

From sociology *with* algorithms, to sociology *of* algorithms

Christophe Prieur

Télécom ParisTech, dept Sciences Éco et Sociales
i3, Institut Interdisciplinaire de l'Innovation



11-12 octobre, Michel Habib, 40 years of Graphs Algorithms



graphs
and
networks

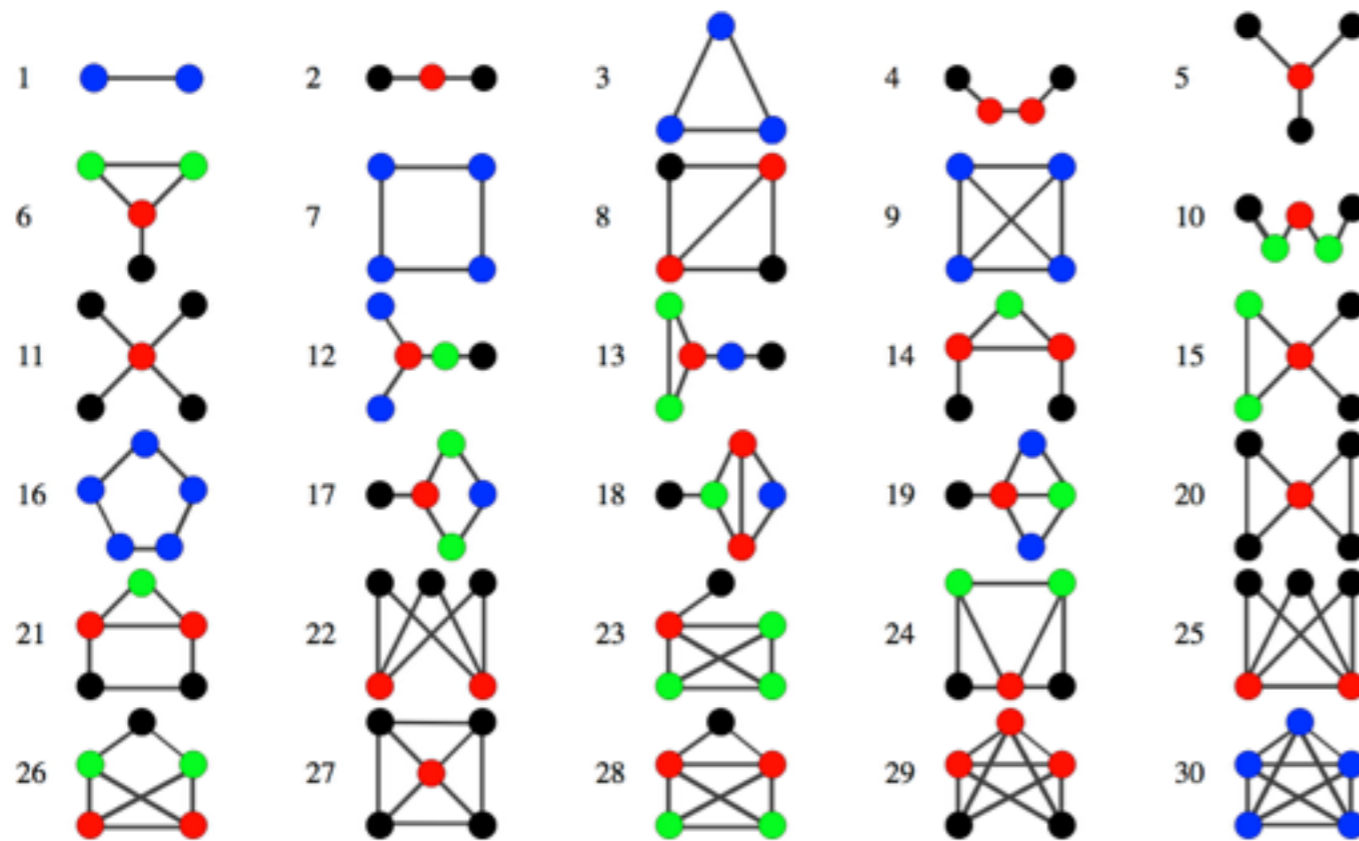
3 million ego-networks



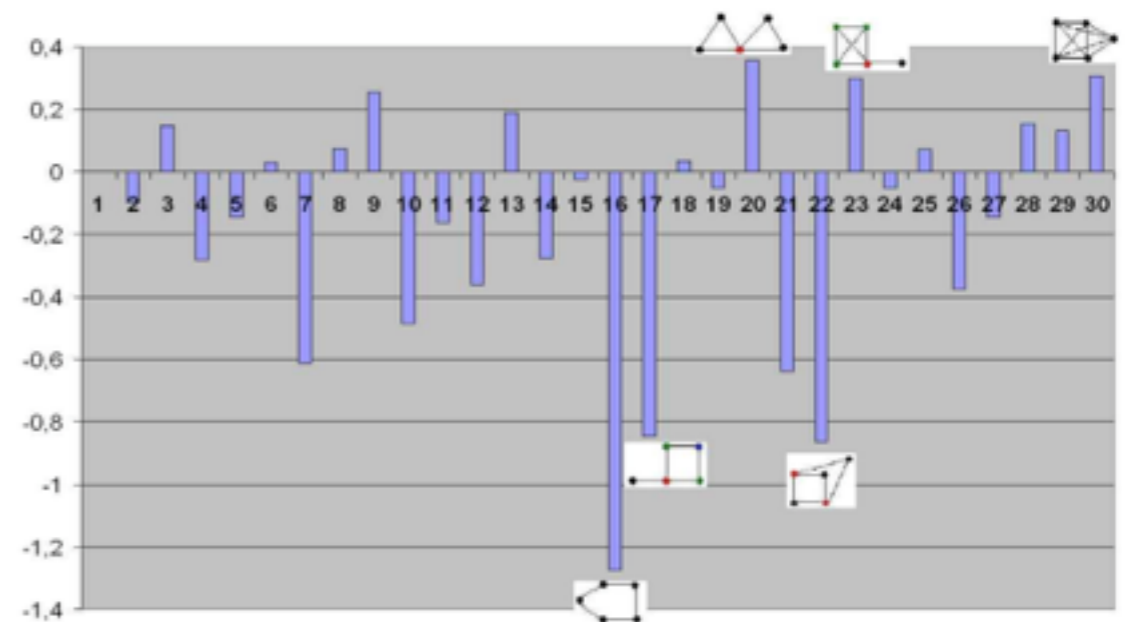
with Alina Stoica-Beck
and Zbigniew Smoreda
(Orange Labs)

