

# Intent in Social Tagging Systems

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# Vision

**Opportunity:** Use user generated data on the web to construct the world's most comprehensive common-sense knowledge base.

History:

- CYC (1984 - )
- Volunteer-based Knowledge Acquisition (2000 - )  
Openmind ConceptNet
- Knowledge Acquisition from the Web (2002 - )
- Human Computation (2004 - )  
Games with a Purpose

# Social Tagging Systems - Example from Delicious

The screenshot shows a user profile for 'Joshua Schachter' on the Delicious social tagging platform. The interface includes a navigation bar, a search bar, and a list of bookmarked resources. Annotations highlight the 'User' (profile name), 'Resources' (individual bookmark entries), and 'Tags' (tag counts and lists).

**User:** Joshua Schachter's Bookmarks

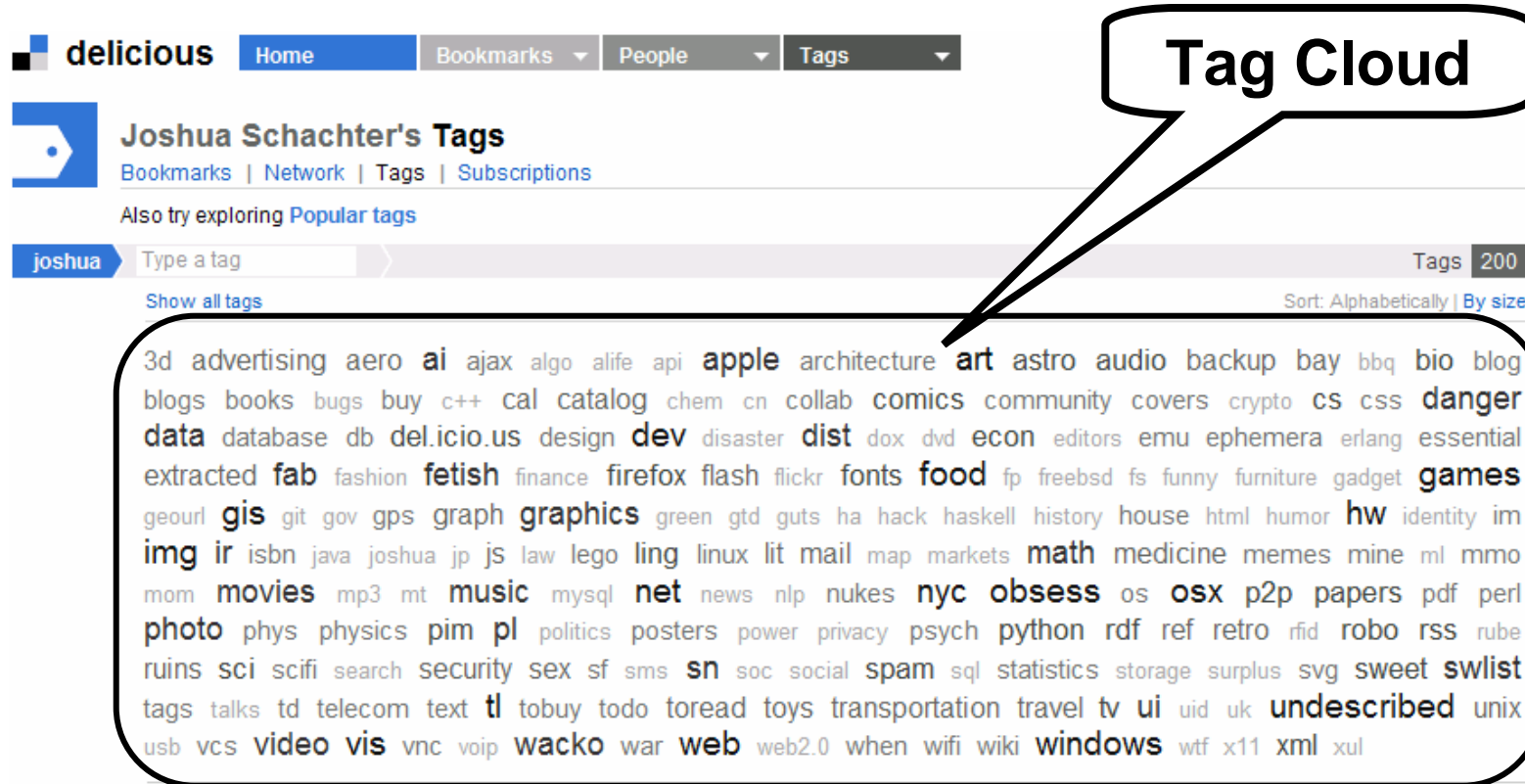
**Resources:**

- 17 APR 09 Radish - Indoor Solar-powered Calendar Display
- 16 APR 09 MUJI USA ONLINE STORE
- agile approach | World Bank Open API 2.0 Launched
- Reverend
- 15 APR 09 Pogoplug — Access your external hard drive from anywhere on the Internet
- visualizing sorting algorithms
- 13 APR 09 Times

**Tags:**

Tag	Count
tl	2442
undescribed	1589
dev	531
gis	498
osx	426
img	420
games	402
web	376
food	353
nyc	337
<b>All Tags</b>	<b>628</b>
3d	21
770	2
adobe	1
ads	5
advertising	44
aero	52
agile	2
ai	106
ajax	28
algo	11
alife	10
amqp	2

# Social Tagging Systems - Example from Delicious



**delicious** Home Bookmarks People Tags

**Joshua Schachter's Tags**  
[Bookmarks](#) | [Network](#) | [Tags](#) | [Subscriptions](#)

Also try exploring [Popular tags](#)

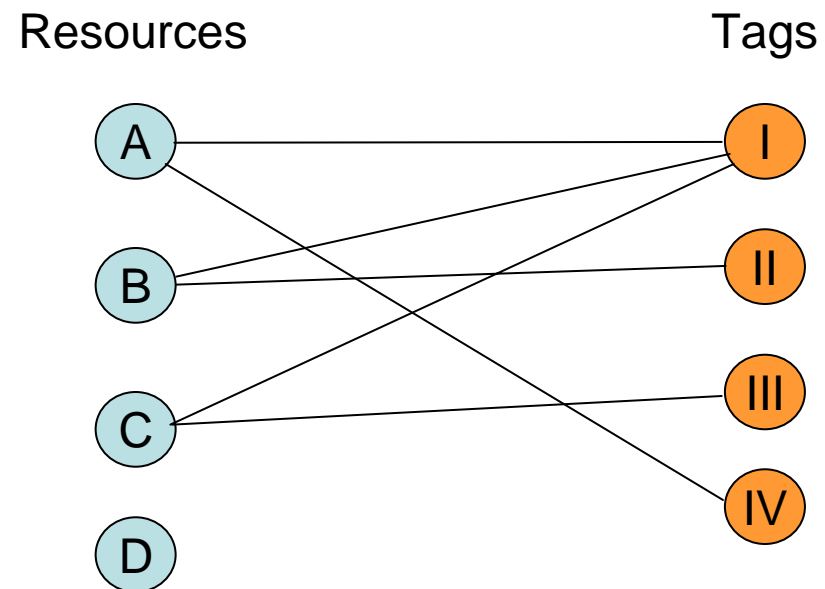
joshua Type a tag Tags 200

Show all tags Sort: Alphabetically | [By size](#)


3d advertising aero ai ajax algo alife api **apple** architecture art astro audio backup bay bbq bio blog  
 blogs books bugs buy c++ cal catalog chem cn collab comics community covers crypto cs css **danger**  
**data** database db del.icio.us design dev disaster dist dox dvd econ editors emu ephemera erlang essential  
 extracted **fab** fashion **fetish** finance firefox flash flickr fonts **food** fp freebsd fs funny furniture gadget **games**  
 geourl **gis** git gov gps graph **graphics** green gtd guts ha hack haskell history house html humor **hw** identity im  
**img** ir isbn java joshua jp js law lego ling linux lit mail map markets **math** medicine memes mine ml mmo  
 mom **movies** mp3 mt **music** mysql **net** news nlp nukes **nyc** **obsess** os **osx** p2p papers pdf perl  
**photo** phys physics **pim** **pl** politics posters power privacy psych python rdf ref retro rfid robo rss rube  
 ruins sci scifi search security sex sf sms **sn** soc social **spam** sql statistics storage surplus svg sweet **swlist**  
 tags talks td telecom text **tl** tobuy todo toread toys transportation travel tv **ui** uid uk **undescribed** unix  
 usb vcs **video** **vis** vnc voip **wacko** war **web** web2.0 when wifi wiki **windows** wtf x11 xml xul

# Two Mode Networks

- Two types of nodes  
e.g. Users and Tags, Tags and Resources



# Reminder: Social Networks Examples



You aren't signed in [Sign In](#) [Help](#)

lost.fm the social music revolution
Music
Users
Listen
Events
NEW! Widgets
Download



## del.icio.us / url

[popular](#) | [recent](#)

[login](#) | [register](#) | [help](#)

» del.icio.us history for

### Why and How to Flash Your BIOS

<http://www.devhardware.com/c/a/Hardware-Guides/Why-and-How-to-Flash-Your-BIOS/>

**this url has been saved by 106 people.**  
[save this to your bookmarks »](#)

### user notes

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Why and How to Flash Your BIOS  
[rlaw77](#)

This article is going to focus on the basics and explain ways to flash the BIOS, precautions and how to recover in case of a bad flash.  
[edwinek](#)

Why and How to Flash Your BIOS (Page 1 of 4 ) Flashing the BIOS is one of the most feared topics related to computers. Yes, people should be very cautious because it can be dangerous. This article is going to focus on the basics and explain ways to flash  
[oblonski](#)

Aug '07

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**posting history**

» first posted by [farbiarz](#) to [system:unfiled](#)

Sep '07

by [JillSw3d3](#) to [hardware](#)

by [gtss](#) to [bios](#) [boost](#) [post](#) [speed](#) [software](#) [flash](#) [pc](#) [hardware](#) [computer](#)

by [sgill292](#) to [bios](#) [flash](#) [computer](#) [hardware](#)

by [Curioso44](#) to [boot](#)

by [catfish182](#) to [system:unfiled](#)

by [anurag\\_bhd](#) to [howto](#) [flash](#) [bios](#)

by [pramodc84](#) to [bios](#) [hardware](#) [guide](#)

### common tags

[cloud](#) | [list](#)

