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The impact factor of the journal in which an article is published.

Recommended reading:

Adler, R., Ewing, J. Taylor, P. Citation statistics. A report from the International Mathematical Union.
http://www.mathunion.org/publications/report/citationstatistics/

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Order in Spontaneous Behavior

Alexander Maye[1], Chih-hao Hsieh[2], George Sugihara[2], Björn Brembs[3*]

1 Universitätsklinikum Hamburg-Eppendorf, Zentrum für Experimentelle Medizin, Institut für Neurophysiologie und Pathophysiologie, Hamburg, Germany, **2** Scripps Institution of Oceanography, University of California San Diego, La Jolla, California, United States of America, **3** Freie Universität Berlin, Institut für Biologie–Neurobiologie, Berlin, Germany

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Abstract Top

Brains are usually described as input/output systems: they transform sensory input into motor output. However, the motor output of brains (behavior) is notoriously variable, even under identical sensory conditions. The question of whether this behavioral variability merely reflects residual deviations due to extrinsic random noise in such otherwise deterministic systems or an intrinsic, adaptive indeterminacy trait is central for the basic understanding of brain function. Instead of random noise, we find a fractal order (resembling Lévy flights) in the temporal structure of spontaneous flight maneuvers in tethered *Drosophila* fruit flies. Lévy-like probabilistic behavior patterns are evolutionarily conserved, suggesting a general neural mechanism underlying spontaneous behavior. *Drosophila* can produce these patterns endogenously, without any external cues. The fly's behavior is controlled by brain circuits which operate as a nonlinear system with unstable dynamics far from equilibrium. These findings suggest that both general models of brain function and autonomous agents ought to include biologically relevant nonlinear, endogenous behavior-initiating mechanisms if they strive to realistically simulate biological brains or out-compete other agents.

Citation: Maye A, Hsieh C-h, Sugihara G, Brembs B (2007) Order in Spontaneous Behavior. PLoS ONE 2(5): e443. doi:10.1371/journal.pone.0000443

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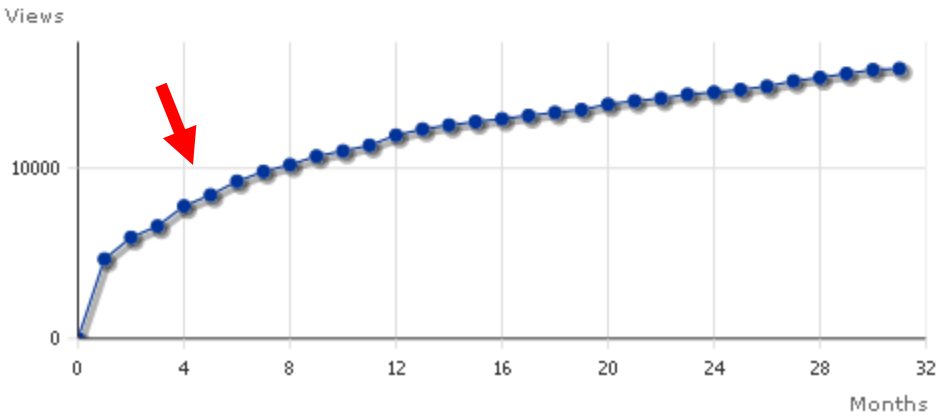

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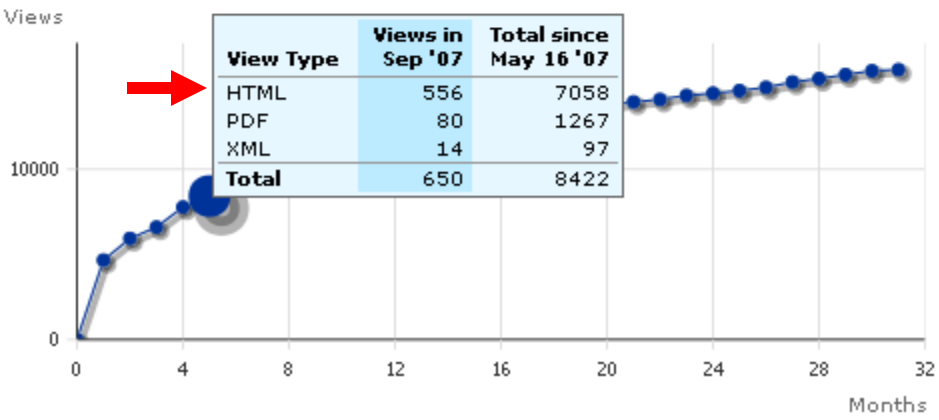

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   Chaos An Interdisciplinary Journal of Nonlinear Science 2008 18(2): 026112. doi:10.1063/1.2912458
2. Innovation and robustness in complex regulatory gene networks
   Ciliberti S, Martin OC, Wagner A
   Proceedings of the National Academy of Sciences 2007 104(34): 13591. doi:10.1073/pnas.0705396104
3. Selection to minimise noise in living systems and its implications for the evolution of gene expression
   Lehner B
   Molecular Systems Biology 2008 4. doi:10.1038/msb.2008.11
4. Neutralism and selectionism: a network-based reconciliation
   Wagner A
   Nature Reviews Genetics 2008 9(12): 965. doi:10.1038/nrg2473
5. Small-scale copy number variation and large-scale changes in gene expression
   Mileyko Y, Joh RI, Weitz JS
   Proceedings of the National Academy of Sciences 2008 105(43): 16659. doi:10.1073/pnas.0806239105