560908	560907	6	40	44	0	4	1	2
560909	560908	4	22	24	1	2	3	3
560910	560909	2	4	3	0	0	0	1
560911	560910	1	4	3	0	0	0	1
560912	560911	8	25	33	3	14	0	2
560913	560912	2	9	10	0	1	1	2
560914	560913	3	14	18	0	3	2	2
560915	560914	6	28	27	1	11	1	2
560916	560915	2	10	10	0	1	0	1
560917	560916	1	3	2	0	0	0	1
560918	560917	1	2	1	0	0	0	0
560919	560918	1	2	1	0	0	0	0
560920	560919	1	4	3	0	0	0	1
560921	560920	3	17	25	0	10	0	1
560922	560921	3	9	9	1	1	0	1
560923	560922	3	12	14	1	3	0	1
560924	560923	4	9	9	0	1	0	1
560925	560924	4	11	27	2	25	6	3
560926	560925	1	18	26	0	9	0	1
560927	560926	3	15	16	0	2	0	1
560928	560927	5	9	10	2	2	0	2
560929	560928	2	6	5	0	0	0	1
560930	560929	2	8	7	0	0	0	1
560931	560930	1	5	4	0	0	0	1
560932	560931	4	8	7	0	0	0	1
560933	560932	2	9	8	0	0	0	1
560934	560933	3	12	13	1	1	0	1
560935	560934	7	26	28	1	2	1	2
560936	560935	4	12	13	1	1	1	2
560937	560936	2	9	9	0	1	0	1
560938	560937	4	31	35	0	6	0	1
560939	560938	4	43	70	2	35	8	3
560940	560939	2	13	13	0	1	0	1
560941	560940	7	41	52	5	13	1	5
560942	560941	2	15	16	0	1	1	2
560943	560942	8	79	119	4	57	2	3
560944	560943	4	17	17	0	1	0	1
560945	560944	3	10	9	0	0	0	1
560946	560945	14	84	111	2	30	0	2
560947	560946	5	13	15	2	2	1	2
560948	560947	4	14	16	1	3	1	2
560949	560948	3	8	9	2	2	0	2
560950	560949	2	6	7	1	2	1	2
560951	560950	2	9	11	1	3	1	2
560952	560951	3	10	12	2	3	0	2
560953	560952	3	18	28	2	13	1	2
560954	560953	3	26	28	0	3	0	1
560955	560954	2	17	26	1	15	1	2
560956	560955	7	45	55	1	12	0	1
560957	560956	5	33	44	1	11	1	2
560958	560957	4	23	29	1	6	2	2

