II Seminar on Indicators of Scientific and Technological Culture

Scientific culture: Public perception of Science and Technology in Spanish Wikipedia

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▶ Aspects to consider:

> Selecting articles on Sci&Tech

> Thematic fields and relations

> Editing contents in a collaborative environment

Data (v. 2013-11-01)

Only articles after cleaning

- ▶ 1,025,168 articles

- ▶ 200K categories

- ▶ 30M links

- ▶ 49M editions

- ▶ 5,7M editors (mostly anonymous)

- ▶ 30M article views per day
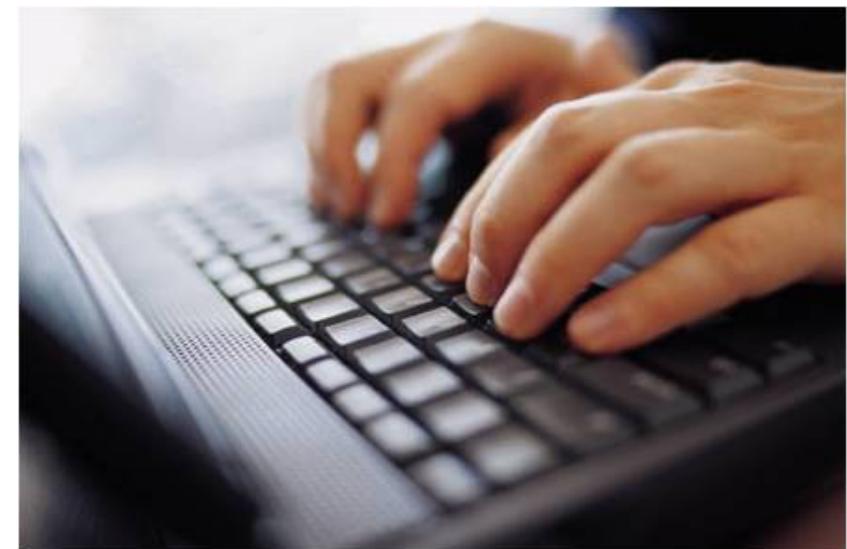
Selecting articles on Sci & Tech

▶ 1,025,168 articles

▶ We can use interlinks between articles to apply SNA techniques

▶ Community detection: *sets of highly inter-connected nodes*

> InfoMap algorithm, very fast

> It produces 1,314 communities, **342** have more than 10 articles

> they can be evaluated by hand, **23** were assigned to S&T

▶ Performs additional checks over links to tune articles assignment

> 119,686 articles on S&T

E-I index: $\dfrac{EL - IL}{EL + IL} = -0,69$

Sci & Tech articles

Community detection again

1. **Astronomy** (7,108)

2. **Health Sci** (13,259)

3. **Inf. Tech.** (9,793)

4. **Maths** (3,008)

5. **Paleonthology, Earth Sci.** (6,079)

6. **Zoology** (35,142)

7. **Chemistry, Physics, Engineering** (12,628)

8. **Bothanics** (27,553)

9. **Military Tech.** (5,116)