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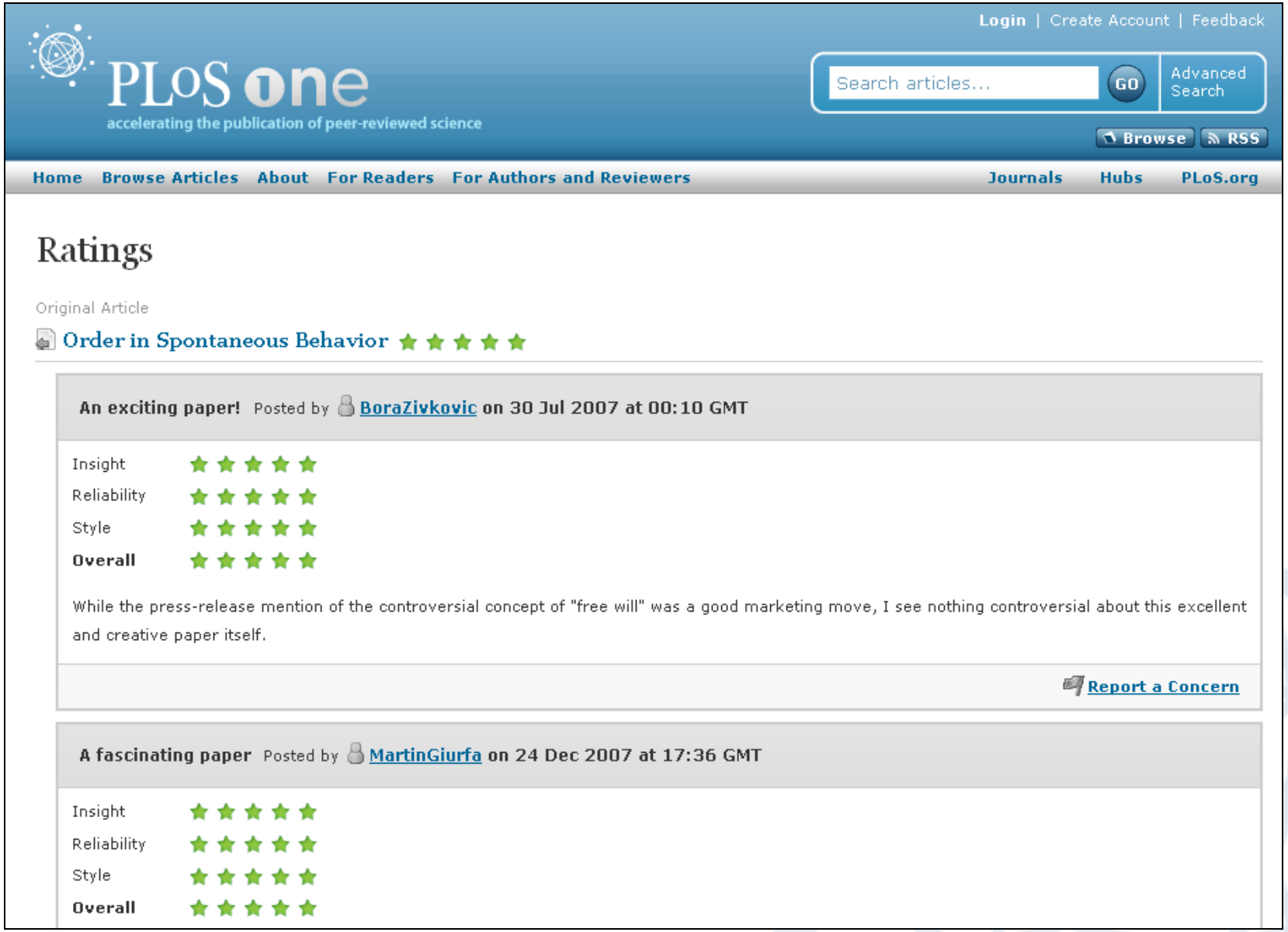

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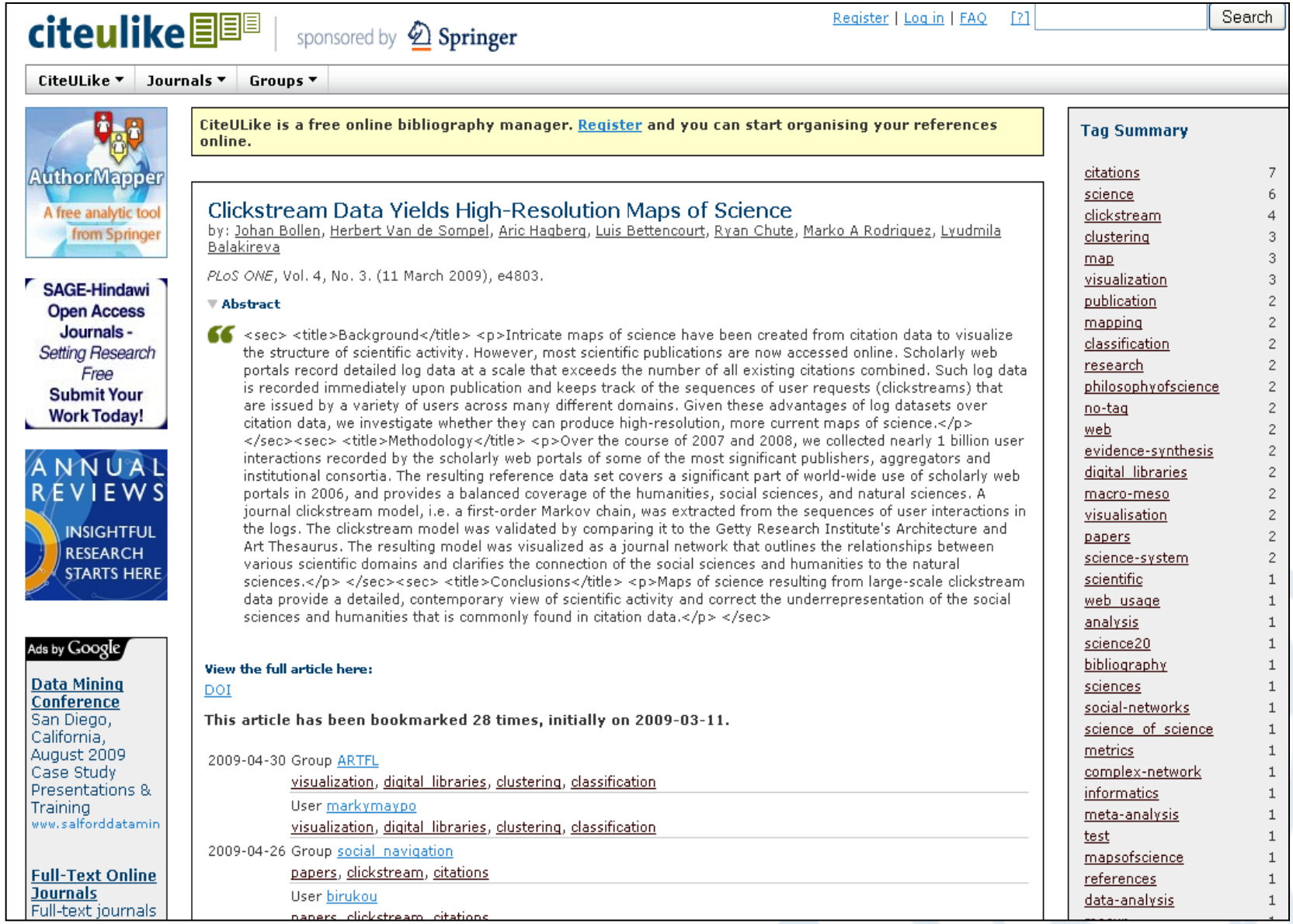