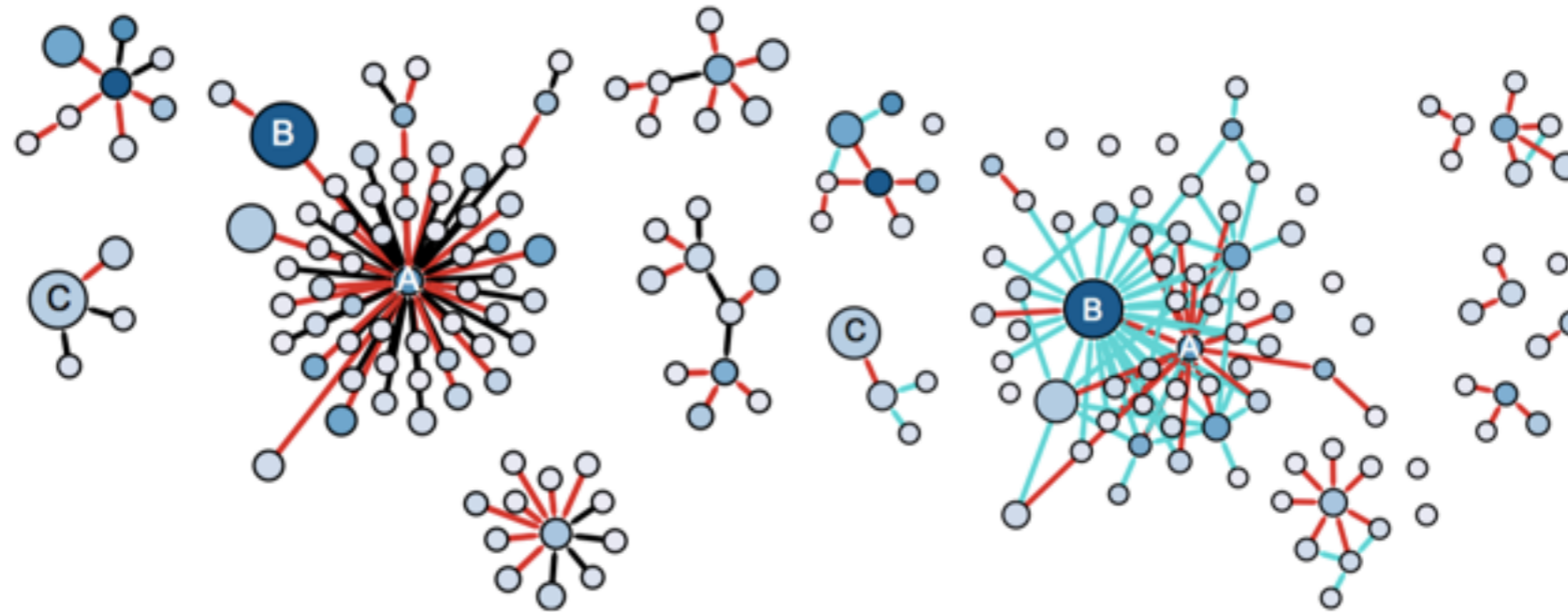
graphlets



Przulj, 2004
Stoica & Prieur, 2009



social network services



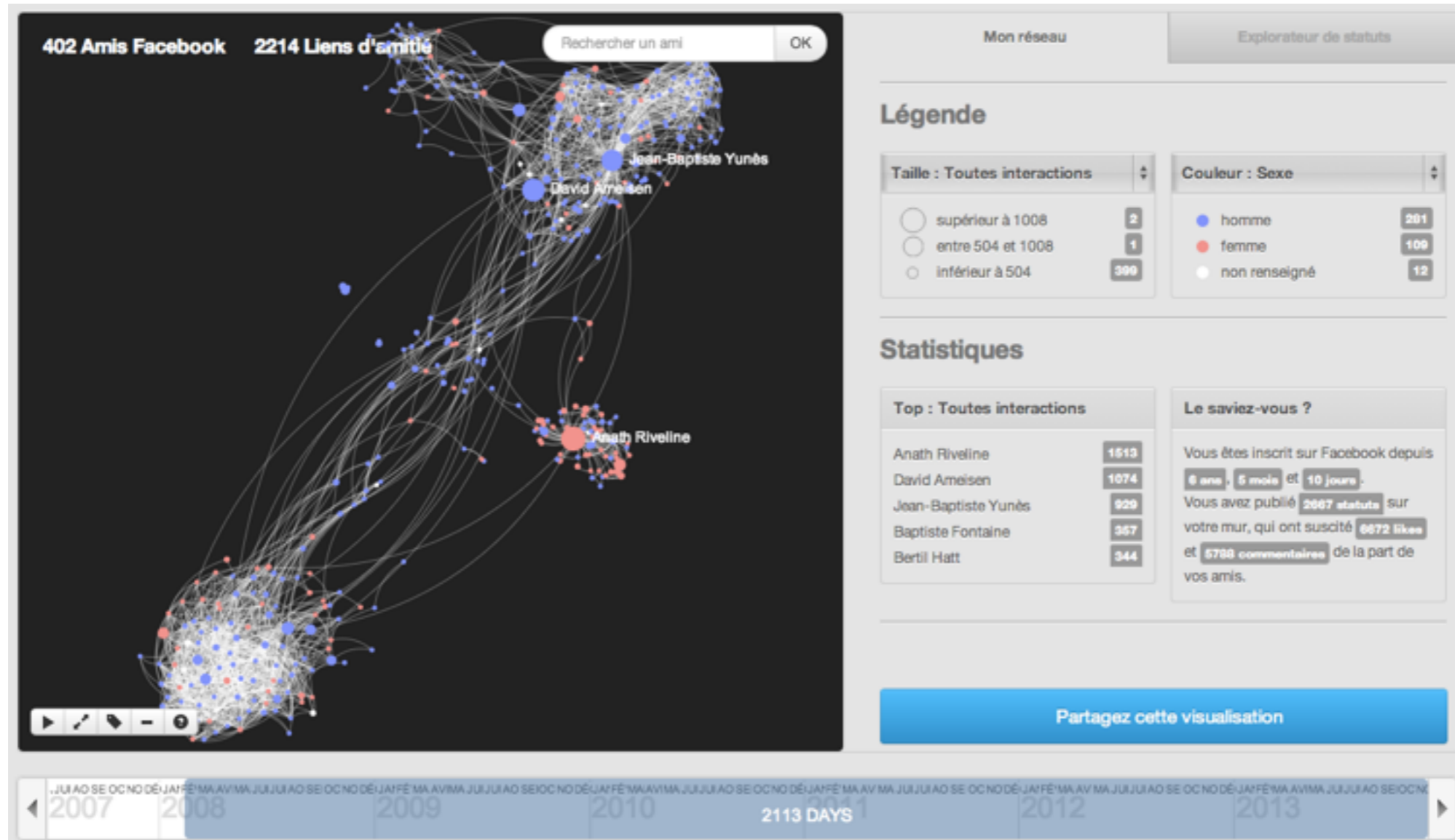
Graphe des *retweets*

Graphe des liens « expliqués »