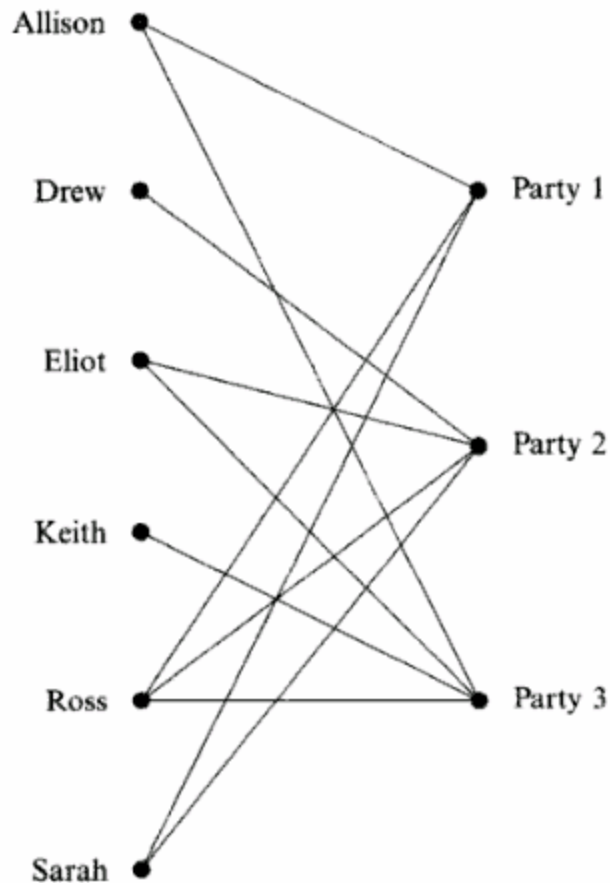
[article](#) [articles](#) [bios](#) [computer](#) [computers](#) [diagnostic](#)  
[flash](#) [geek](#) [guide](#) [hacking](#) [hardware](#) [howto](#)  
[lifehacker](#) [pc](#) [reference](#) [software](#) [tech](#) [technology](#) [tread](#)  
[tutorial](#) [tutorials](#) [utilities](#) [windows](#)

**M**

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# Representing Two-Mode Networks As Two Mode Sociomatrices

[Wasserman Faust 1994]



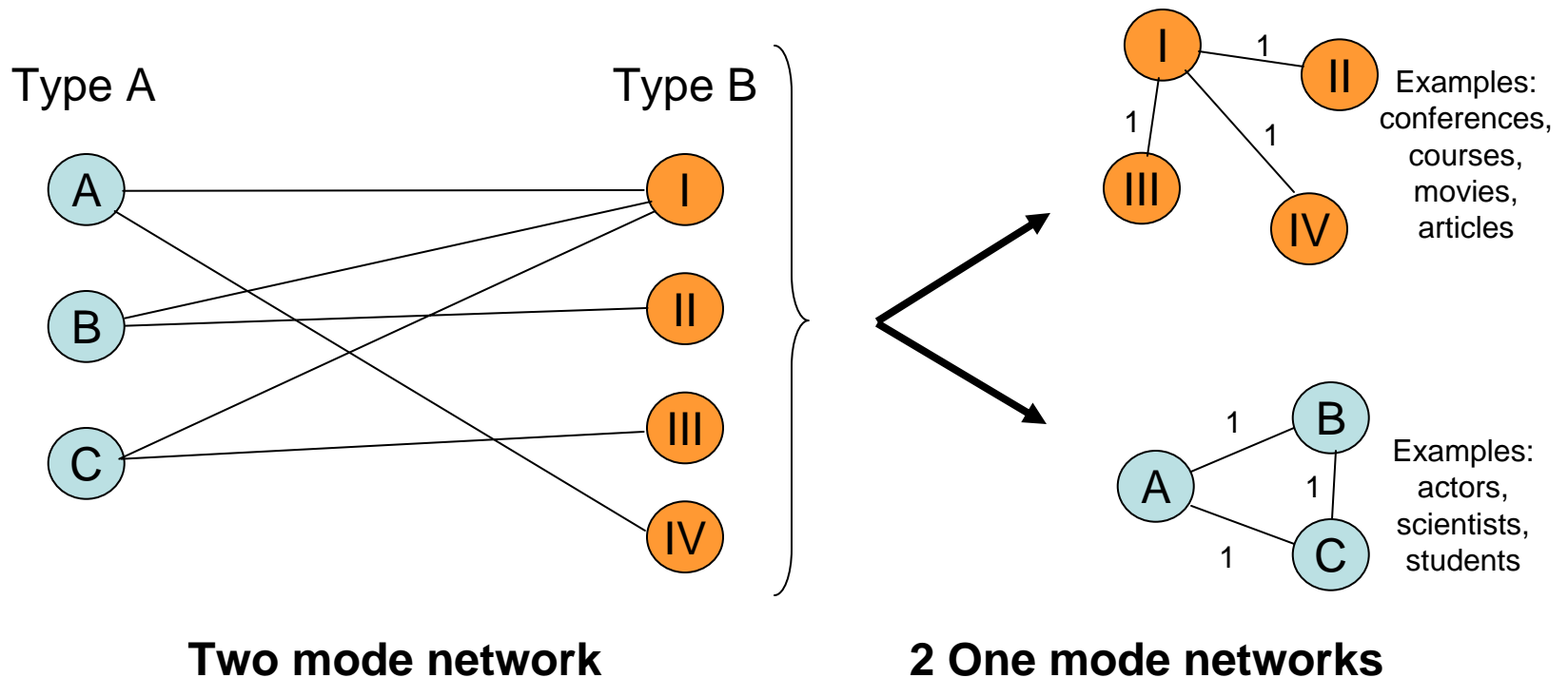
General form: 
$$\begin{pmatrix} 0 & A \\ A' & 0 \end{pmatrix}$$

	Allison	Drew	Eliot	Keith	Ross	Sarah	Party 1	Party 2	Party 3
Allison	-	0	0	0	0	0	1	0	1
Drew	0	-	0	0	0	0	0	1	0
Eliot	0	0	-	0	0	0	0	1	1
Keith	0	0	0	-	0	0	0	0	1
Ross	0	0	0	0	-	0	1	1	1
Sarah	0	0	0	0	0	-	1	1	0
Party 1	1	0	0	0	1	1	-	0	0
Party 2	0	1	1	0	1	1	0	-	0
Party 3	1	0	1	1	1	0	0	0	-

Fig. 8.3. Sociomatrix for the bipartite graph of six children and three parties

# Two Mode Networks and One Mode Networks

- **Folding** is the process of transforming two mode networks into one mode networks
  - Also referred to as: **T, L projections** [Latapy et al 2006]
- Each two mode network can be folded into 2 one mode networks





# Transforming Two Mode Networks into One Mode Networks

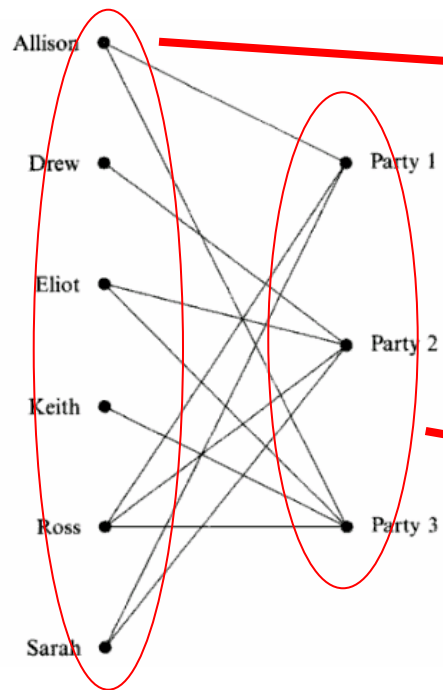
[Wasserman Faust 1994]

- Two one mode (or co-affiliation) networks (folded from the children/party affiliation network)

$$M_P = M_{PC} * M_{PC}'$$

C...Children

P...Party



	$n_1$	$n_2$	$n_3$	$n_4$	$n_5$	$n_6$
$n_1$	2	0	1	1	2	1
$n_2$	0	1	1	0	1	1
$n_3$	1	1	2	1	2	1
$n_4$	1	0	1	1	1	0
$n_5$	2	1	2	1	3	2
$n_6$	1	1	1	0	2	2

Fig. 8.5. Actor co-membership matrix for the six children

	$m_1$	$m_2$	$m_3$
$m_1$	3	2	2
$m_2$	2	4	2
$m_3$	2	2	4

Fig. 8.6. Event overlap matrix for the three parties

[Images taken from Wasserman Faust 1994]

# Transforming Two Mode Networks into One Mode Networks

[Wasserman Faust 1994]

'Falksches Schema'

		-1	0
	*	+	2
	*	+	=
2	3	4	-9
1	-7	-15	21
-2	5	12	-15

$$M_P = M_{PC} * M_{PC}'$$

C...Children

P...Party

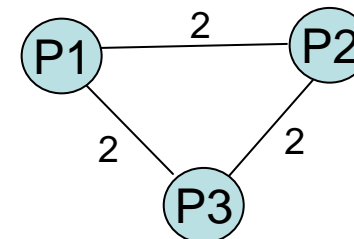
	Allison	Drew	Eliot	Keith	Ross	Sarah
Party 1	1	0	0	0	1	1
Party 2	0	1	1	0	1	1
Party 3	1	0	1	1	1	0

\*

	Party 1	Party 2	Party 3
Allison	1	0	1
Drew	0	1	0
Eliot	0	1	1
Keith	0	0	1
Ross	1	1	1
Sarah	1	1	0

=

	Party 1	Party 2	Party 3
Party 1	3	2	2
Party 2	2	4	2
Party 3	2	2	4

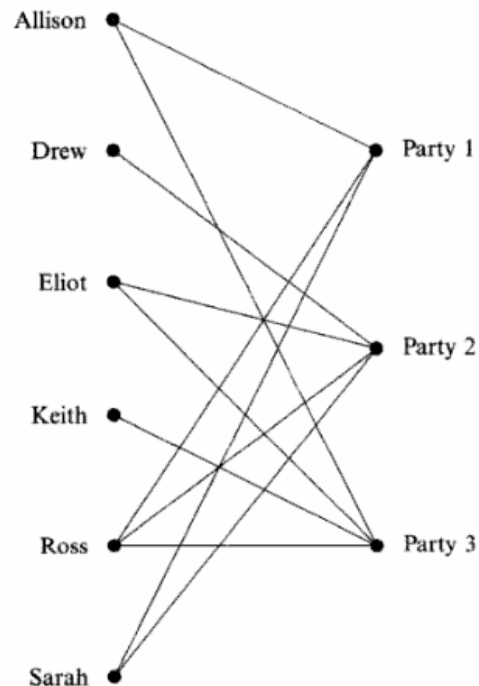


Output:  
Weighted  
regular graph

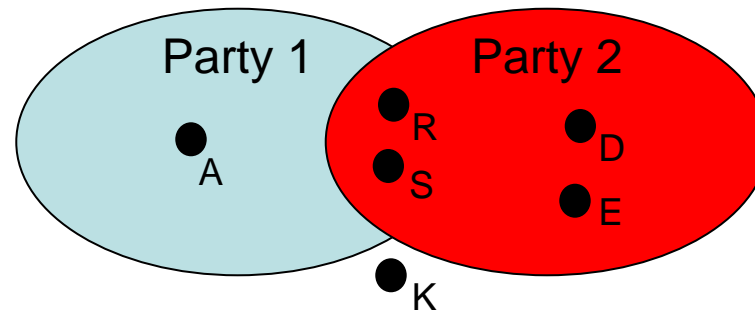
# Transforming Two Mode Networks into One Mode Networks