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Ionizing radiation changes the electronic properties of melanin and enhances the growth of melanized fungi.

linked to by 4 published by PLoS ONE on Mon 1st Jan 07

Ekaterina Dadachova, Ruth A Bryan, Xianchun Huang, Tiffany Moadel, Andrew D Schweitzer, Philip Aisen, Joshua D Nosanchuk, Arturo Casadevall

melanin | bioremdiation | fungi | extremophiles | biology | science | radiation | radiotropism | miniessays | ionizing radiation | evolution

DOI 10.1371/journal.pone.0000457 PMID 17520016

R.I.P.

BACKGROUND: Melanin pigments are ubiquitous in nature. Melanized microorganisms are [illegible] species in certain extreme environments, such as soils contaminated with radionuclides, suggesting that the presence of melanin is beneficial in their [illegible]. We hypothesized that ionizing radiation could change the electronic properties of melanin and might enhance the growth of melanized microorganisms. METHODOLOGY/PRINCIPAL FINDINGS: Ionizing irradiation changed the electron spin resonance (ESR) signal of melanin, consistent with changes in electronic structure. Irradiated melanin manifested a 4-fold increase in its capacity to reduce NADH relative to non-irradiated melanin. HPLC analysis of melanin from fungi grown on different substrates revealed chemical complexity, dependence of melanin composition on the growth substrate and possible influence of melanin composition on its interaction with ionizing radiation. XTT/MTT assays showed increased metabolic activity of melanized C. neoformans cells relative to non-melanized cells, and exposure to ionizing radiation enhanced the electron-transfer properties of melanin in melanized cells. Melanized Wangiella dermatitidis and Cryptococcus neoformans cells exposed to ionizing radiation approximately 500 times higher than background grew significantly faster as indicated by higher CFUs, more dry weight biomass and 3-fold greater incorporation of (14)C-acetate than non-irradiated melanized cells or irradiated albino mutants. In addition, radiation enhanced the growth of melanized Cladosporium sphaerospermum cells under limited nutrients conditions. CONCLUSIONS/SIGNIFICANCE: Exposure of melanin to ionizing radiation, and possibly other forms of electromagnetic radiation, changes its electronic properties. Melanized fungal cells manifested increased growth relative to non-melanized cells after exposure to ionizing radiation, raising intriguing questions about a potential role for melanin in energy capture and utilization.

Fungus eats radiation for breakfast at Chernobyl!

posted to A Blog Around The Clock on Mon 24th Sep 07

Sarah Wallace, Matt Ford, ScienceGoGo and Jason Stajich comment on the fungus that gets its energy from radiation. I've heard of Deinococcus radiodurans before, but this is a fungus! Well, if there is an energy source to tap into, even if it is in the middle...

Melaninized fungi use ionizing radiation for energy

linked to by 1 posted to Fungal Genomes and Comparative Genomics on Tue 29th May 07

A recent paper in PLoS One entitled Ionizing Radiation Changes the Electronic Properties of Melanin and Enhances the Growth of Melanized Fungi describes some pretty

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John P A Ioannidis

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PLoS Medicine: Essay, published 30 Aug 2005
10.1371/journal.pmed.0020124

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Samuel Levy, Granger Sutton, Pauline C Ng, Lars Feuk, Aaron L Halpern, Brian P Walenz, Nelson Axelrod, Jiaqi Huang, Ewen F Kirkness, Gennady Denisov, Yuan Lin, Jeffrey R MacDonald, Andy Wing Chun Pang, Mary Shago, Timothy B Stockwell, Alexia Tsiamouri, Vineet Bafna, Vikas Bansal, Saul A Kravitz, Dana A Busam, Karen Y Beeson, Tina C McIntosh, Karin A Remington, Josep F Abril, John Gill, Jon Borman, Yu-Hui Rogers, Marvin E

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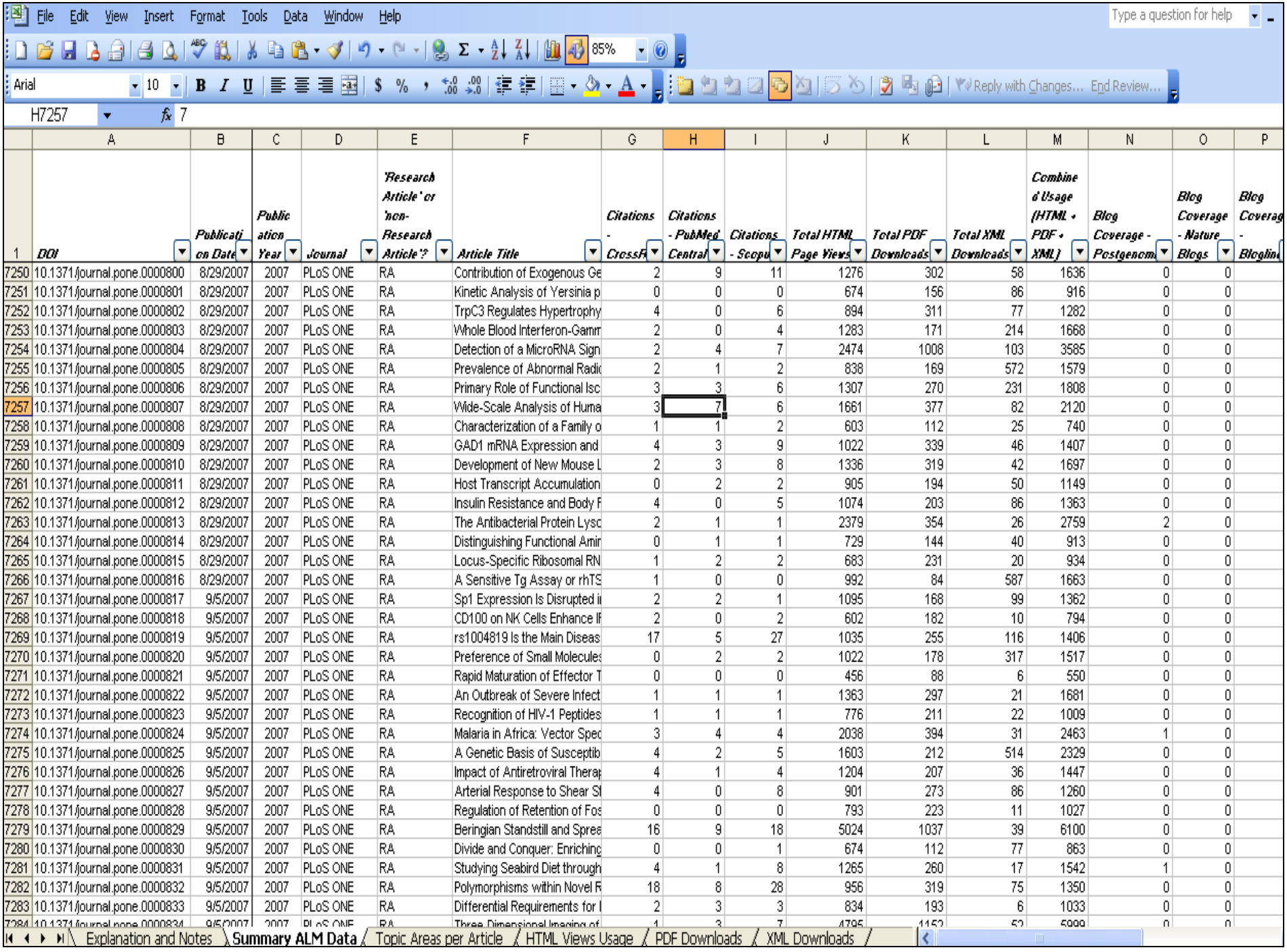