with Stéphane Raux

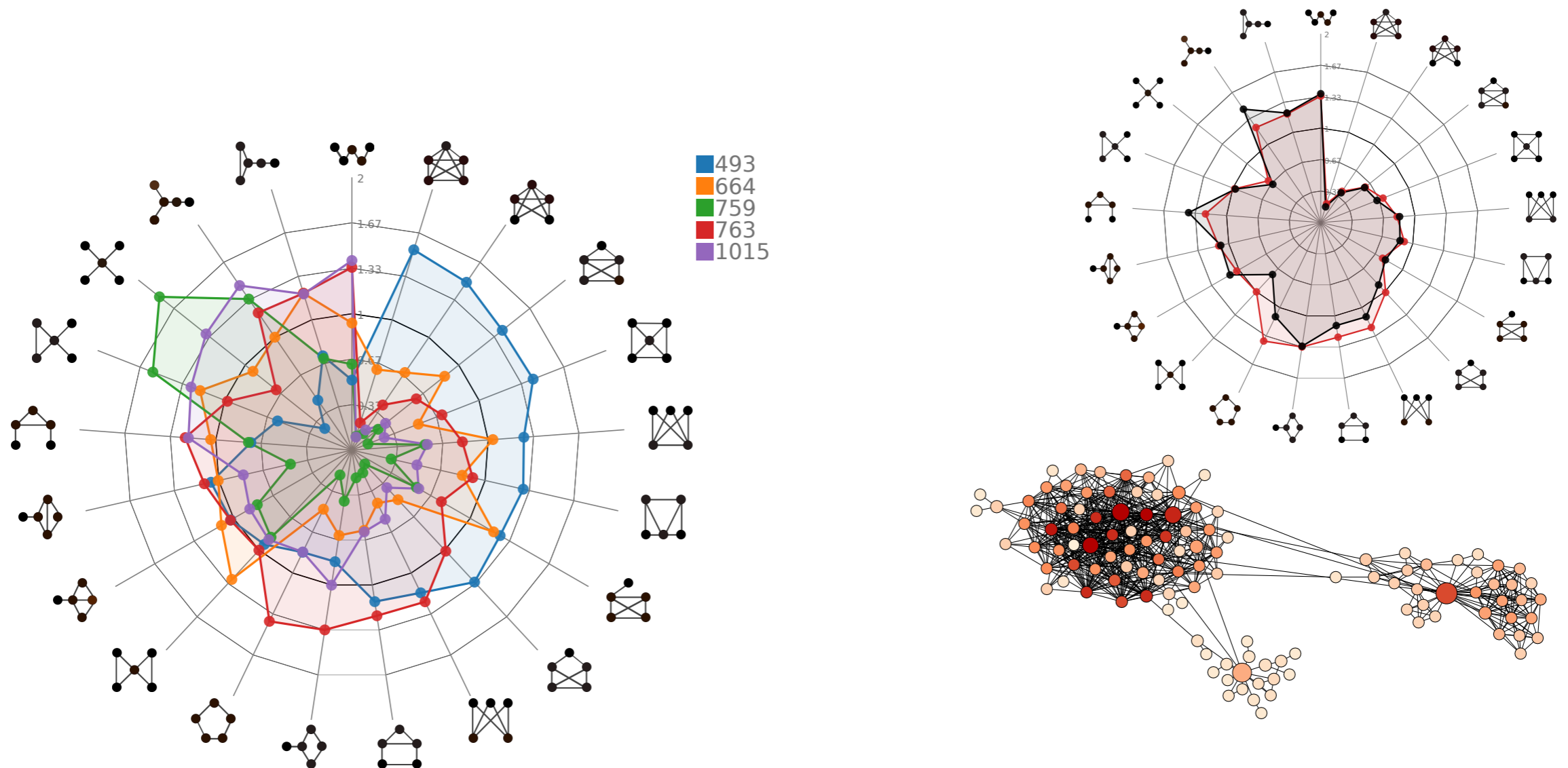
groupe	tweets	url	rt	is_rt	at	is_at
1	341	128	119	71	157	165
2	66	22	14	15	32	35
3	48	35	25	4	8	3
4	160	155	1	9	7	4
5	9	5	2	1	2	2