[Wasserman Faust 1994]

Bi-partite representation  
(entire bipartite graph)



Set theoretic interpretation (P1, P2)



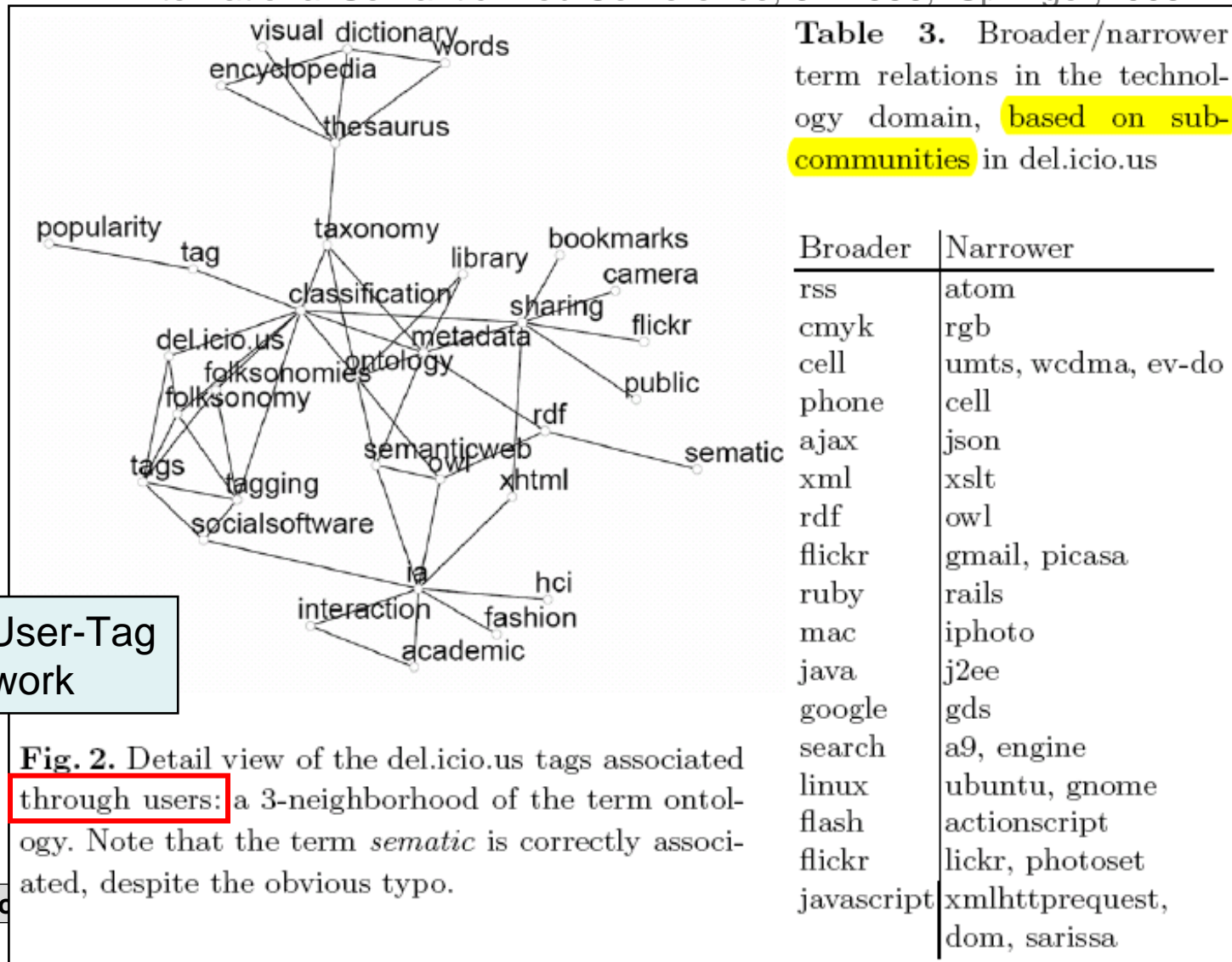
Vector interpretation (P1, P2)

Allison
Drew
Eliot
Keith
Ross
Sarah

Party 1	Party 2
1	0
0	1
0	1
0	0
1	1
1	1

# Broader / narrower term relations

P. Mika. Ontologies Are Us: A Unified Model of Social Networks and Semantics.  
 International Semantic Web Conference, 522-536, Springer, 2005



Folded User-Tag network

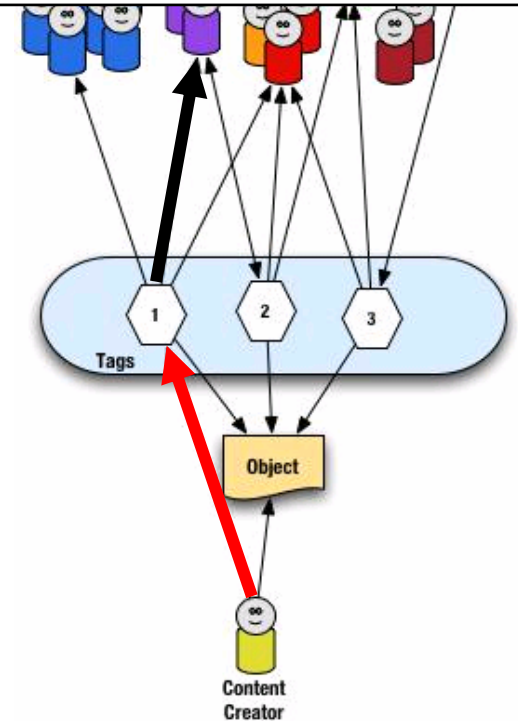
**Fig. 2.** Detail view of the del.icio.us tags associated through users: a 3-neighborhood of the term ontology. Note that the term *sematic* is correctly associated, despite the obvious typo.

# Types of Folksonom

[Thomas Vander Wal <http://www.personalinfocloud.com/20>

## Narrow folksonomies

- tagging objects that are **not easily searchable** or have no other means of using text to describe or find the object
- done by **one or a few people** providing tags that the person uses to get back to that information.
- The tags, unlike in the broad folksonomy, are **singular in nature**
- tags are **directly associated with the object**.
- Example: Flickr

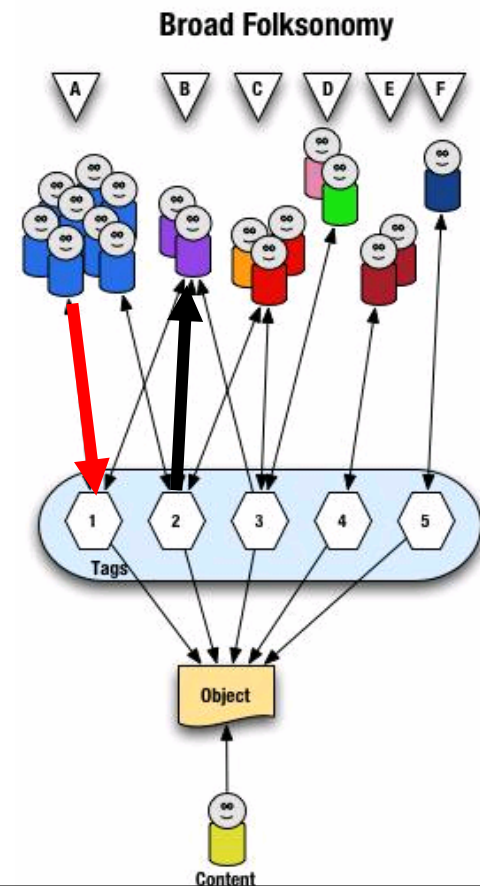


# Types of Folksonomies

[Thomas Vander Wal [http://www.personalinfocloud.com/2005/02/explaining\\_and\\_.html](http://www.personalinfocloud.com/2005/02/explaining_and_.html)]

## Broad folksonomies

- many people **tagging the same object** and
- every person can **tag the object with their own tags** in their own vocabulary
- Example: Social bookmarking
- The broad folksonomy provides a means to see trends in how a broad range of people are tagging one object.
- power law curves and long-tail are relevant phenomena