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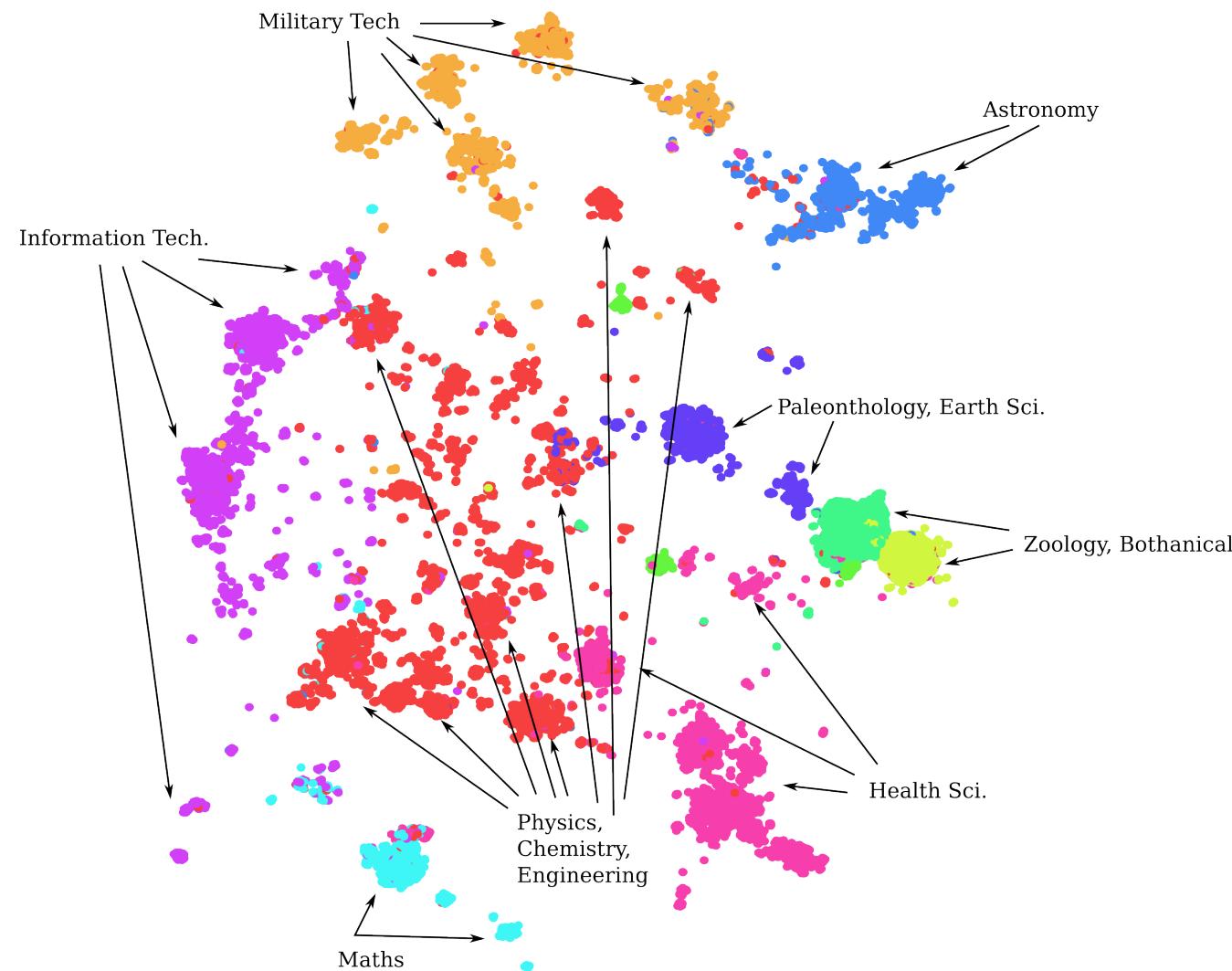
Sci & Tech articles: links between articles

From \ To	Astr.	Health S.	Inf.Tech	Maths	Pal.&Earth	Zool.	Chem&	Bothan.	Mil.
Astronomy (204.971)	91%						6%		
Health Sci (352.349)		79%				5%	9%	3%	
Inf. Tech. (190.555)			92%				4%		
Maths (53.116)			5%	84%			7%		
Paleonth., Earth Sci. (230.631)		4%			65%	26%			
Zoology (800.308)						91%			
Chem. Phys. Eng. (309.645)	3%	7%					82%		
Bothanics (766.200)						24%		71%	
Military Tech. (97.654)							7%		87%

$$\frac{EL - IL}{EL + IL} = -0,63$$

Non-S&T → S&T links

|	Astr.	Health S.	Inf.Tech	Maths	Pal.&Earth	Zool.	Chem&	Bothan.	Mil.
% links from Non-S&T (3.593.348)	3,2%	6,9%	9,0%	1,1%	1,3%	35,9%	25,7%	10,7%	6,3%
Average indegree from Non-S&T articles	16,4	18,7	33,0	12,8	7,5	36,7	73,0	14,0	44,0

Editing contents in a collaborative environment

▶ Differences between Non-S&T and S&T articles

- Articles
- Categories
- In-links
- Out-links
- Editors
- Reverts
- Origin of editors
- Page views
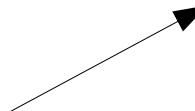
| Editors	#	New Articles	Editions
Registered (no admin)	467,199	388,743	13,904,570
Admin (sysop, bureaucrat, rollbacker, checkuser…)	784	492,964	9,505,670
Bots	366	3,832	10,559,405
Unregistered	5,217,187	141,629	15,191,681
	5,685,536	**1,027,168**	**49,161,326**