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7251	10.1371/journal.pone.0000801	8/29/2007	2007	PLoS ONE	RA	Kinetic Analysis of Yersinia p	0	0	0	674	156	86	916	0	0	
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7254	10.1371/journal.pone.0000804	8/29/2007	2007	PLoS ONE	RA	Detection of a MicroRNA Sign	2	4	7	2474	1008	103	3585	0	0	
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7257	10.1371/journal.pone.0000807	8/29/2007	2007	PLoS ONE	RA	Wide-Scale Analysis of Huma	3	7	6	1661	377	82	2120	0	0	
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7259	10.1371/journal.pone.0000809	8/29/2007	2007	PLoS ONE	RA	GAD1 mRNA Expression and	4	3	9	1022	339	46	1407	0	0	
7260	10.1371/journal.pone.0000810	8/29/2007	2007	PLoS ONE	RA	Development of New Mouse L	2	3	8	1336	319	42	1697	0	0	
7261	10.1371/journal.pone.0000811	8/29/2007	2007	PLoS ONE	RA	Host Transcript Accumulation	0	2	2	905	194	50	1149	0	0	
7262	10.1371/journal.pone.0000812	8/29/2007	2007	PLoS ONE	RA	Insulin Resistance and Body F	4	0	5	1074	203	86	1363	0	0	
7263	10.1371/journal.pone.0000813	8/29/2007	2007	PLoS ONE	RA	The Antibacterial Protein Lysc	2	1	1	2379	354	26	2759	2	0	
7264	10.1371/journal.pone.0000814	8/29/2007	2007	PLoS ONE	RA	Distinguishing Functional Amir	0	1	1	729	144	40	913	0	0	
7265	10.1371/journal.pone.0000815	8/29/2007	2007	PLoS ONE	RA	Locus-Specific Ribosomal RN	1	2	2	683	231	20	934	0	0	
7266	10.1371/journal.pone.0000816	8/29/2007	2007	PLoS ONE	RA	A Sensitive Tg Assay or rhTS	1	0	0	992	84	587	1663	0	0	
7267	10.1371/journal.pone.0000817	9/5/2007	2007	PLoS ONE	RA	Sp1 Expression Is Disrupted i	2	2	1	1095	168	99	1362	0	0	
7268	10.1371/journal.pone.0000818	9/5/2007	2007	PLoS ONE	RA	CD100 on NK Cells Enhance IF	2	0	2	602	182	10	794	0	0	
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7270	10.1371/journal.pone.0000820	9/5/2007	2007	PLoS ONE	RA	Preference of Small Molecules	0	2	2	1022	178	317	1517	0	0	
7271	10.1371/journal.pone.0000821	9/5/2007	2007	PLoS ONE	RA	Rapid Maturation of Effector T	0	0	0	456	88	6	550	0	0	
7272	10.1371/journal.pone.0000822	9/5/2007	2007	PLoS ONE	RA	An Outbreak of Severe Infect	1	1	1	1363	297	21	1681	0	0	
7273	10.1371/journal.pone.0000823	9/5/2007	2007	PLoS ONE	RA	Recognition of HIV-1 Peptides	1	1	1	776	211	22	1009	0	0	
7274	10.1371/journal.pone.0000824	9/5/2007	2007	PLoS ONE	RA	Malaria in Africa: Vector Spec	3	4	4	2038	394	31	2463	1	0	
7275	10.1371/journal.pone.0000825	9/5/2007	2007	PLoS ONE	RA	A Genetic Basis of Susceptib	4	2	5	1603	212	514	2329	0	0	
7276	10.1371/journal.pone.0000826	9/5/2007	2007	PLoS ONE	RA	Impact of Antiretroviral Therap	4	1	4	1204	207	36	1447	0	0	
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Evaluating the (usage) data

Journal Summary Usage Data

This page contains summary tables relating solely to article usage data. We have also provided detailed text describing the full range of article-level metrics at PLoS, detailed information about usage data in particular, and a summary Excel file containing the full data set.

Table of average lifetime usage per journal: mean values are shown per journal, per article type (Research Articles or non-Research Articles), according to the year of first publication

This table contains summary usage data for the articles published by each PLoS journal and provides an indication of the typical usage levels that might be expected, at a journal level, for those articles originally published in any given year. As an example of how to read this table, there were 238 non-Research Articles published in *PLoS Biology* in 2006 and as of 31st July 2009 their lifetime average usage was 2,600.

See notes at the bottom of this table.