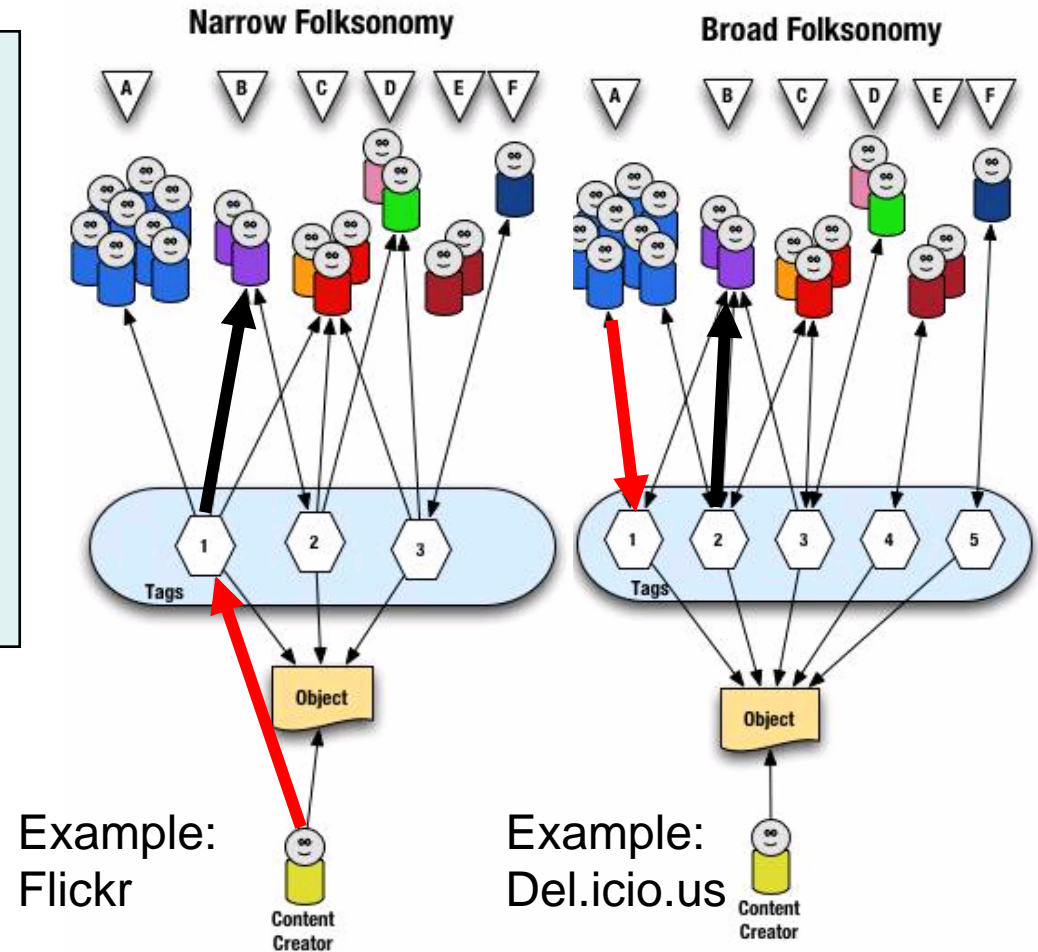
**The Top 20 Ways to Come Up With Amazing Ideas** [save this](#) **144** people  
 first posted by BlogNavigator | [creativity](#) | [ideas](#) | [productivity](#) | [writing](#) | [lifehacks](#) | [tags](#)  
 Del.icio.us

# Types of Folksonomies

[Thomas Vander Wal [http://www.personalinfocloud.com/2005/02/explaining\\_and\\_.html](http://www.personalinfocloud.com/2005/02/explaining_and_.html)]

## Differences

- Number of people tagging a single object
- Narrow folksonomies are more sparse
- Purpose
- Narrow ones allow for enhanced metadata for an object



# Tagging

- Metadata **at large**, finally!
  - User generated data at large scale
- **Not standardized**, because no meta-meta information
  - Does „BernersLee“ refer to *DC creator* or *DC subject* [Dublin Core]?
- **useful**, because intrinsically motivated
  - Useful to somebody: users tag for a reason

Q: What are the **motivations** and **intentions** of users when **tagging resources**?



# Agenda

## Structure of this presentation:

1. Relating Content (of Resources) and Intent (of Users) via Tagging
2. Detecting User Motivation in Tagging Systems

# A Simple Model of Folksonomies

**But:**

## Variability in the set of Users U

- at least four user roles including 1) resource author, 2) resource collector 3) indexer or tagger and 4) searcher [Voss 2007].

## Variability in the set of Tags T

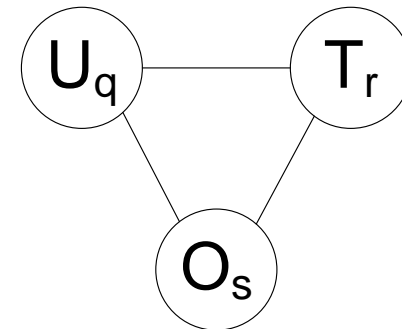
- For example, types of tags include: 1) Identifying what a resource is about 2) Identifying what it is 3) Identifying who owns it 4) Refining categories 5) Identifying qualities or characteristics 6) Self reference 7) Task organizing [Golder und Hubermann 2005]

## Variability in the set of Objects O

- Different „Objects of sociality”: movies (youtube), URLs (delicious), photos (flickr), music (last.fm), etc..

$$(F \subseteq U \times T \times O)$$

$$F \subseteq U_q \times T_r \times O_s$$



Extended Model of Folksonomies

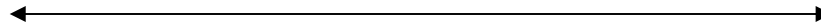
q...types of users  
r...types of tags  
s...types of objects

# Motivating Example: Content vs. Intent

## Intent

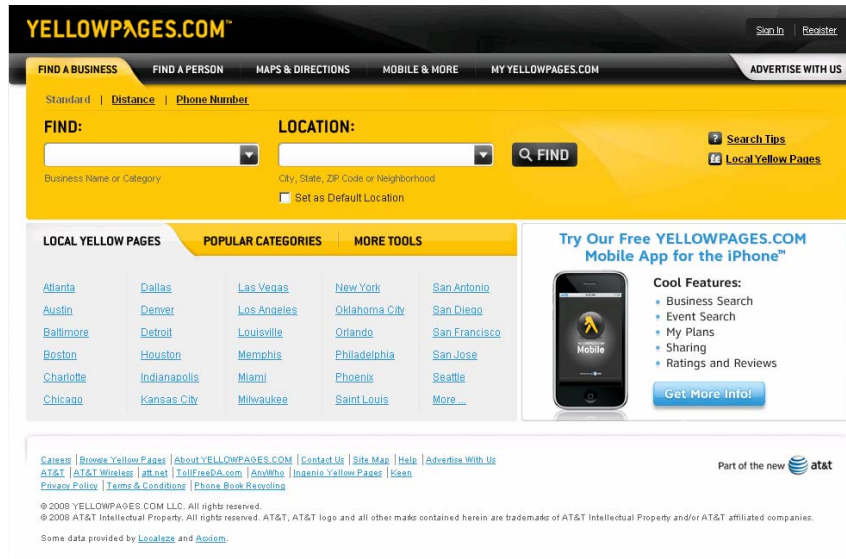
(What goals it aims at / helps to achieve)

- find a physician
- organize a high-school reunion
- contact an old friend
- organize a marketing campaign
- find others who share the same family name
- find my way to an address
- ...



## Content

(What it is)



Tags	
Top 10 Tags	
directory	158
yellowpages	130
reference	118
phone	112
search	109
telephone	74
business	64
directories	47
yellow	38
pages	33

Websites, Blogs, Images, Web Services, ...

What factors influence the type of tags being used?

**Terminological and contextual mismatch: While search queries tend to express user intent, tags tend to express aspects of content (94% According to one of today's talks)**

## CIKM'08 Papers ...

### on Search Intent

- **Understanding the Relationship between Searchers' Queries and Information Goals**, D. Downey, D. Liebling, S. Dumais
- **Matching Task Profiles and User Needs in Personalized Web Search**, J. Luxenburger, S. Elbassuoni, G. Weikum
- **Beyond the Session Timeout: Automatic Hierarchical Segmentation of Search Topics in Query Logs**, R. Jones, K. Klinkner
- **Keynote** B. Croft „Long Queries / Intent statements“

### on Tagging Content

- **Can All Tags Be Used for Search?**, K. Bischoff, C. Firan, W. Nejdl, R. Paiu
- **Social Tags: Meanings and Suggestions**, F. Suchanek, M. Vojnovic, D. Gunawardena
- **Tag-Based Filtering for Personalized Bookmark Recommendations**, P. K. Vatturi, W. Geyer, C. Dugan, M. Muller, B. Brownholtz [Poster]
- + related work in WWW, Hypertext, etc (see paper)

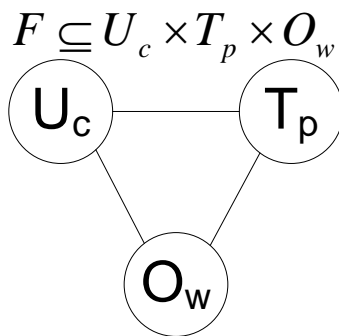
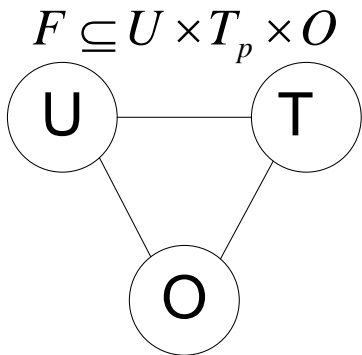
**Observation:** terms used to craft search queries are usually **different** from the terms that are used to tag resources in social media [Heyman 2008]

Why  
?

## Exploratory Research Questions

1. **Feasibility:** Would users assign meaningful purpose tags?
2. **Accuracy:** Do purpose tags accurately reflect plausible purposes of resources?
3. **Utility:** Can purpose tagging improve search in social software?
4. **Coverage:** Can purpose tags expand the vocabulary of existing tags?
5. **Meaning:** Are purpose tag graphs meaningful?

# An Intentional Social Bookmarking Prototype



Intentional Social Bookmarking

c...consumer  
p...purpose  
w...websites

**Goal-based S**

**The Goal-Cloud**

The page at <http://www.deezer.com> says:

This Page helped me to ...

OK Cancel

**Public Goals**

public search All

- get latest Knowledge Management news
- ...find bars, restaurants and cafés in Graz.
- avoid the Euro 2008 in Graz
- buy a car
- buy a train ticket online
- cycling in graz
- develop a drupal modul
- do java performance evaluations
- evaluate webgraph
- figure out the weather
- find a cinema timetable
- find a dentist in Graz
- find a flight from graz
- find a garage in graz
- find a good restaurant in graz
- find a pharmacy in graz
- find a photo of the murinsel
- find a place located in Graz
- find a relevant medical

**News Ticker** Resources

- Short Introduction
- Take part in our Case-Study
- All Resources

**To Join the community: Please Register by using the sidebar**

**This community provides 147 URL's for 98 goals**

[avoid the Euro 2008 in Graz] [find running sushi restaurants in graz] [second hand gewand kaufen] [get educated in graz] [learn about four elements festival] [learn about graz] [find english movies to watch in graz] [find a place located in Graz] [Watch a movie in Graz] [buy a car] [cycling in graz] [find public viewing places in Graz] [swimming in graz] [find events about Graz] [find a pharmacy in graz] [watch the Euro 2008 in Graz] [find asian food in graz] [get graz news] [wo und wie ein kind taufen lassen] [find events in Graz]

**Latest added Goals**

- [find running sushi restaurants in graz]
- [find about weather in graz]
- [find sights in graz]
- [learn about graz]
- [find out dates for cityskating]
- [watch video about the schlossberg]
- [find location of Royal English Cinema]

Haselsberger Andreas; Ruggenthaler Christoph; [Univ. Ass. Strohmaier Markus @ kmi.tugraz.at](mailto:Univ.Ass.StrohmaierMarkus@kmi.tugraz.at)