Articles, editors and editions

Number of Non-S&T articles

Number of S&T articles

Articles, editors and editions

Number of Non-S&T articles

Number of S&T articles


Editions of Non-S&T articles

Editions of S&T articles
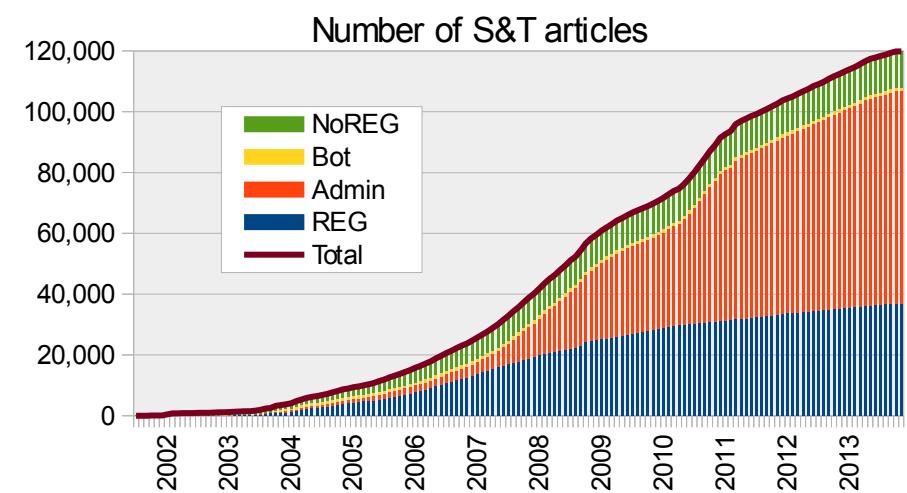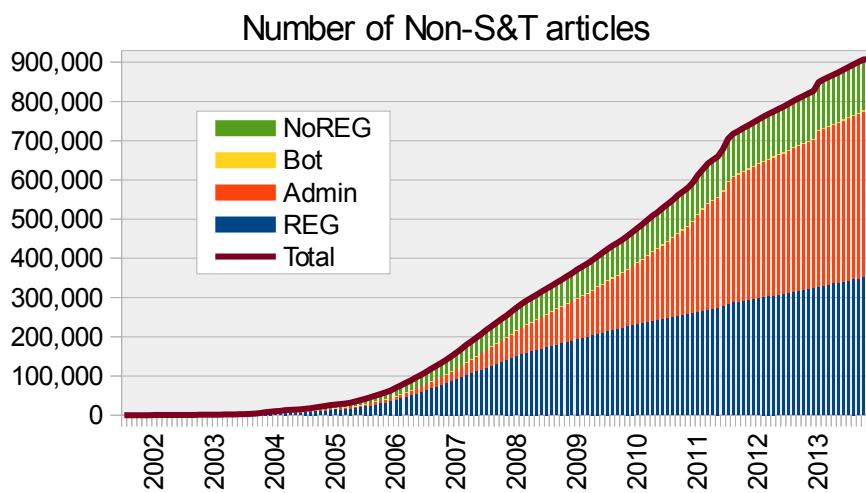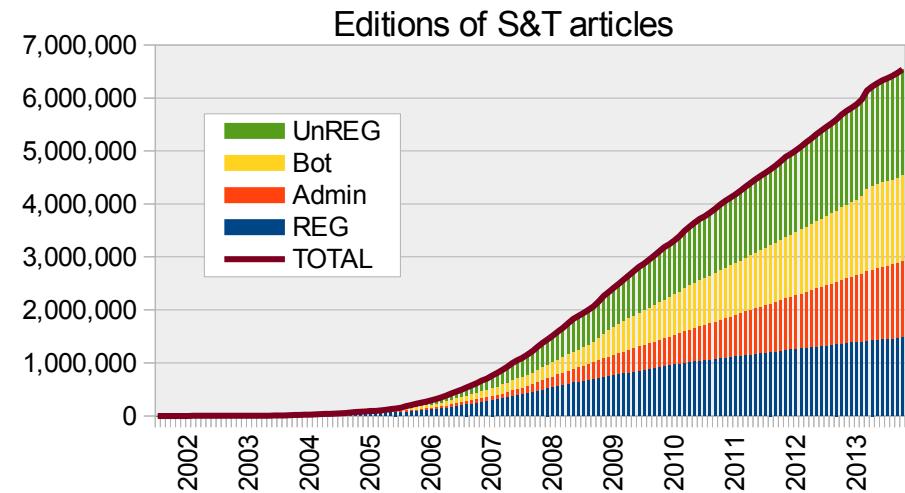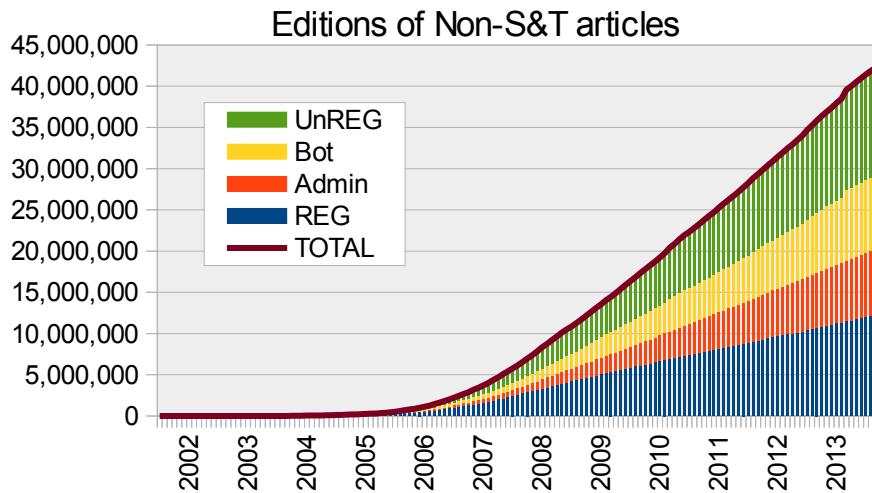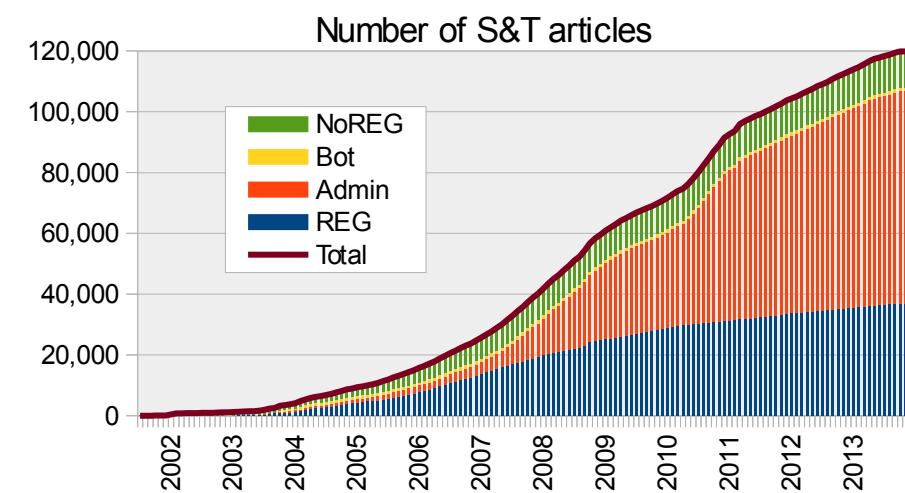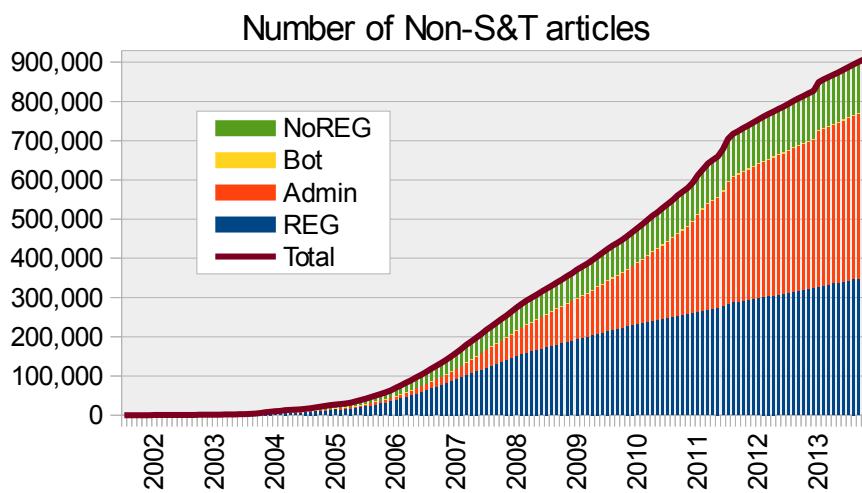
Categories, size and in&out links