	2006	2006	2007	2007	2008	2008

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	2006	2006	2007	2007	2008	2008
	Non-Research Articles Avg (n)	Research Articles Avg (n)	Non-Research Articles Avg (n)	Research Articles Avg (n)	Non-Research Articles Avg (n)	Research Articles Avg (n)
PLoS Biology	2600 (238)	6400 (185)	4700 (118)	5600 (203)	3900 (131)	4200 (197)
PLoS Clinical Trials	4000 (15)	2700 (25)	1400 (9)	2000 (19)	n/a	n/a
PLoS Computational Biology	4700 (32)	3400 (136)	5200 (48)	2800 (203)	4900 (36)	2200 (251)
PLoS Genetics	3300 (35)	3800 (173)	3300 (20)	3400 (210)	2600 (27)	2400 (325)
PLoS Medicine	3700 (342)	5200 (145)	3300 (211)	5000 (135)	3200 (140)	6900 (110)
PLoS Neglected Tropical Diseases	n/a	n/a	2500 (16)	2100 (26)	1600 (46)	1700 (133)
PLoS ONE	n/a	n/a	n/a	2100 (1070)	n/a	1500 (2718)
PLoS Pathogens	3000 (26)	3500 (97)	2600 (25)	2700 (172)	2200 (15)	1900 (271)

Evaluating the (usage) data

PLoS Medicine

See notes at the bottom of this page.

	2006	2007	2008
Topic	Avg (n)	Avg (n)	Avg (n)
Cardiovascular Disorders	3300 (10)	5100 (8)	9300 (6)
Diabetes and Endocrinology	4600 (7)	6100 (13)	3200 (7)
Genetics and Genomics	4300 (29)	3300 (19)	3400 (13)
Immunology	3400 (31)	4100 (19)	2800 (8)
Infectious Diseases	5700 (69)	4700 (53)	4000 (36)
Neuroscience	5200 (9)	3700 (9)	5400 (5)
Non-Clinical Medicine	7400 (41)	7900 (18)	19600 (3)
Oncology	4500 (18)	4100 (17)	4600 (9)
Pediatrics and Child Health	4200 (10)	4000 (15)	4400 (10)
Public Health and Epidemiology	6000 (81)	5100 (77)	6600 (58)

Evaluating the data

Visualizations about 'plos'

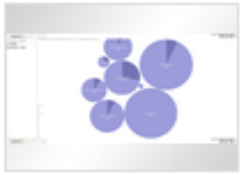
Subscribe

Showing search results for: " tagged with: **'plos'** View All »

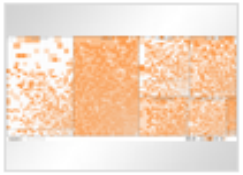
Showing 1-10 of 10

Sort by date Sorted by rating

Oct 19 2009
Journals RA and non-RA Citations per Day matrix chart

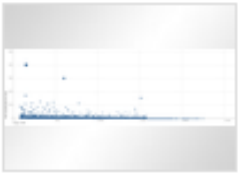


Oct 19 2009
Journals RA and non-RA Citations per Day

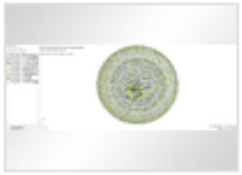


Oct 19 2009
PLoS article citations per day colored by publication year

Oct 19 2009
Citation rate and article age



Oct 20 2009
PLoS article age and PDF downloads per day



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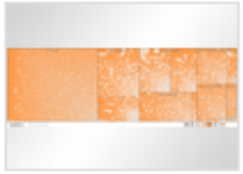
PLoS article downloads per day



Oct 20 2009
PLoS article PDF downloads per day colored by publication year

Oct 20 2009
PLoS article citations per day CrossRef and PubMed comparison

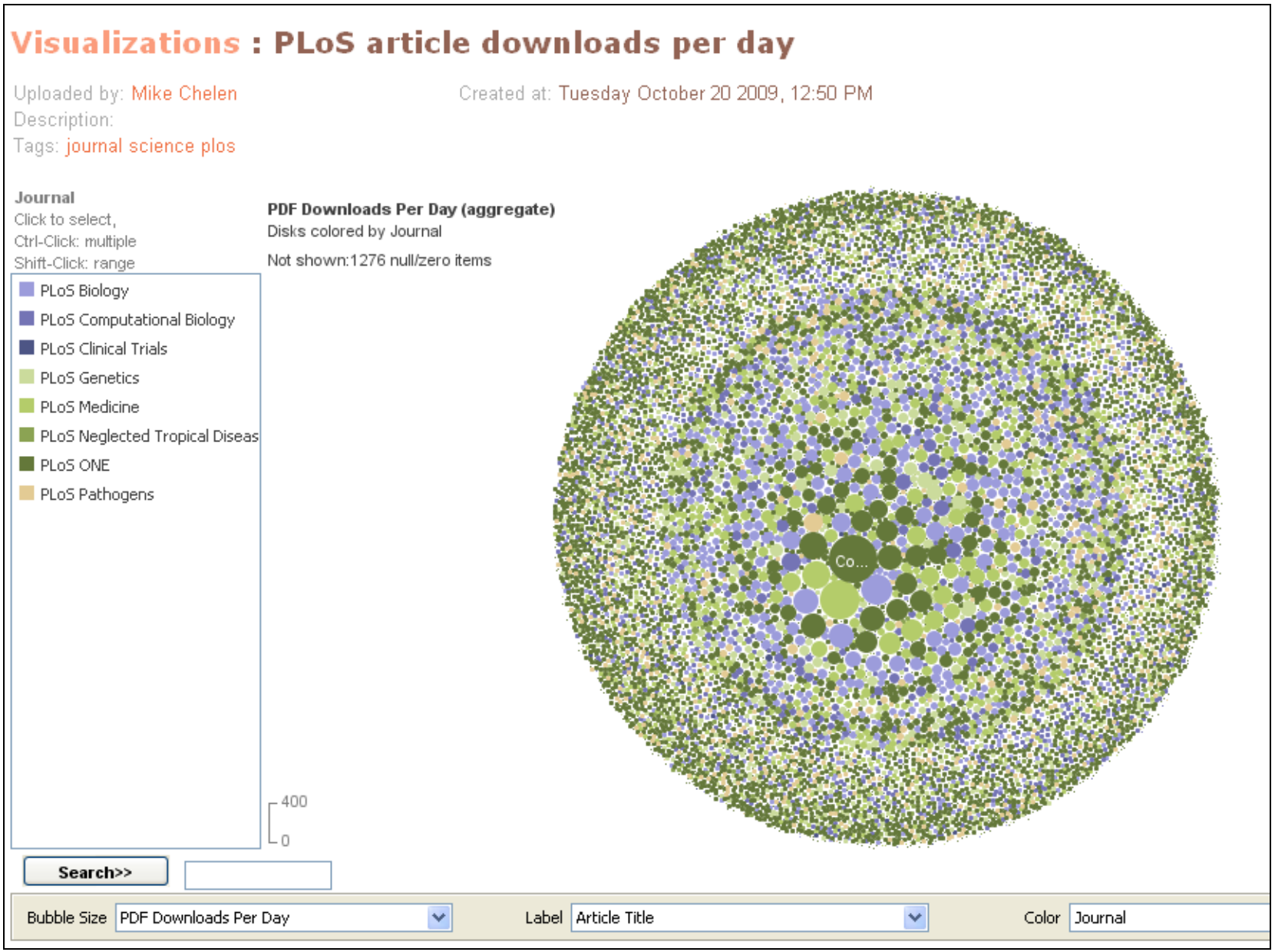
Oct 20 2009
PLoS article citations per day CrossRef and PubMed comparison