Algopol Facebook survey



Bastard et al., 2013

graphlets on Facebook ego-networks



Charbey & Prieur, 2018

people

behind

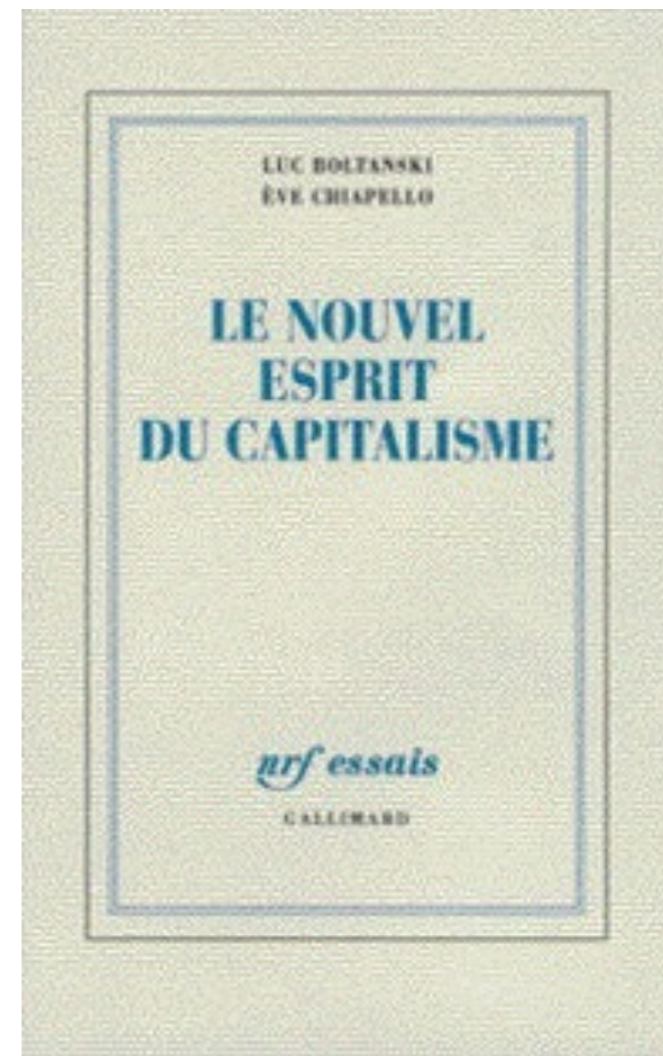
algorithms

joke

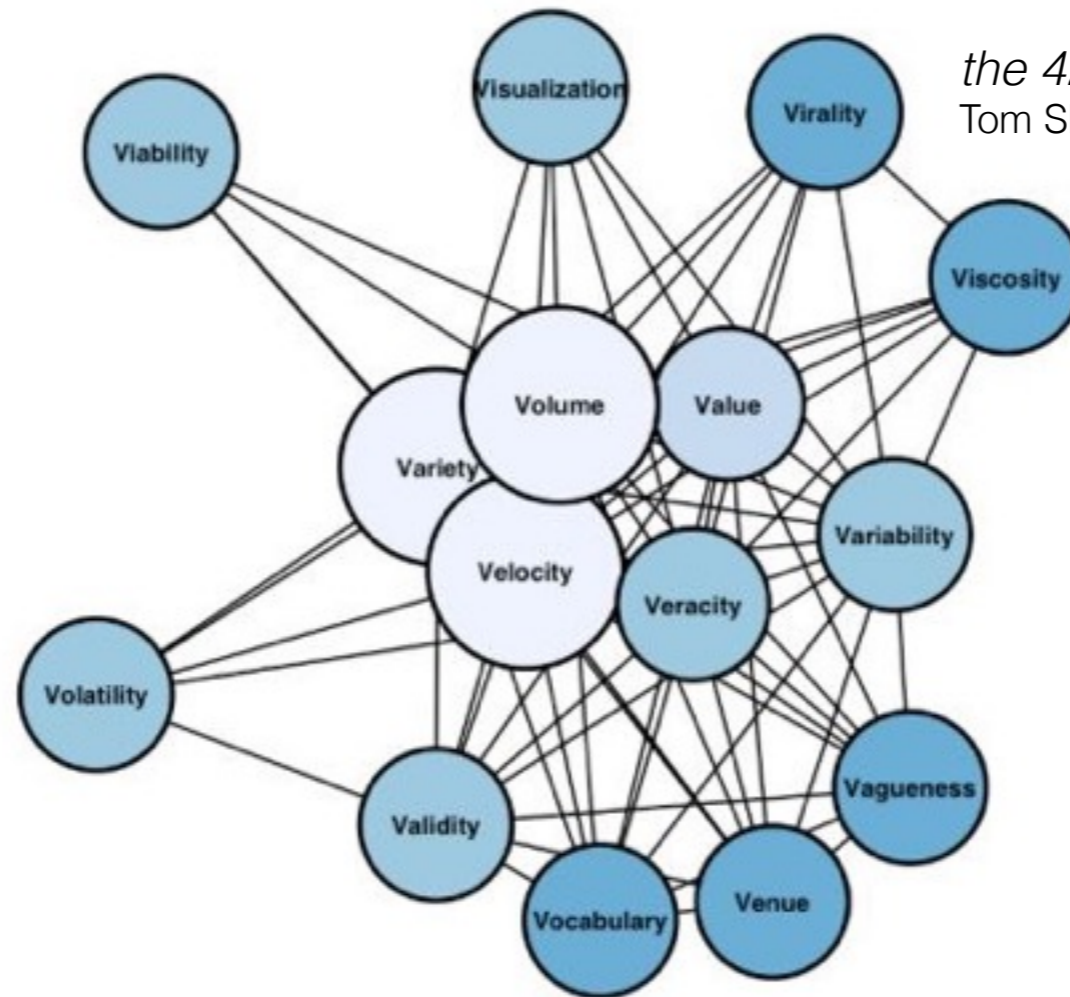


The New Spirit of Capitalism

Boltanski & Chiapello, 1999

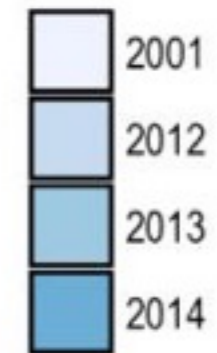


data science

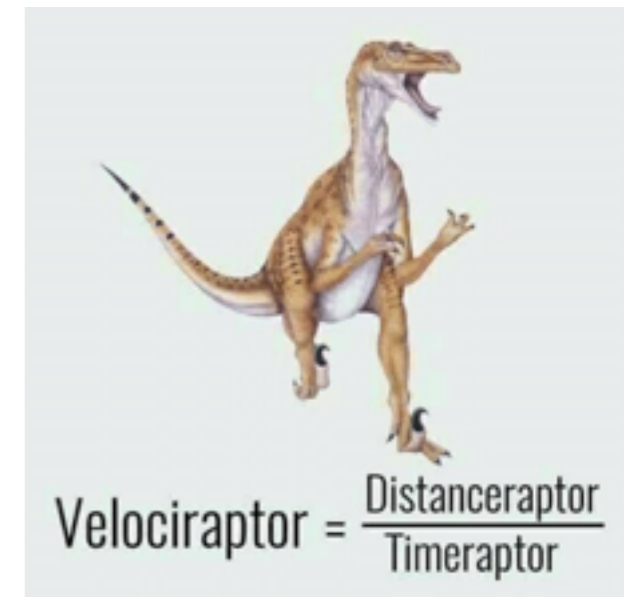


the 42 V's of big data
Tom Shafer, KDnuggets

First Occurrence



“It does look similar—but this one is powered by Hadoop”



AI is back!!



