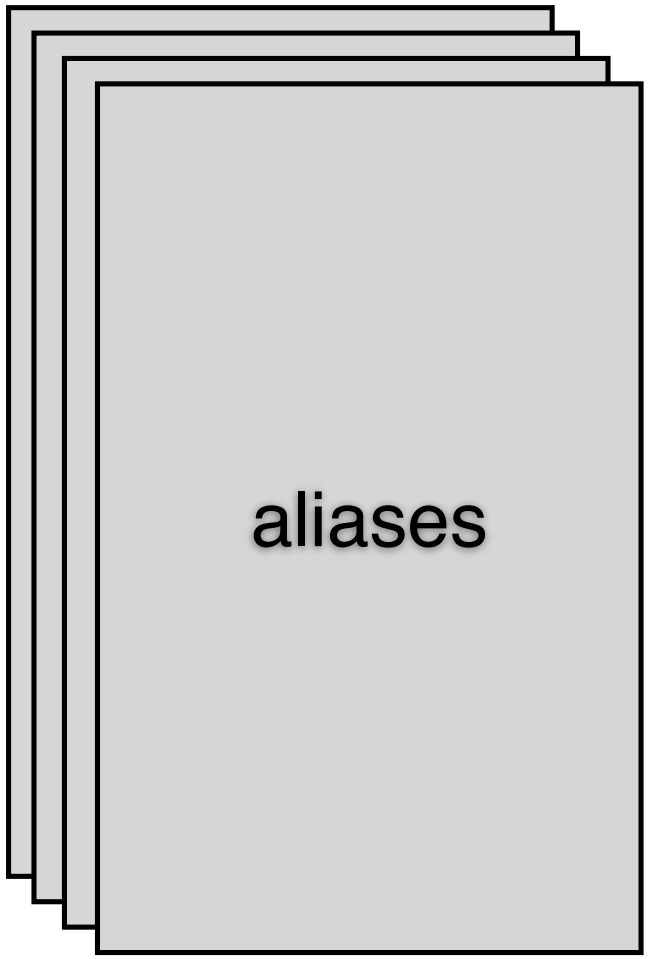
visualize email social networks

users supply their mail spool and 4 files


contexts
&
colours


email
addresses


listservs


aliases

not binary

knowledge: A → B

awareness: B ⮌ A

weak awareness: B || C

list awareness: {B, C,…}

trusted: $A \rightarrow B_{BCC}$

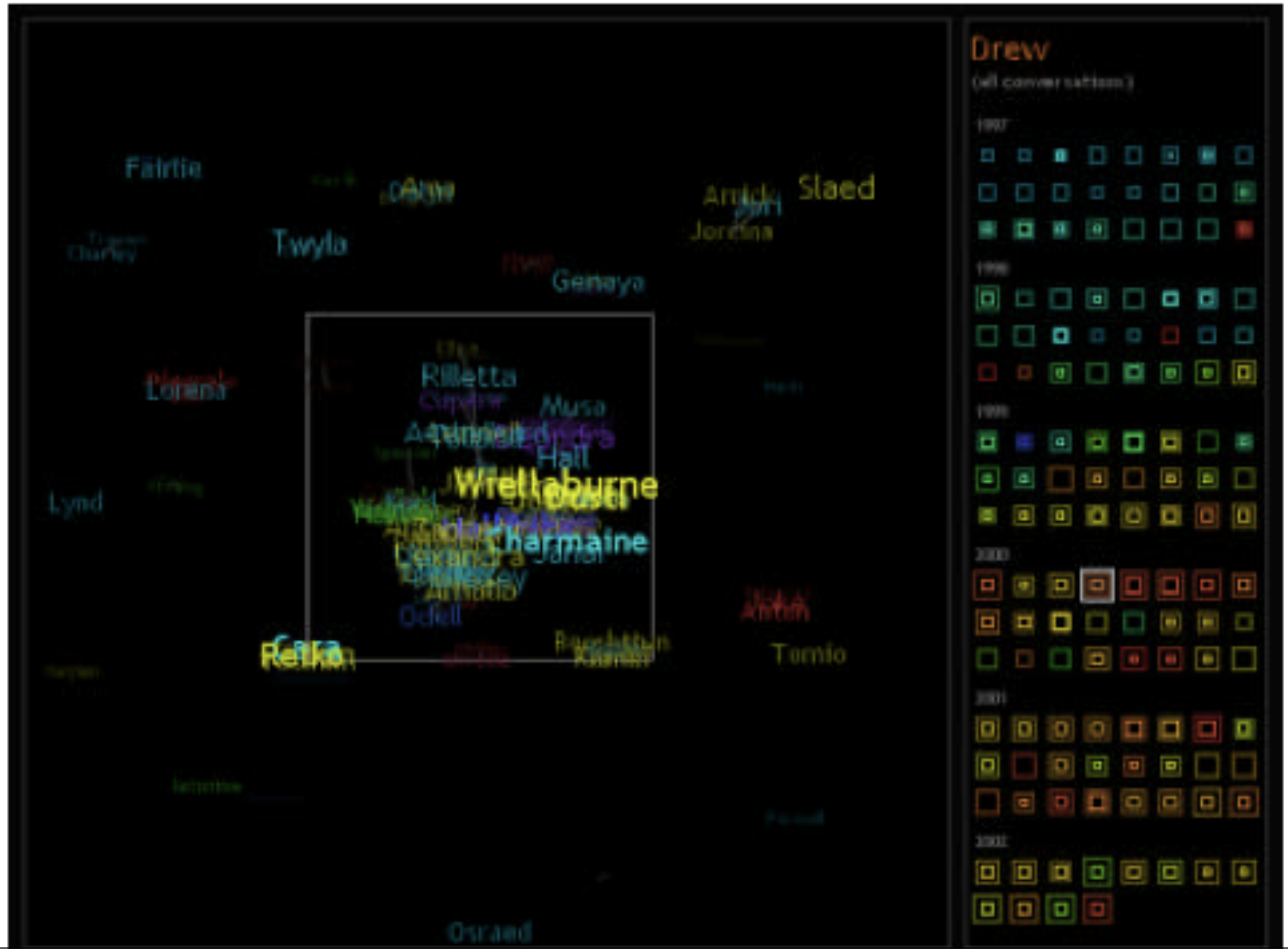
matrix of tie strengths

spring system

spring system

VSG | **Social Network Fragments** | Vizster

scope | input | ties | algorithm | UI | study | self-critique



informal study

lots!

- tie strength by volume misleading
- layout artifacts (‘fake’ proximity)

Pros:

easy to follow

self-critique

Cons:

layout issue **really** bad

questions?

VSG | SNF | **Vizster**

scope | problem | presentation | algorithm | UI | study

visualize Friend**ster**

lots of data, no way to see it

imagery is central

“start with what you know, then grow”

spring-based layout

VSG | SNF | **Vizster**

scope | problem | presentation | algorithm | UI | study

informal

techies

Pros:

tool uses real data

Cons:

not a lot more info on algorithm

no controlled study

questions?

Visualizing Social Groups Linton C. Freeman, American Statistical Association, 1999 Proceedings of the Section on Statistical Graphics, 2000, 47-54.

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Vizster: Visualizing Online Social Networks. Jeffrey Heer and danah boyd. InfoVis 2005.