Oct 21 2009
Article citations per day grouped by journal and citation type

http://manyeyes.alphaworks.ibm.com/manyeyes/visualizations?tag=plos&sort=rating

(http://tiny.cc/ALM7) *Mike Chelen*

Evaluating the data



http://manyeyes.alphaworks.ibm.com/manyeyes/visualizations/plos-article-downloads-per-day

Evaluating the data

For doi:10.1371/journal.pone.0006022,

4 authors, 2 tags

Authors

Computer Science/ Applications

Science Policy

~45 bookmarkers, 57 unique tags

Delicious

CiteULike

Jason Priem

Evaluating the data

RESEARCH ARTICLE OPEN ACCESS

A Principal Component Analysis of 39 Scientific Impact Measures

Article | Metrics | Related Content | Comments: 3

Johan Bollen[1*], Herbert Van de Sompel[1], Aric Hagberg[2#], Ryan Chute[1#]

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To **add a note**, highlight some text. Hide notes

Make a general comment

Jump to

Abstract
Introduction
Methods
Results and Discussion
Supporting Information
Author Contributions
References

Abstract Top

Background

The impact of scientific publications has traditionally been expressed in terms of citation counts. However, scientific activity has moved online over the past decade. To better capture scientific impact in the digital era, a variety of new impact measures has been proposed on the basis of social network analysis and usage log data. Here we investigate how these new measures relate to each other, and how accurately and completely they express scientific impact.

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Metrics

Total Article Views: 14137

Cited in

CrossRef (9)
PubMed Central (4)
Scopus (19)

Average Rating (1 User Rating)