artificial artificial intelligence



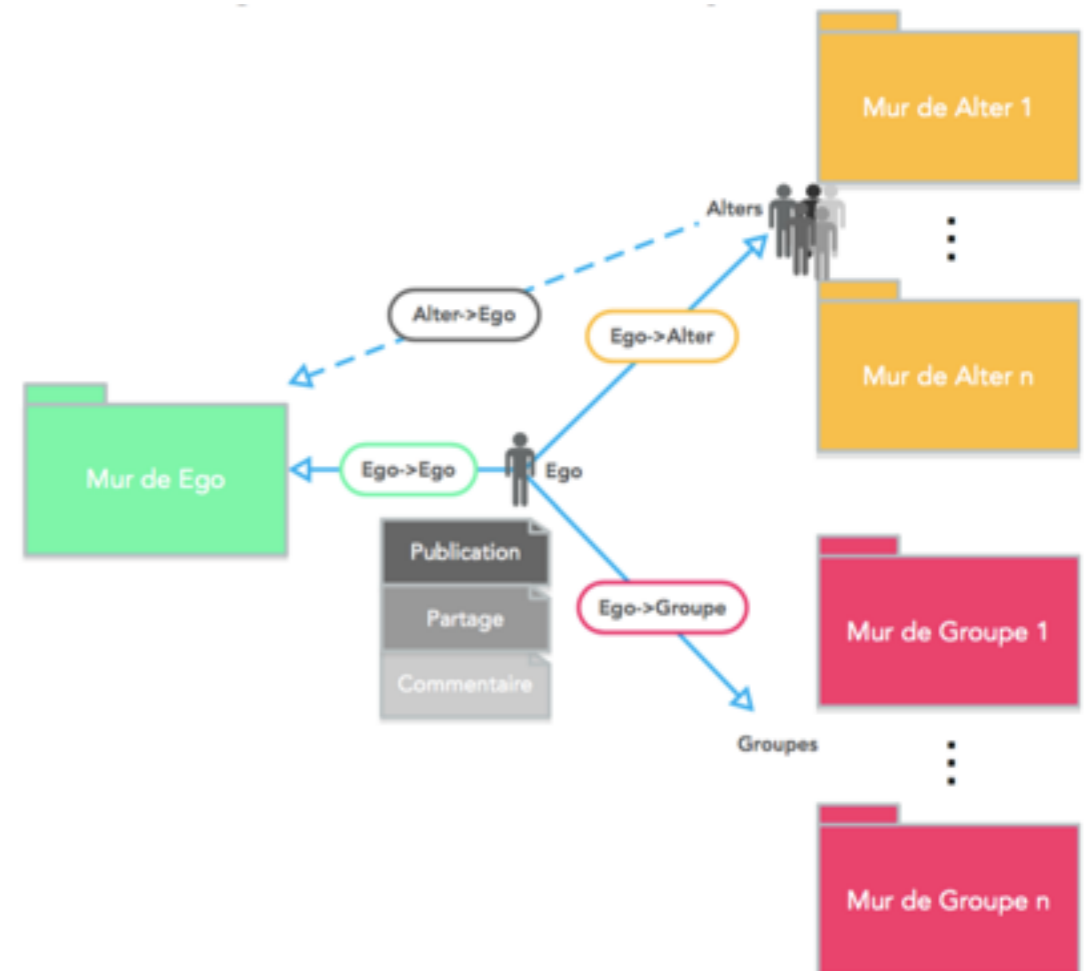
Human intelligence through an API

Access a global, on-demand, 24x7 workforce

Get Started with Amazon Mechanical Turk

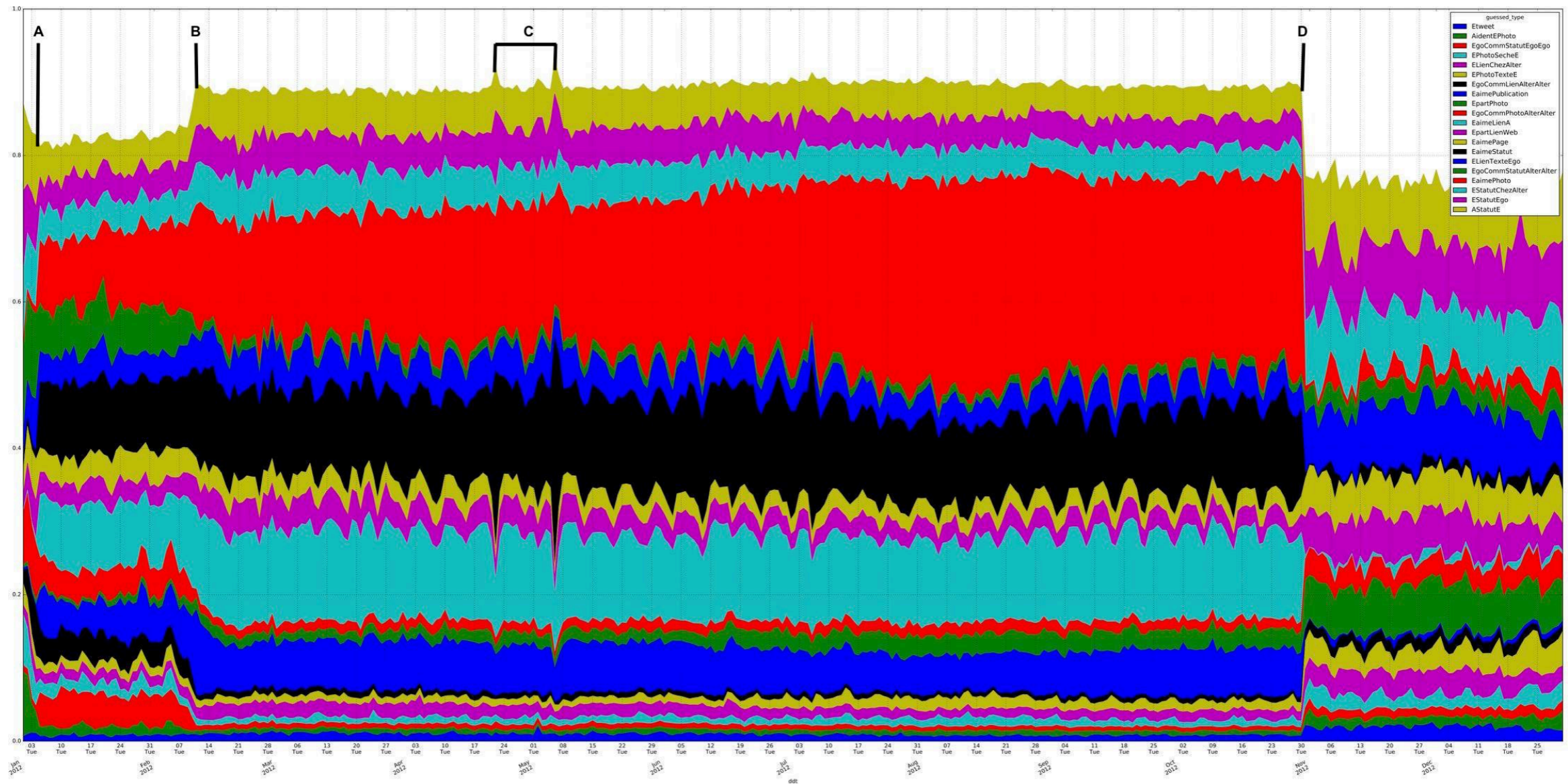
Facebook, what for?