Categories, size and in&out links
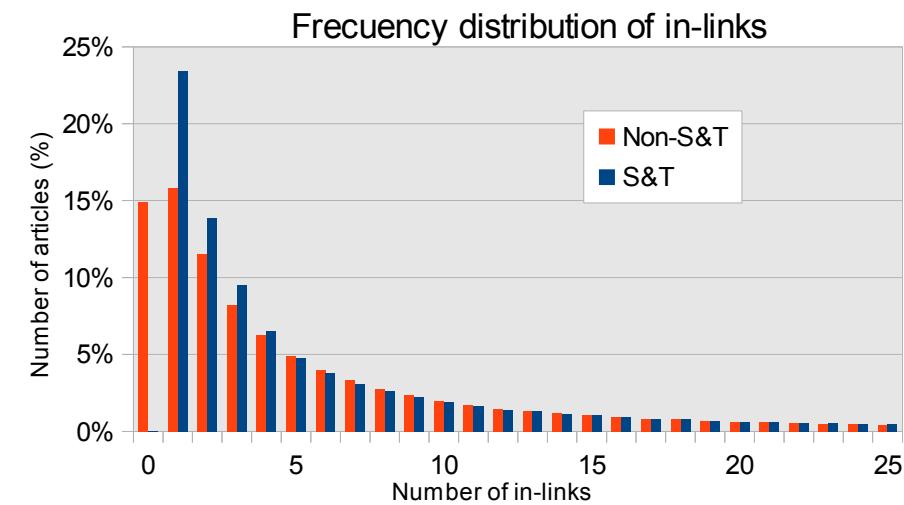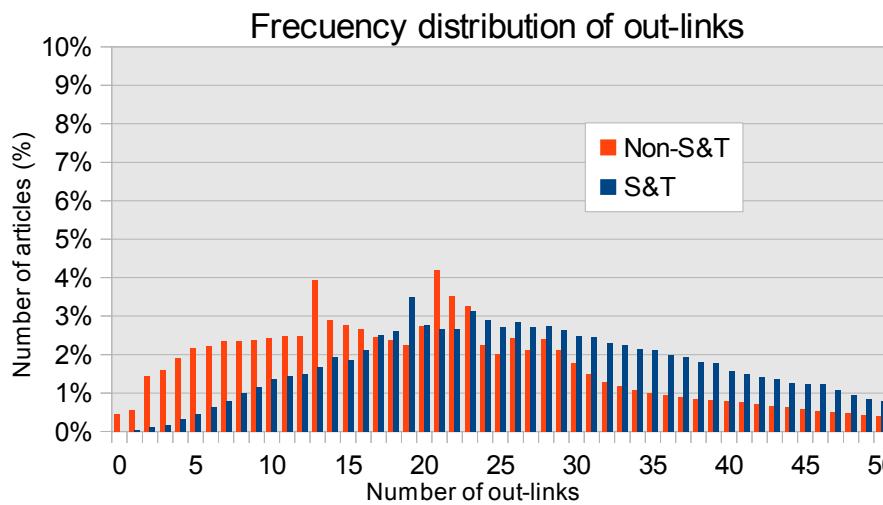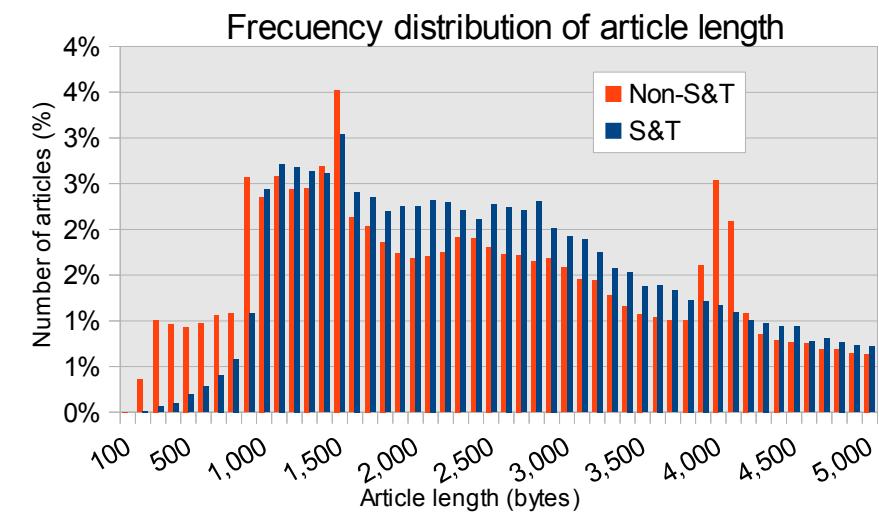