Our [Firefox Plugin Version 2.1](#) is out now!

with students Andreas Haselsberger and Christoph Ruggenthaler

## Data Collection

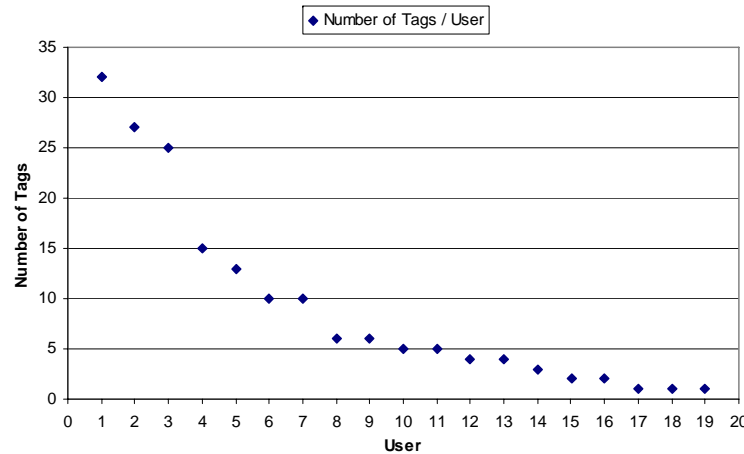
- **Duration:** 2 weeks
- **Population:** Computer graduate students and employees of a research organization
- **Task:** Bookmark resources related to „Graz“

	<b>URIs</b>	<b>Tags</b>	<b>Users</b>
<b>Dataset A</b> (Purpose Tagging)	123	75	19
<b>Dataset B</b> (del.icio.us)	36	849	2801

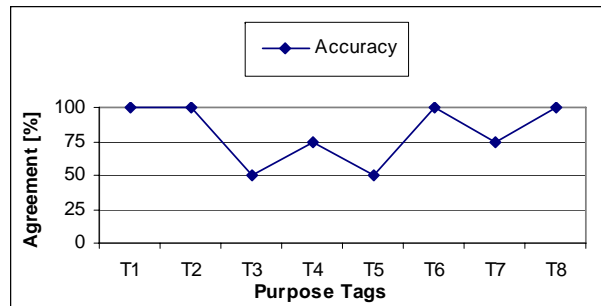
**Table 1 Characteristics of Dataset A and B**

# Purpose Tagging

## 1. Would Users Assign Purpose Tags?



## 2. Do Purpose Tags Accurately Reflect Plausible Purposes of Resources?





# Purpose Tagging

## 3. Can Purpose Tagging Improve Search in Social Software?

[find a place located in Graz] [find asian food in graz] [learn about graz] [get educated in graz] [avoid the Euro 2008 in Graz] [find a pharmacy in graz] [cycling in graz] [find public viewing places in Graz] [get latest Knowledge Management news] [find english movies to watch in graz] [swimming in graz] [second hand gewand kaufen] [watch the Euro 2008 in Graz] [find events in Graz] [buy a car] [Watch a movie in Graz] [find running sushi restaurants in graz] [find events about Graz] [learn about four elements festival] [get graz news]

Figure 5 Purpose Tag Cloud Generated from Dataset A

**Tag Cloud: Popular**

.net 2008 3d advertising ajax and animation api apple architec  
 blogging blogs book books browser business car cms code  
 converter cooking cool css culture data database **design**  
 download downloads drupal ebooks economics education e  
 fashion fic film finance firefox flash flex flickr food forum fre  
 geek google government graphics green guide hardware health  
 humor icons illustration images imported information inspiration

delicious

# Purpose Tagging

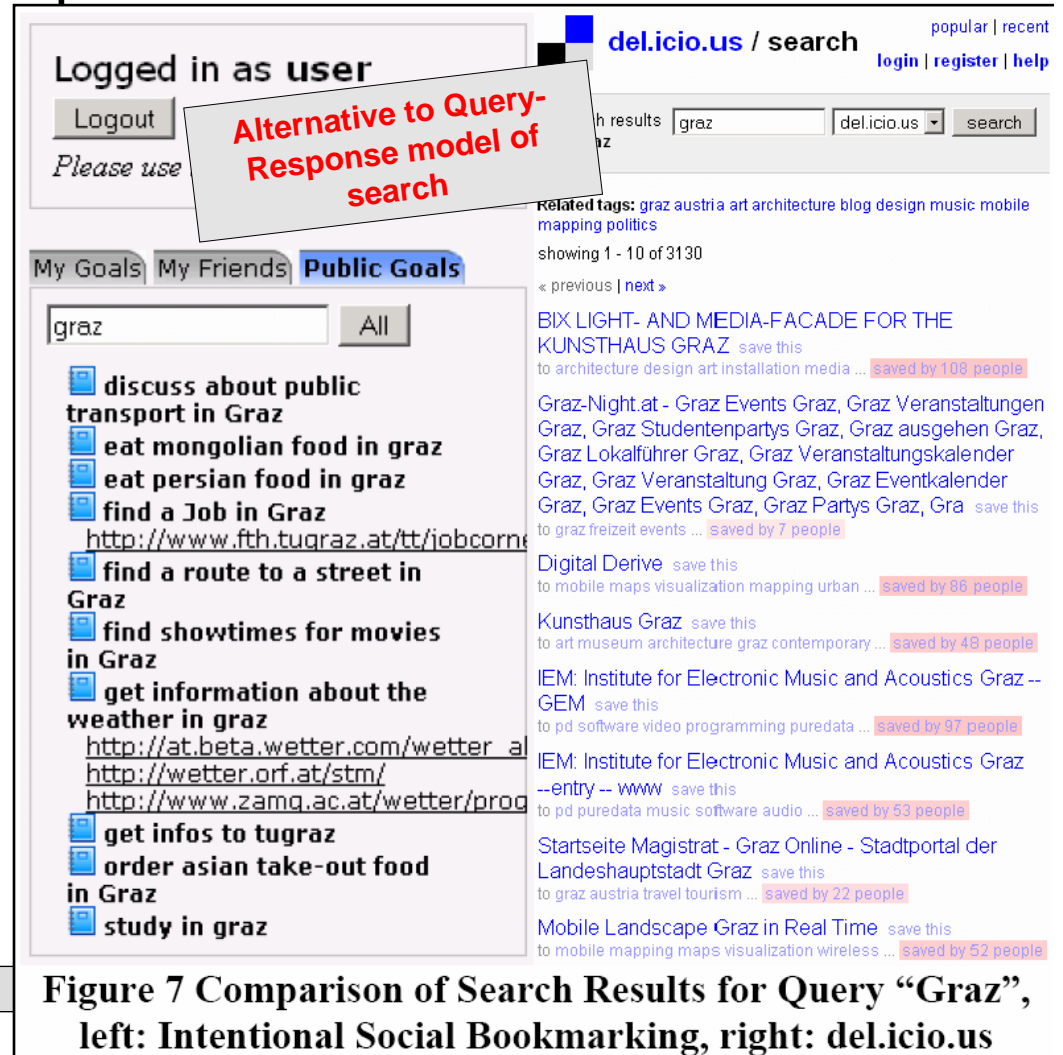
## 3. Can Purpose Tagging Improve Search in Social Software?

### Four users / four search tasks each:

- “find an overview of restaurants in Graz”
- “get a weather forecast for Graz”
- “find information about local events in Graz”
- “find information about movie showtimes in Graz”

### Observations (Audio/Screen casts):

- Purpose tags used to narrow search / disambiguate
- Users „felt guided“
- Purpose tags „felt natural“ to accomplish search goals
- easier to assess relevance
- One user felt a particular purpose tag was misleading
- Overspecified queries in delicious search



Logged in as user del.icio.us / search popular | recent  
Logout Please use login | register | help

Alternative to Query-Response model of search

My Goals My Friends **Public Goals**

graz All

- discuss about public transport in Graz
- eat mongolian food in graz
- eat persian food in graz
- find a Job in Graz  
http://www.fth.tugraz.at/tt/jobcorn
- find a route to a street in Graz
- find showtimes for movies in Graz
- get information about the weather in graz  
http://at.beta.wetter.com/wetter\_a  
http://wetter.orf.at/stm/  
http://www.zamg.ac.at/wetter/prog
- get infos to tugraz
- order asian take-out food in Graz
- study in graz

Showing 1 - 10 of 3130  
 < previous | next >

BIX LIGHT- AND MEDIA-FACADE FOR THE KUNSTHAUS GRAZ save this  
 to architecture design art installation media ... saved by 108 people

Graz-Night.at - Graz Events Graz, Graz Veranstaltungen Graz, Graz Studentenpartys Graz, Graz ausgehen Graz, Graz Lokalführer Graz, Graz Veranstaltungskalender Graz, Graz Veranstaltung Graz, Graz Eventkalender Graz, Graz Events Graz, Graz Partys Graz, Gra save this  
 to graz freizeit events ... saved by 7 people

Digital Derive save this  
 to mobile maps visualization mapping urban ... saved by 86 people

Kunsthau Graz save this  
 to art museum architecture graz contemporary ... saved by 48 people

IEM: Institute for Electronic Music and Acoustics Graz -- GEM save this  
 to pd software video programming puredata ... saved by 97 people

IEM: Institute for Electronic Music and Acoustics Graz --entry -- www save this  
 to pd puredata music software audio ... saved by 53 people

Startseite Magistrat - Graz Online - Stadtportal der Landeshauptstadt Graz save this  
 to graz austria travel tourism ... saved by 22 people

Mobile Landscape Graz in Real Time save this  
 to mobile mapping maps visualization wireless ... saved by 52 people

Figure 7 Comparison of Search Results for Query “Graz”, left: Intentional Social Bookmarking, right: del.icio.us