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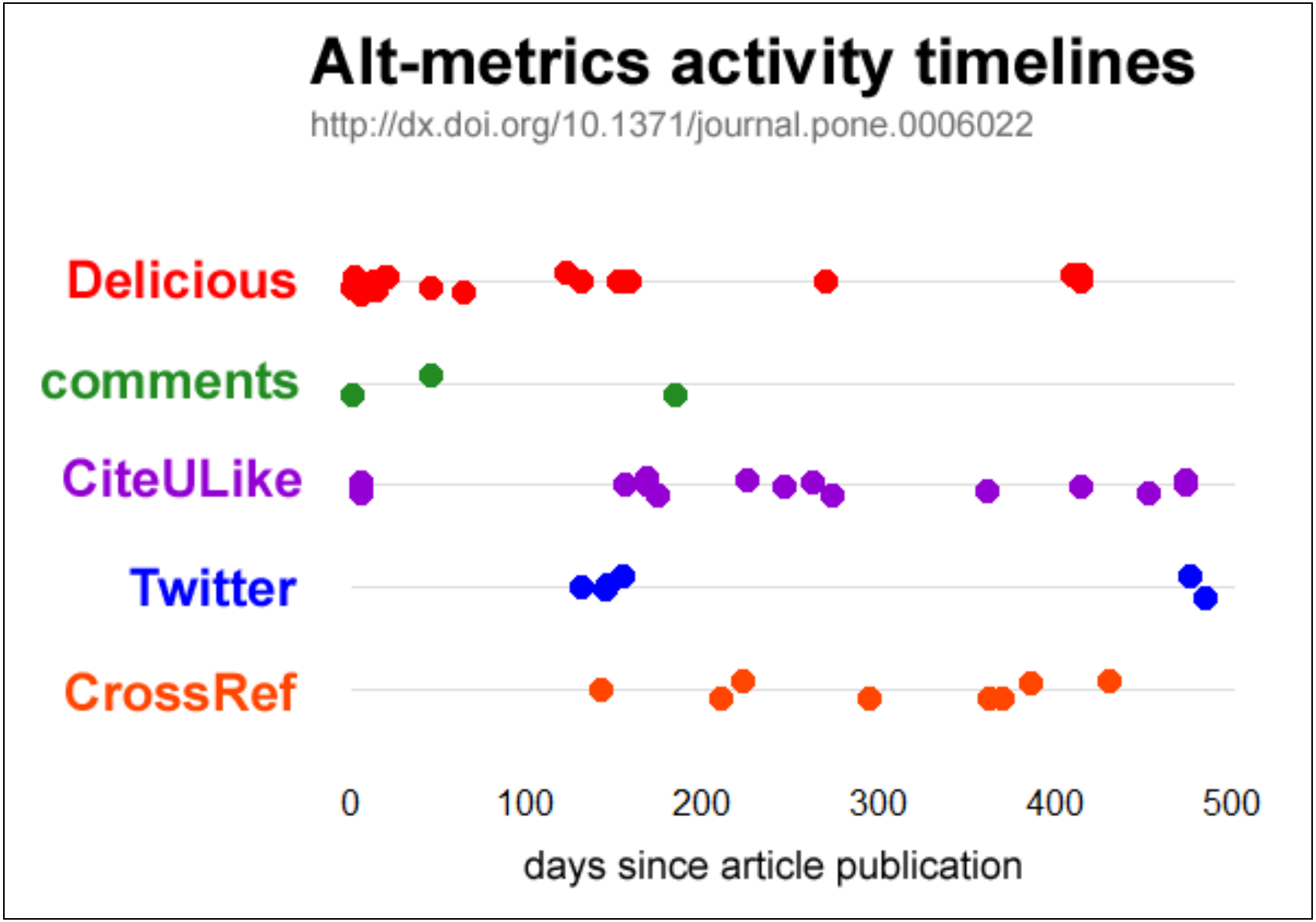
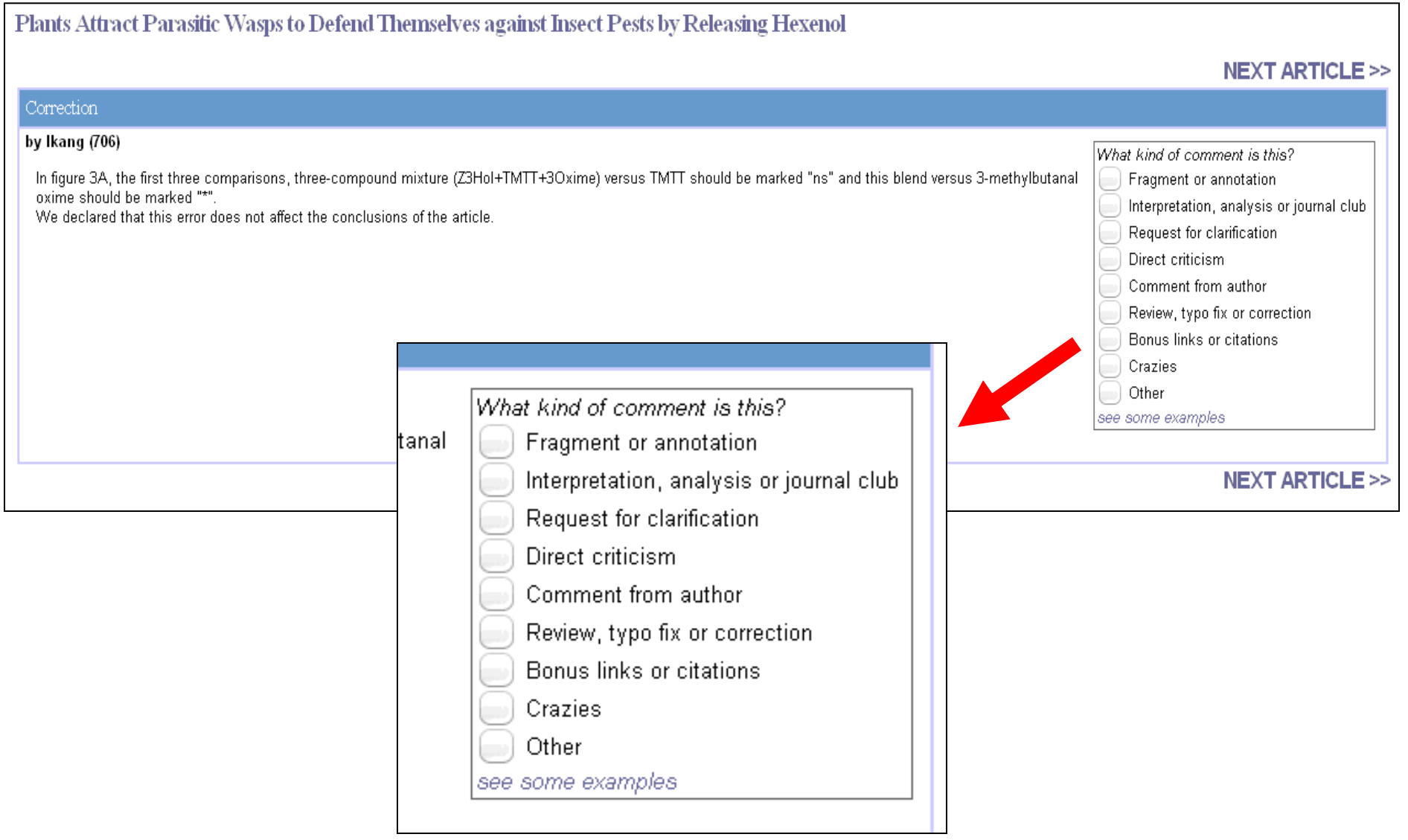
Evaluating the data