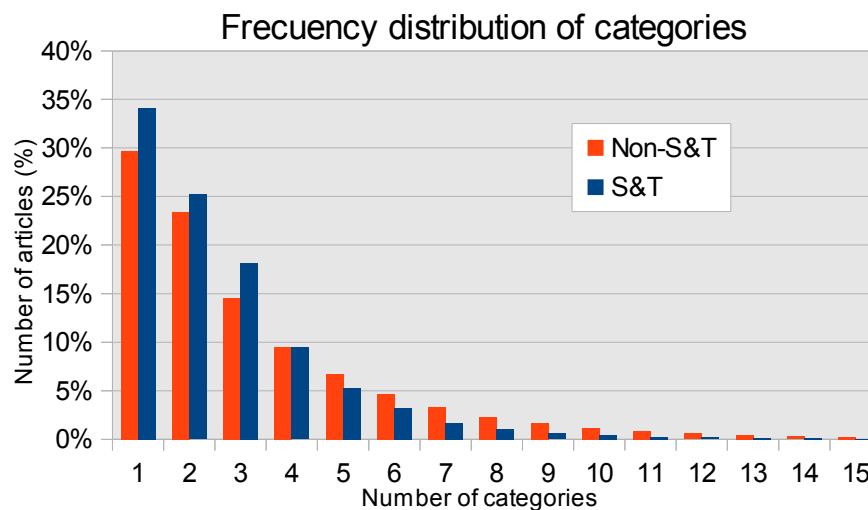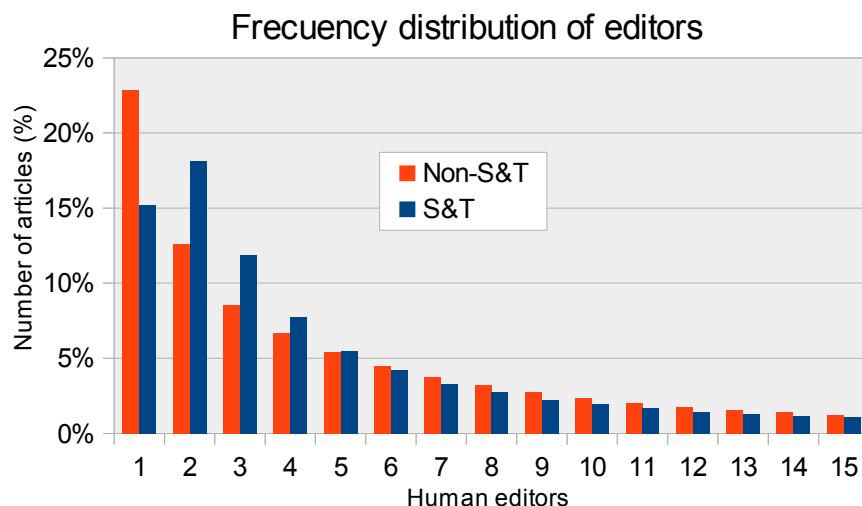
Frecuency distribution of categories