# Purpose Tagging

## 4. Can Purpose Tags Expand the Vocabulary of Existing Tags?

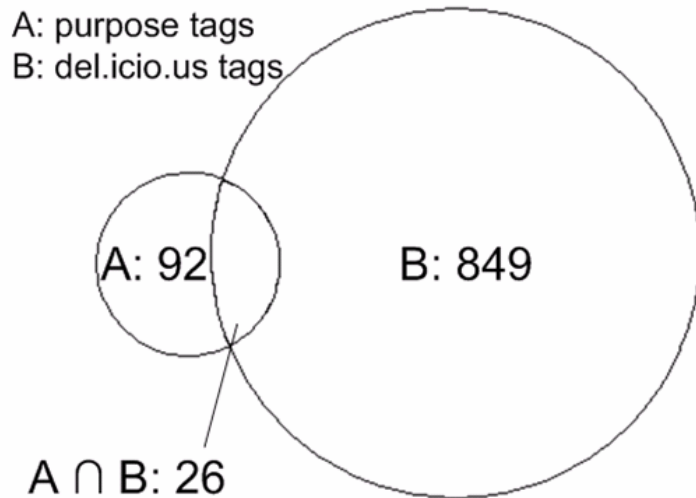


Figure 9 Vocabulary Overlap between Purpose Tags and Delicious Tags

new terms $A \setminus B$	overlap terms $A \cap B$
pharmacy, to, via, location, buy for, street, timetable, euro, where, asian, of, medical, more, results, facts, ticket, located, on, place, educated, transport, get, how, watch, offers learn, practitioner, map., climb specific, about, insight use, from, running swimming figure, dates, detailed, tourists., relevant, restaurants, find graz., airport, cityskating, b, news, a, at, into, the, learnpartner, in, know, dentist flight, new, schedule, overview, what, arrival, public, first, out	car, 2008, knowledge, technology, cycling, events, visit, online, em2008, friends, transport, sushi, weather, train, conference, attention, metadata, information, university, movie, graz, tu, cinema, program, food, management

Table 2  $A \setminus B$  and  $A \cap B$

**~72%** of the vocabulary of purpose tags was novel  
(created by 19 purpose tagging users vs. 2801 users of delicious)

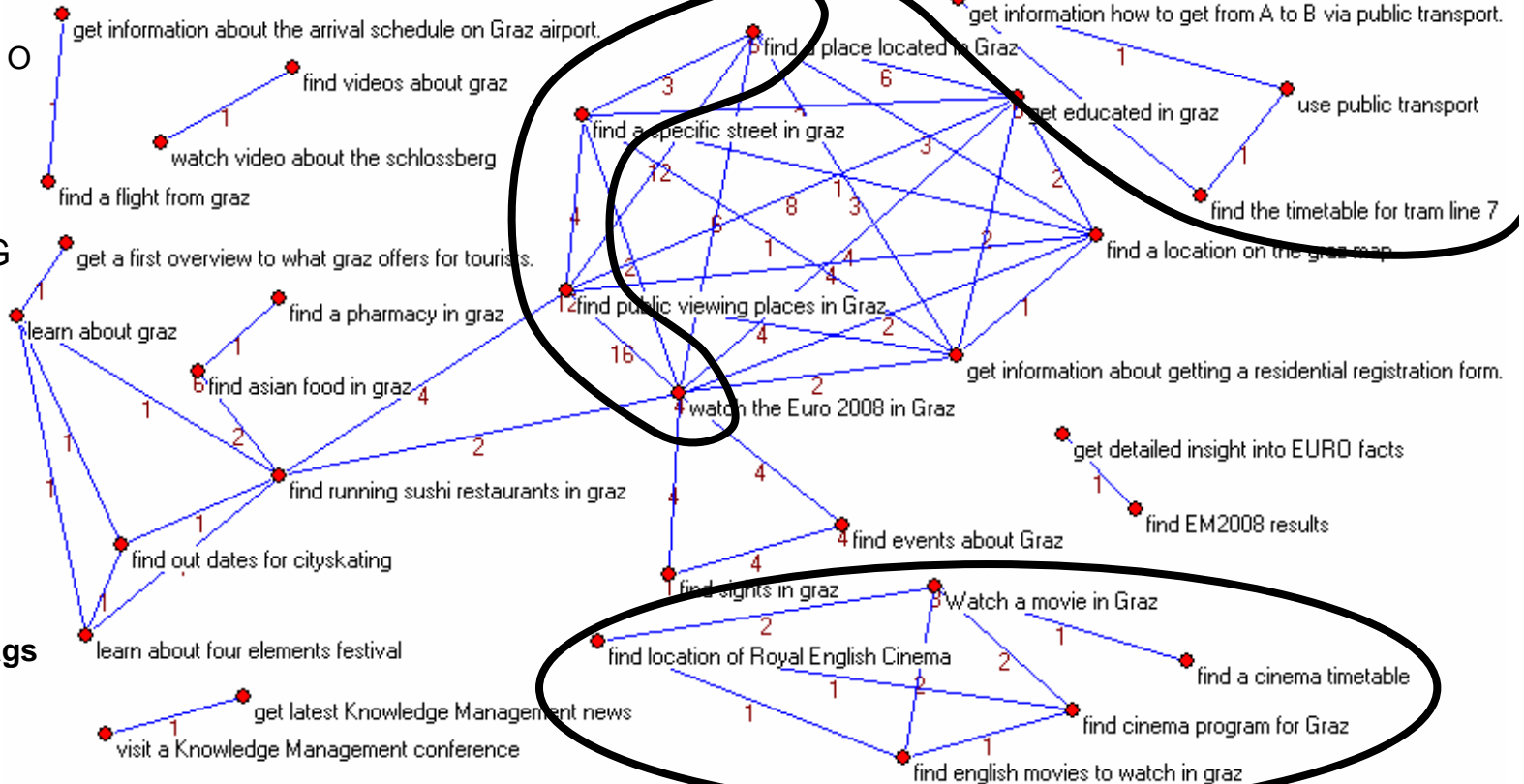
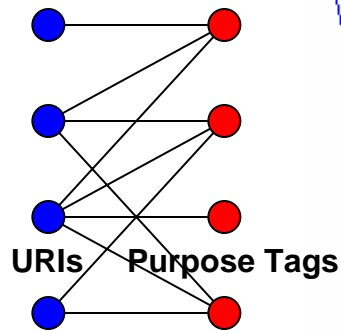
Example: „find a girlfriend“ for german version of facebook.com

# Purpose Tagging

## 5. Are Purpose Tag Graphs Meaningful?

Transforming the tripartite graph U, T, O into bipartite graphs UO, OT and UT.

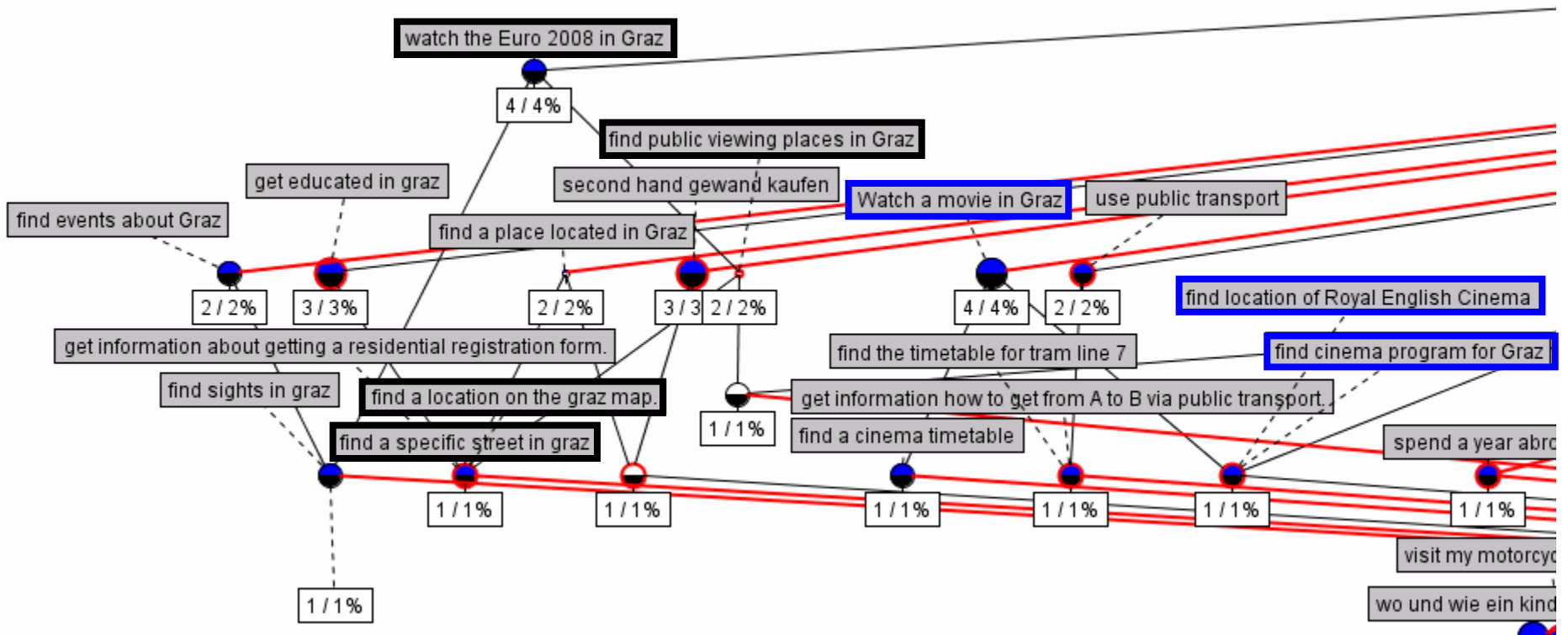
Given  $G(OT)$   
Calculate  $T^* = G^T G$



# Purpose Tagging

## 5. Are Purpose Tag Graphs Meaningful?

Partially Ordered Sets over a Bi-Partite Graph



Based on Formal Concept Analysis [Wille 2005]  
visualized with ConExp

# Applications

# Relating Content Tags and Intent Tags

## AOL Search Query Log based Intent Prediction

Enter your short query



[Options](#)

Christian Körner

### RESULTS

Web Images Maps News Groups Gmail more Sign in

Google college Search Advanced Search Preferences

Web Results 1 - 100 of about 763,000,000 for college [define]

Try your search on [Yahoo](#), [Ask](#), [AllTheWeb](#), [Live](#), [Lycos](#), [Technorati](#), [Feedster](#), [Vindex](#), [Altavista](#), [A9](#), [GoodSearch](#)

Related searches [college girls](#) [college humour](#) [college search](#)