	Gussed_ type	Activity Count	%_Activity	Avg. Like / A	Avg. Comm / A
Total	92	2 722 367		0,66	0,44
App / Game	1	1 005 531	37%	0,31	0,07
Total Activity	91	1 716 836		1,63	1,04
Unqualified	9	49 323	2%	3,97	2,32
Who					
Ego	65	1 562 190	91%	0,97	0,73
Alter	6	105 323	6%	5,17	2,39
What					
Status	16	554 085	32%	0,56	0,86
Photo	19	407 989	24%	3,49	1,66
Facebook	16	412 264	24%	0,48	0,32
Link	19	292 813	17%	0,71	0,62
Where					
Ego's Wall	53	1 334 264	78%	1,54	0,94
Alter's Wall	10	300 486	18%	0,01	0,00
Page	8	32 763	2%	1,43	1,41
With Whom					
Alone	38	1 116 521	65%	0,85	0,56
Friend	20	509 058	30%	1,64	0,76
Page	8	32 763	2%	1,43	1,41
Quotation	5	9 171	1%	3,65	2,84
Words					
Like	10	619 010	36%	0,01	0,01
Words	30	544 037	32%	1,20	1,21
Publish	20	319 933	19%	2,49	1,11
Share	11	184 533	11%	0,78	0,34