Frecuency distribution of article length

Frecuency distribution of out-links

Frecuency distribution of in-links

User activity: editors, reverts, origin

Frecuency distribution of editors

User activity: editors, reverts, origin

Frecuency distribution of editors

Frecuency distribution of reverts

User activity: editors, reverts, origin

Frecuency distribution of editors

Frecuency distribution of reverts

Origin of editions (detected for ~50%)

Article views

Average article views per month (2012-2013)
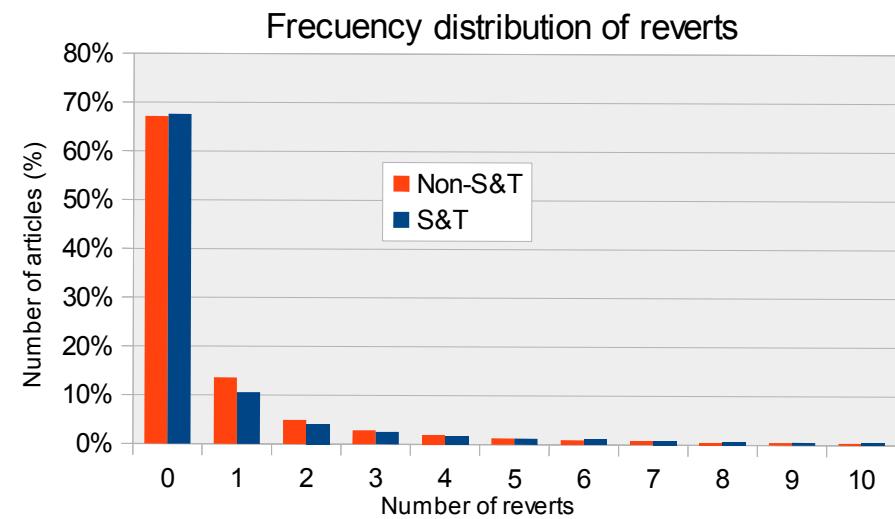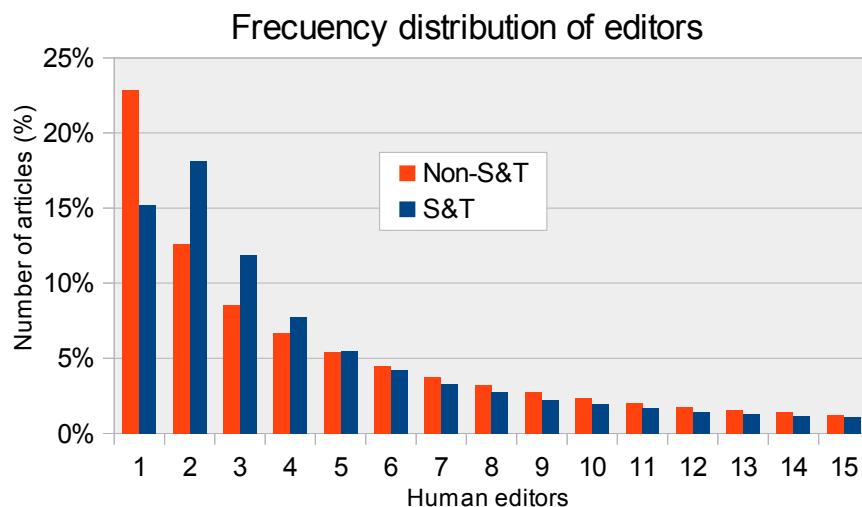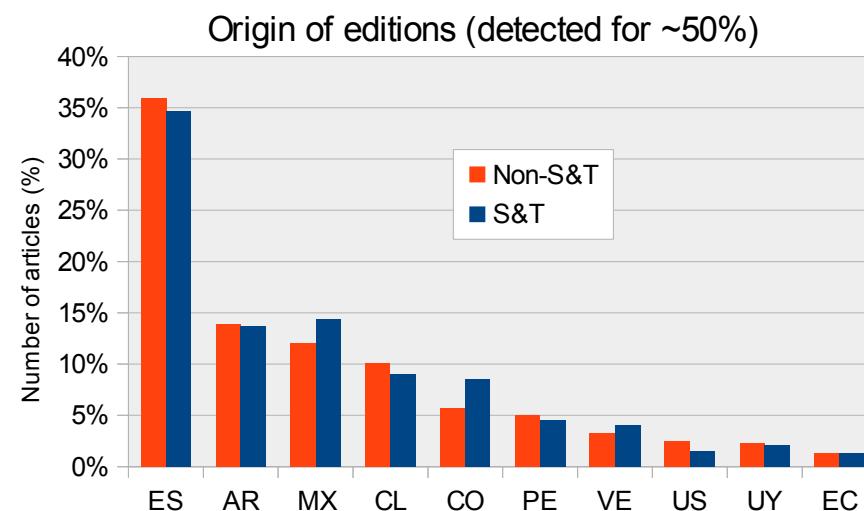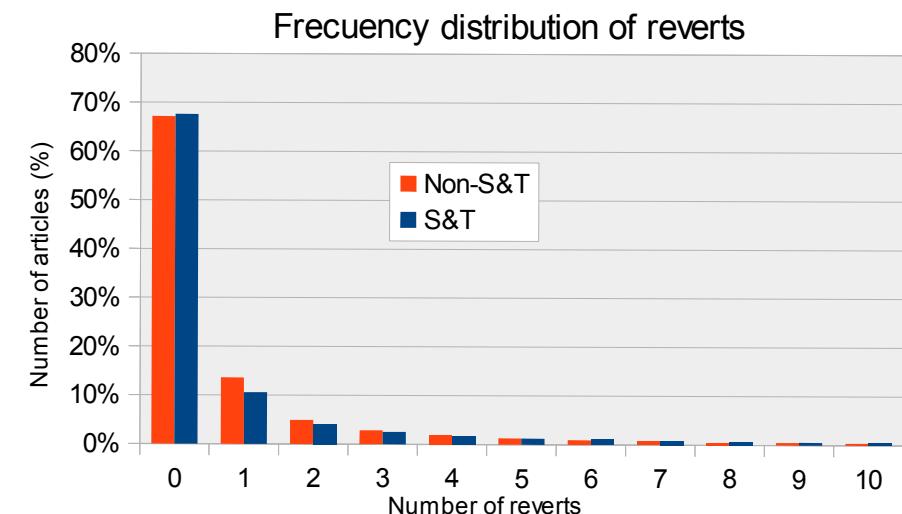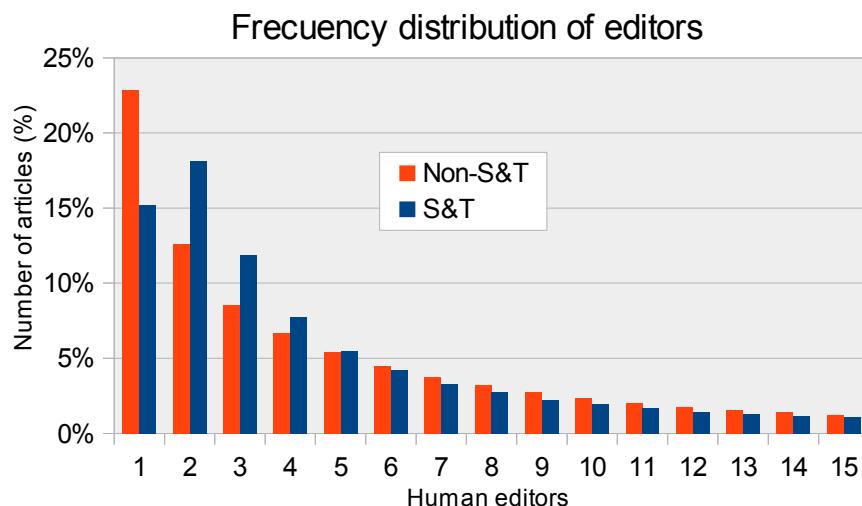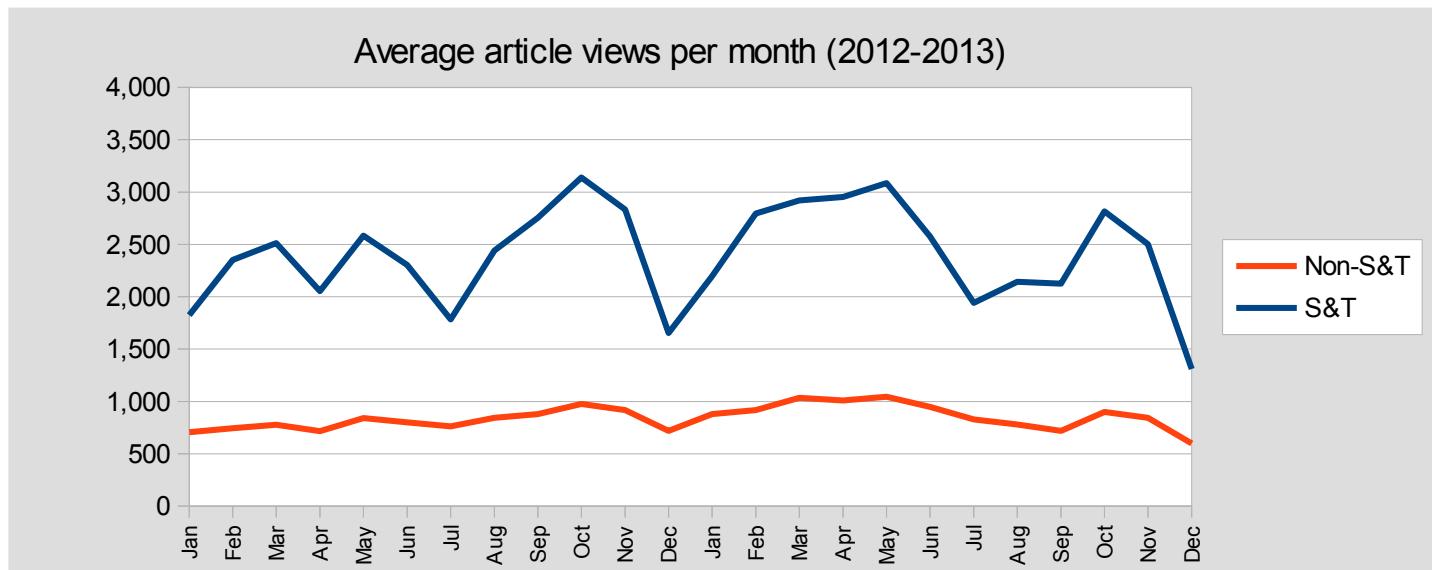
Article views

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