- College (2008)**  
Directed by Deb Hagan. With Drake Bell, Andrew Caldwell, Andree Moss. A wild in store for three high school seniors who visit a local college ...  
[www.imdb.com/title/tt0844671/](#) - 51k - [Cached](#) - [Similar pages](#) - [Filter](#) - [History](#)
- College - Wikipedia, the free encyclopedia**  
**College** (Latin collegium) is a term most often used today to denote an educational institution. More broadly, it can be the name of any group of colleagues ...  
[en.wikipedia.org/wiki/College](#) - 126k - [Cached](#) - [Similar pages](#) - [Filter](#) - [History](#)
- College Entrance Examination Board**  
Get connected to your college. Find official college planning and preparation tools to help you succeed. Visit the College Board website - your inside ...  
[www.collegeboard.com/](#) - 8k - [Cached](#) - [Similar pages](#) - [Filter](#) - [History](#)
- Best Colleges - Education - US News and World Report**  
U.S. News has collected data from more than 1400 colleges to bring you this year's rankings. Start by selecting a discipline for access to our top program ...  
[colleges.usnews.rankingsandreviews.com/college](#) - 33k - [Cached](#) - [Similar pages](#) - [Filter](#) - [History](#)
- College - Wikipedia** - [ [Translate this page](#) ]  
Als **College** (Latein collegium academiae, Studiengemeinschaft) bezeichnet man Bildungseinrichtungen unterschiedlichen Typs in Ländern, in denen Englisch die ...  
[de.wikipedia.org/wiki/College](#) - 33k - [Cached](#) - [Similar pages](#) - [Filter](#) - [History](#)
- COLLEGE Official Website**  
An outrageous new comedy that follows in the classic footsteps of 'Animal House,' 'American Pie' and 'Old School,' COLLEGE is the story of three high school ...  
[www.college-themovie.com/](#) - 5k - [Cached](#) - [Similar pages](#) - [Filter](#) - [History](#)
- College Humor**  
The best humor site on the internet. Funny videos, funny pictures, jokes, and original comedy videos.  
[www.collegehumor.com/](#) - 89k - [Cached](#) - [Similar pages](#) - [Filter](#) - [History](#)

(yet untested) hypothesis:  
The shorter the query, the better our algorithms work

- paying for college (1.5833333333333333) - G: 0.25 L: 0.3333333333333333 I: 1.0
- finding right college (1.5833333333333333) - G: 0.25 L: 0.3333333333333333 I: 1.0
- saving for college (1.5833333333333333) - G: 0.25 L: 0.3333333333333333 I: 1.0
- buy college textbooks (1.5833333333333333) - G: 0.25 L: 0.3333333333333333 I: 1.0
- searching for college students (1.5) - G: 0.25 L: 0.25 I: 1.0
- choosing the right college (1.5) - G: 0.25 L: 0.25 I: 1.0
- hazing on college campuses (1.5) - G: 0.25 L: 0.25 I: 1.0
- apply to university college (1.5) - G: 0.25 L: 0.25 I: 1.0
- sell your college textbooks (1.5) - G: 0.25 L: 0.25 I: 1.0
- marketing new college courses (1.5) - G: 0.25 L: 0.25 I: 1.0
- budgeting for college kids (1.5) - G: 0.25 L: 0.25 I: 1.0
- leaving for college tips (1.5) - G: 0.25 L: 0.25 I: 1.0
- college and finding jobs (1.5) - G: 0.25 L: 0.25 I: 1.0
- replace my college ring (1.5) - G: 0.25 L: 0.25 I: 1.0
- jobs cleaning bridgewater college (1.5) - G: 0.25 L: 0.25 I: 1.0
- learning disabled college programs (1.5) - G: 0.25 L: 0.25 I: 1.0
- find holmes community college (1.5) - G: 0.25 L: 0.25 I: 1.0
- find hunter college library (1.5) - G: 0.25 L: 0.25 I: 1.0
- dealing with college romances (1.5) - G: 0.25 L: 0.25 I: 1.0
- saving for childrens college (1.5) - G: 0.25 L: 0.25 I: 1.0
- finding the perfect college (1.5) - G: 0.25 L: 0.25 I: 1.0
- find college graduation gifts (1.5) - G: 0.25 L: 0.25 I: 1.0
- dealing with college denial letters (1.45) - G: 0.25 L: 0.2 I: 1.0

Markus Strohmaier

## Conclusions

- More types of tags than currently studied
- Task-aware relevance
- Search result justification, Search intent estimation

### Outlook:

- Large scale controlled experiment (~ 4.000 active users)
  - Modifying the tagging process in a social bookmarking system for scientists ( **BibSonomy** )
  - User acceptance
  - Comparison of traditional tags vs. purpose tags
- Delicious study
  - Existence and nature of purpose tags in an existing bookmarking system



# **Detecting User Motivation of Tagging**

## Why do tagging systems work?

This was topic of a panel at CHI 2006, following conclusions were drawn:

Tagging has a benefit for the user

- Similar to bookmarking, integrated apps
- Benefit of accessibility from everywhere in the internet

Tagging allows social interaction

- Connecting a user to a community through tags
- People can subscribe your stream

# Benefits of Tagging

## Tags are useful for retrieval

- Synonyms and typos vanish in the mass of tags
- Communities can retrieve “their” stuff (e.g. by special tag)

## Tagging Systems have a low participation barrier

- Apps are easy to use, intuitive, responsive
- Free text is used to do the tagging
- Requires no previous considerations & training

## Categorization vs. Description

- **Categorization:**

- Users who are motivated by Categorization engage in tagging because they want to construct and maintain a navigational aid to the resources (URLs, photos, etc) being tagged.
- Resources are assigned to tags whenever they share some common characteristic important to the mental model of the user (e.g. ‘family photos’, ‘trip to Vienna’ or ‘favorite list of URLs’).

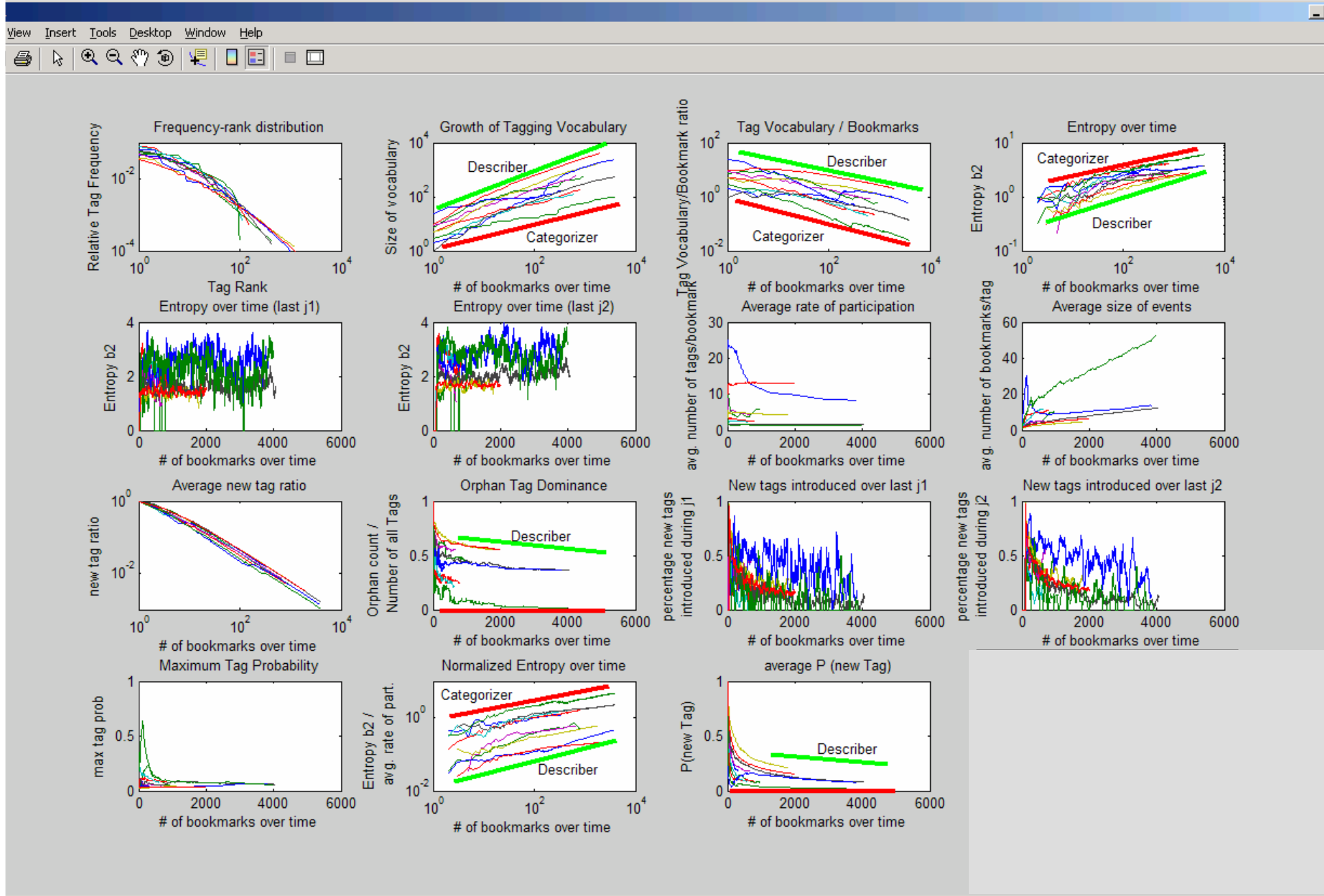
- **Description:**

- Users who are motivated by Description engage in tagging because they want to accurately and precisely describe the resources being tagged.
- Because the tags assigned are very close to the content of the resources, they can act as suitable facilitators for description and *searching*.