Bastard *et al*, 2017

metadata

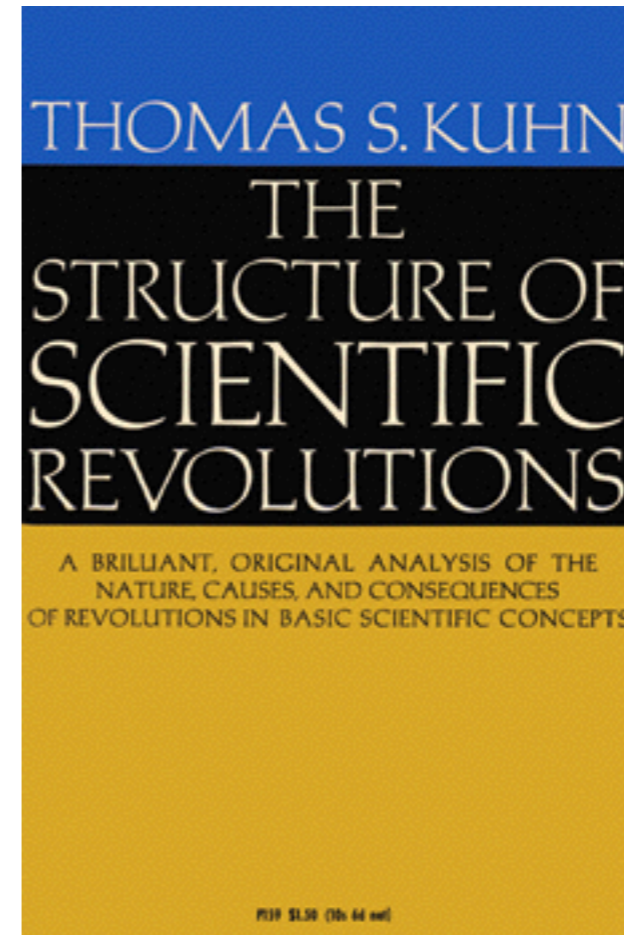


Facebook posts in 2012

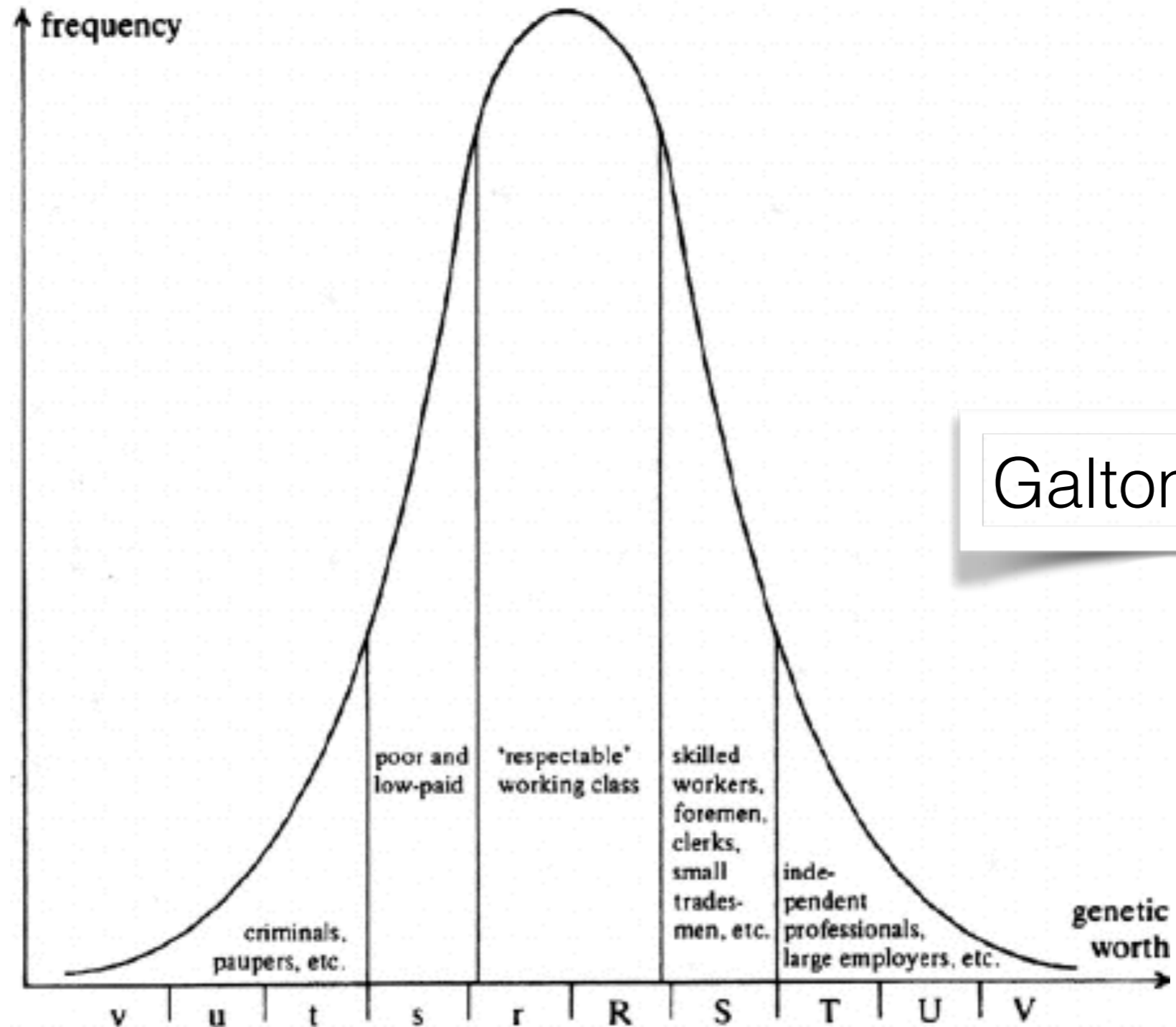
Science
and
Technology
Studies

The Structure of Scientific Revolutions

Thomas Kuhn, 1962



eugenics



Galton, 1901

producing data

- Garfinkel & Bittner, 1967,
« Good » organizational reasons for « bad » clinic records
- Denis & Goëta, 2014,
Exploration, extraction and 'rawification'.
The shaping of transparency in the back rooms of open data

sociology
of
algorithms

platform capitalism

- Graham *et al*, 2017,
Digital labour and development:
impacts of global digital labour platforms and the gig
economy on worker livelihoods

deep learning

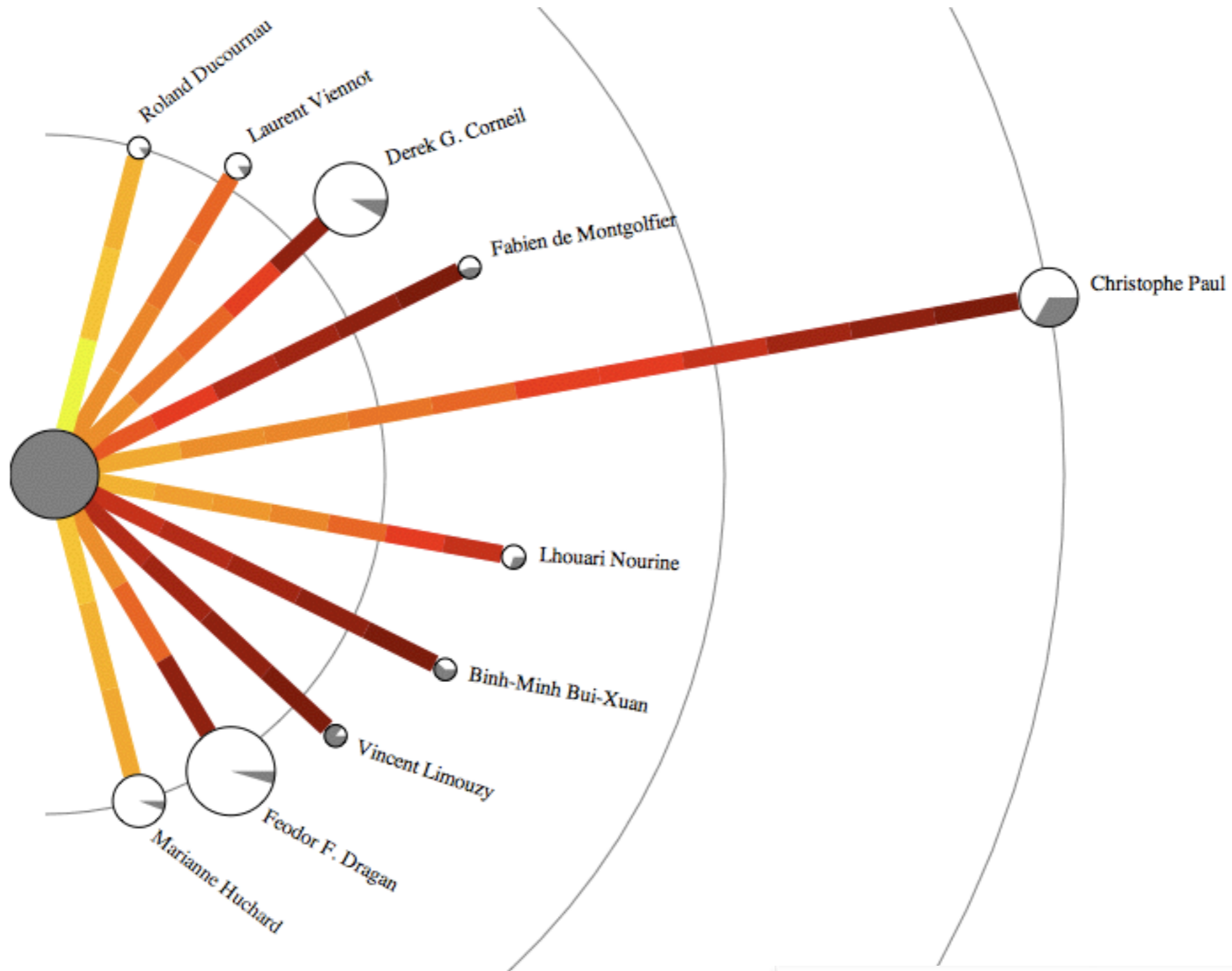
fairness

GDPR



parcoursup
Entrez dans l'enseignement supérieur





dblp-vis (~ 2010 ?)