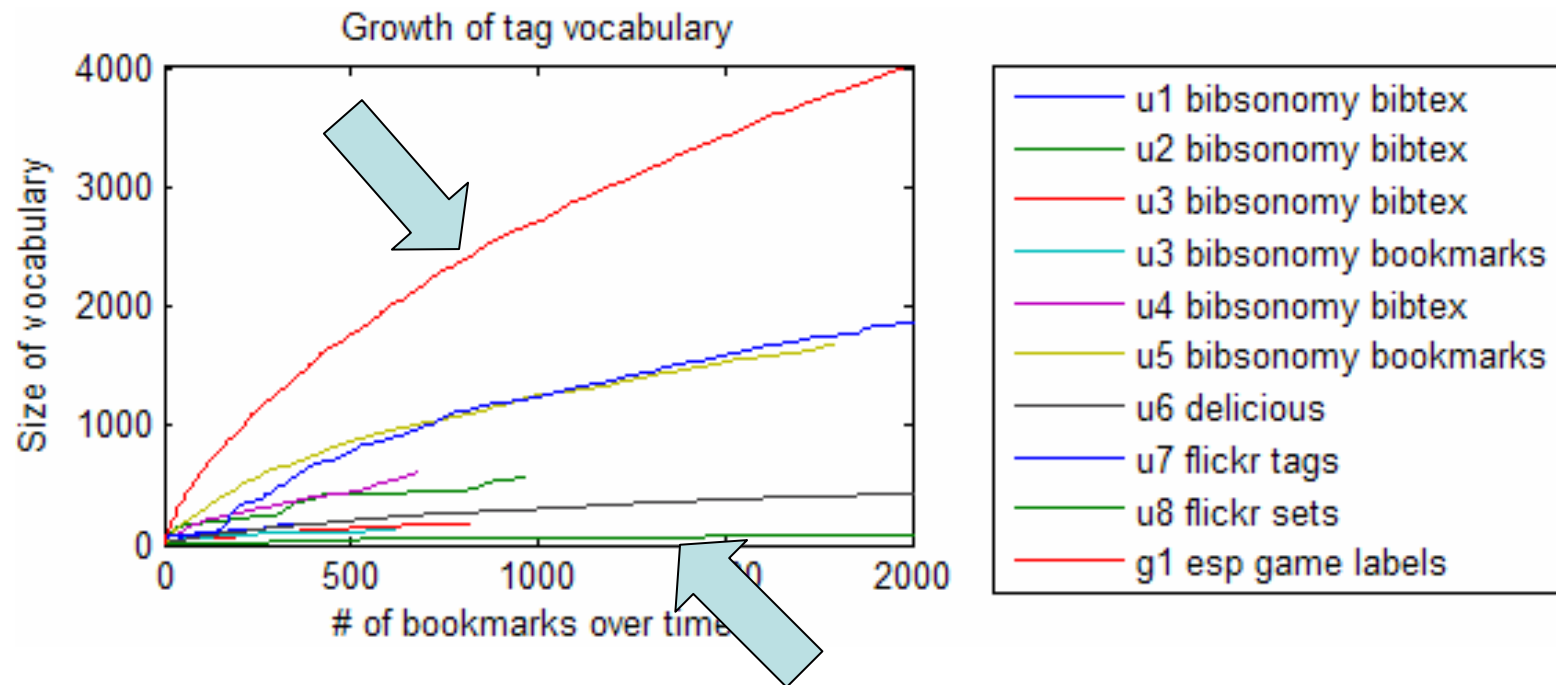
# Detecting User Motivation

## Potential Metrics:

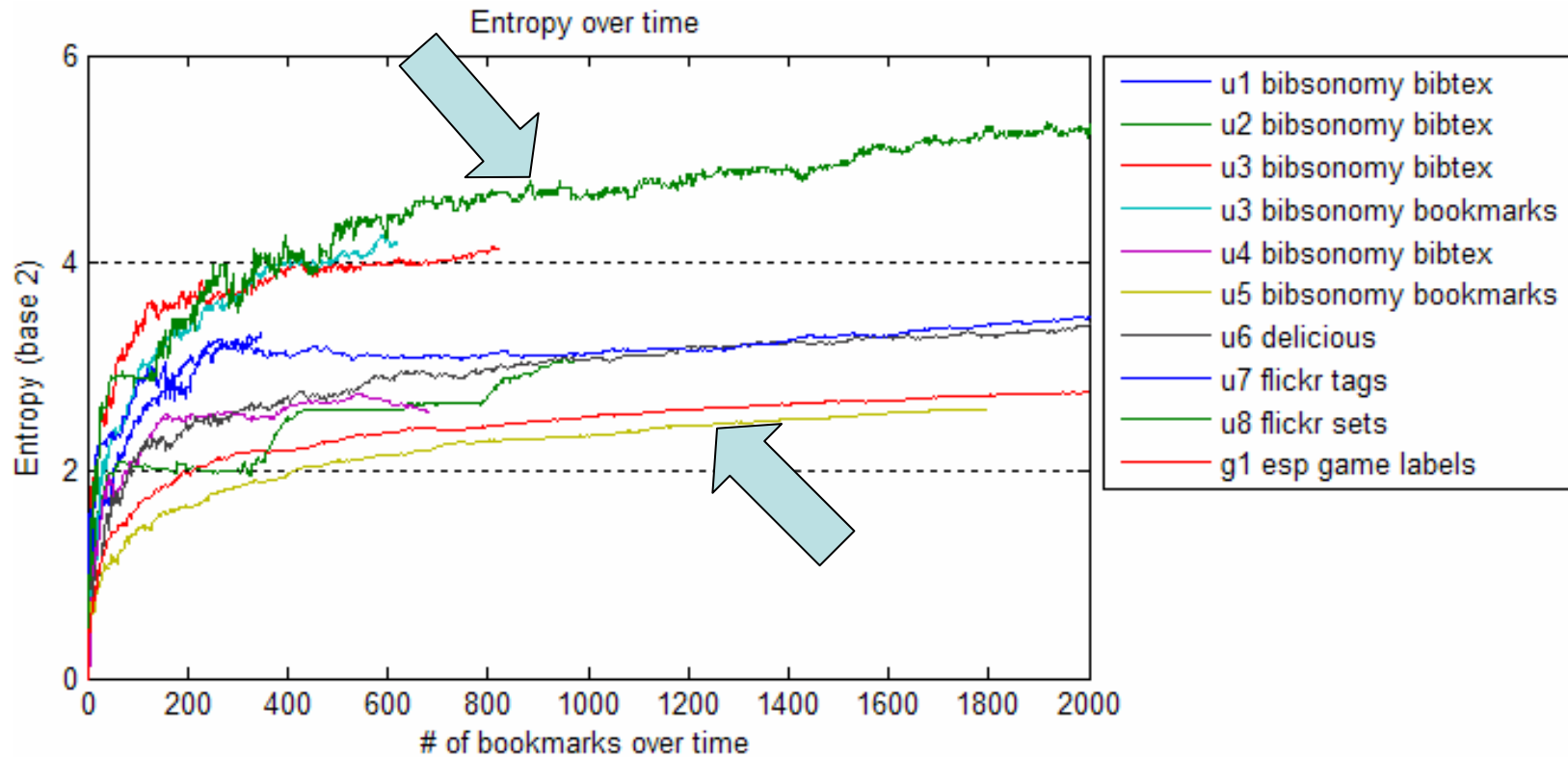
- Tag Vocabulary size
- Tag Entropy
- Percentage of Tag Orphans
- Tag Overlap



# Preliminary Results: Vocabulary Size

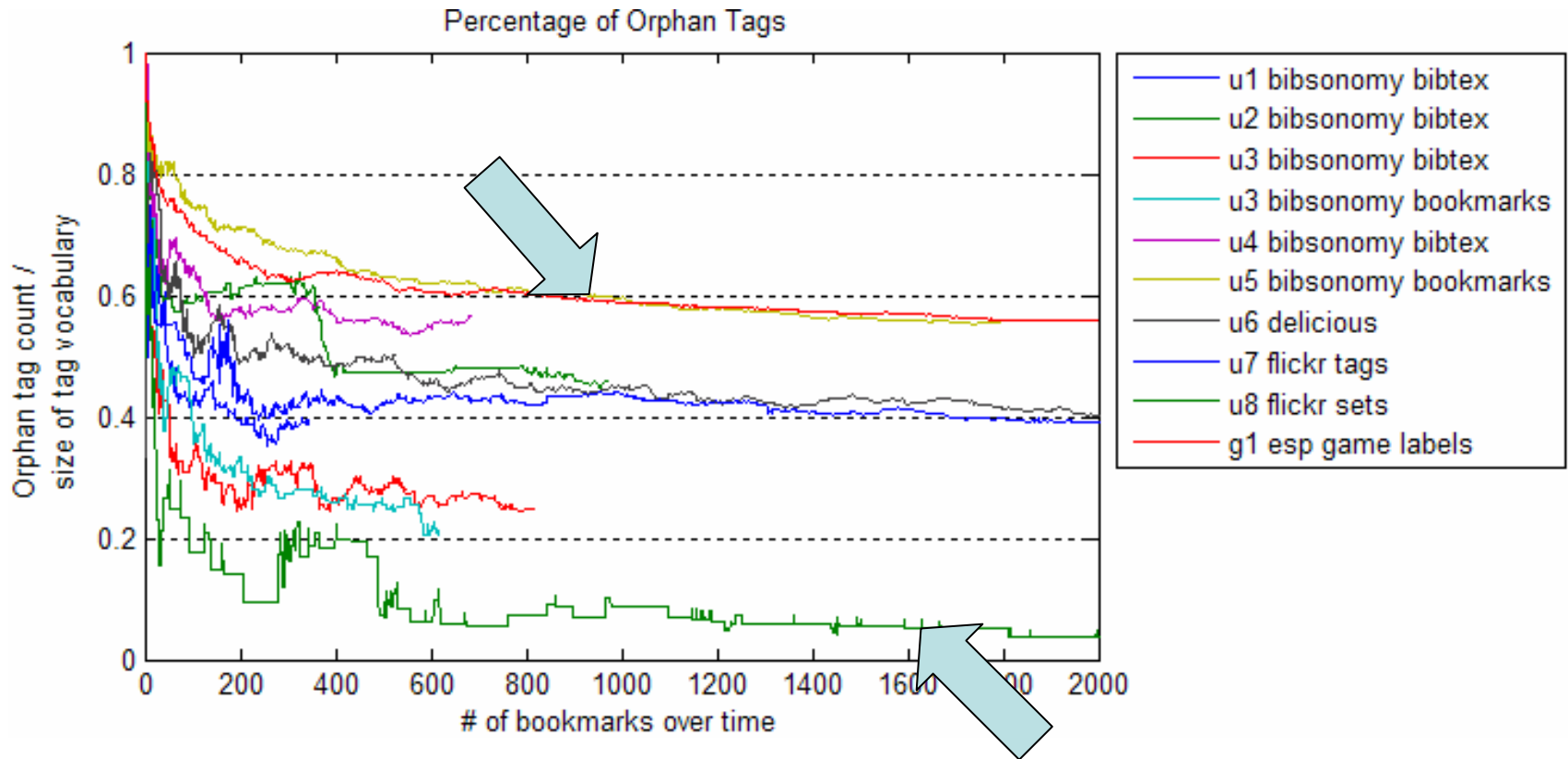


# Preliminary Results: Vocabulary Size





# Preliminary Results: Tag Entropy



## Categorization vs. Description

- **Implications and Relevance:**
  - *Tag Recommender Systems:*
    - Assuming that a user is a “Categorizer”, he will more likely reject tags that are recommended from a larger user population because he is primarily interested in constructing and maintaining “her” individual tag vocabulary.
  - *Search:*
    - Tags produced by “Describers” are more likely to be helpful for search and retrieval because they focus on the content of resources, where tags produced by “Categorizers” focus on their mental model. Tags by categorizers thus are more *subjective*, whereas tags by describers are more *objective*.
  - *Knowledge Acquisition:*
    - A tagging system primarily populated by categorizers is likely to give rise to a completely different set of possible folksonomies than tagging systems primarily populated by describers.

Thank you!

**Any questions?**