Jason Priem

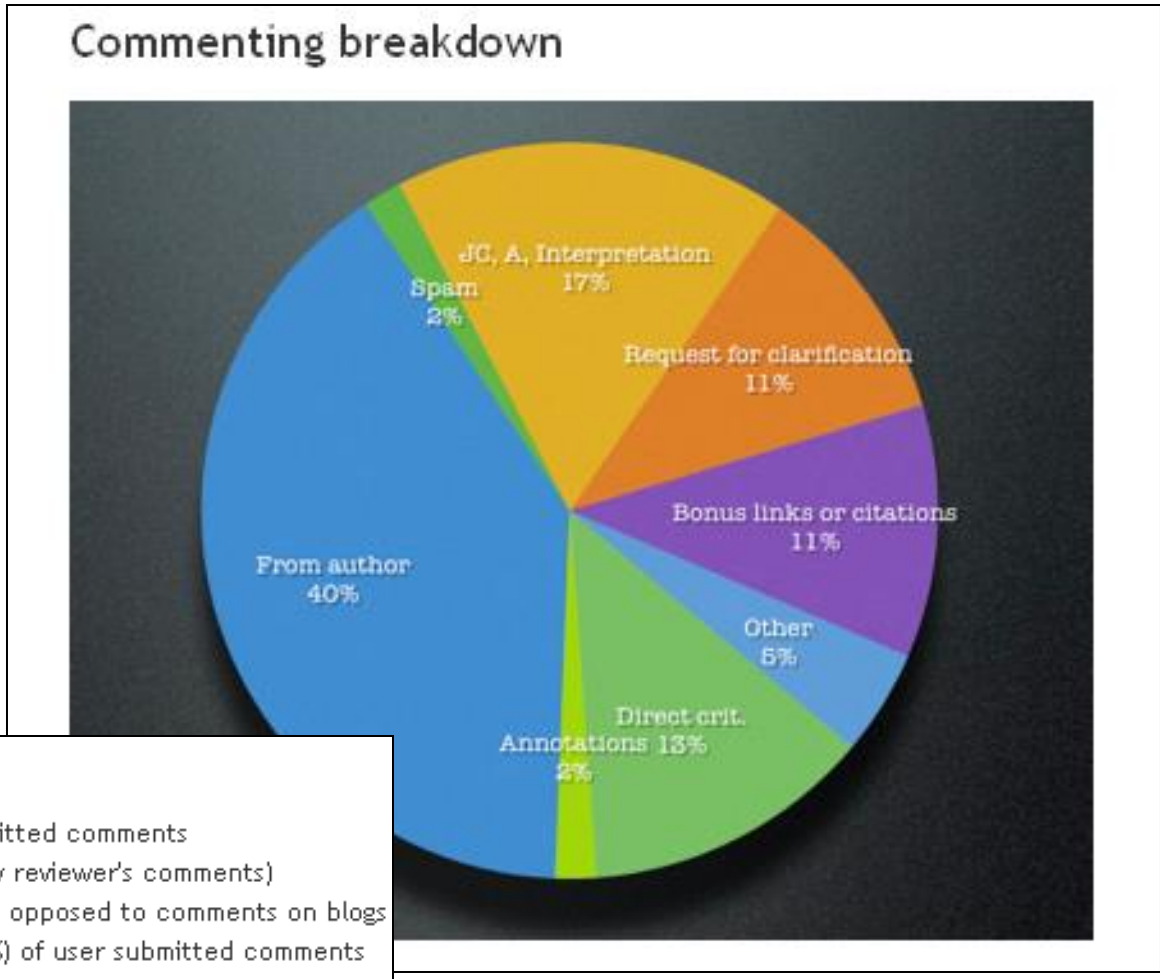
Evaluating the (commenting) data



(http://tiny.cc/ALM5)

Euan Adie

Evaluating the (commenting) data

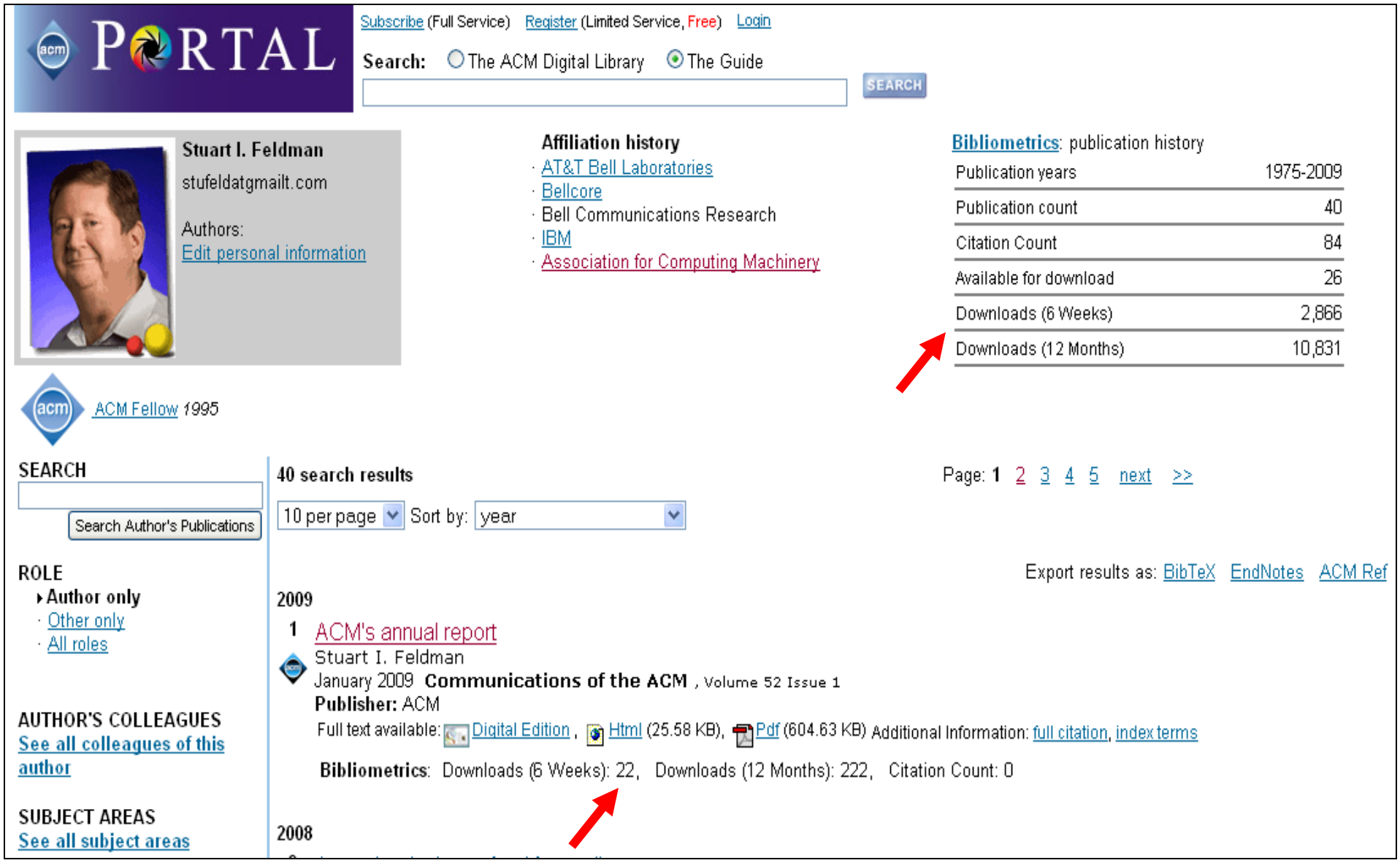


Summary

- 18% of PLoS ONE papers have reader or author submitted comments
- 39% if you count comments added by editors (usually reviewer's comments)
- Very few comments are of the 'omg, wow' variety (as opposed to comments on blogs
- authors are responsible for a high percentage (~ 40%) of user submitted comments
- 17% of user submitted comments contain interpretation or journal club style precis
- 13% of user submitted comments are direct criticism
- 11% are direct questions or requests for clarification
- These %s are similar to what we saw in the BMC dataset
- The trackbacks protocol is inadequate for picking up blog chatter about papers

http://blogs.nature.com/wp/nascent/2009/02/commenting_on_scientific_artic.html

Extending Article Level Metrics



The Assoc for Computing Machinery *(http://tiny.cc/ALM8)*

The Dirty War In
for Examining a

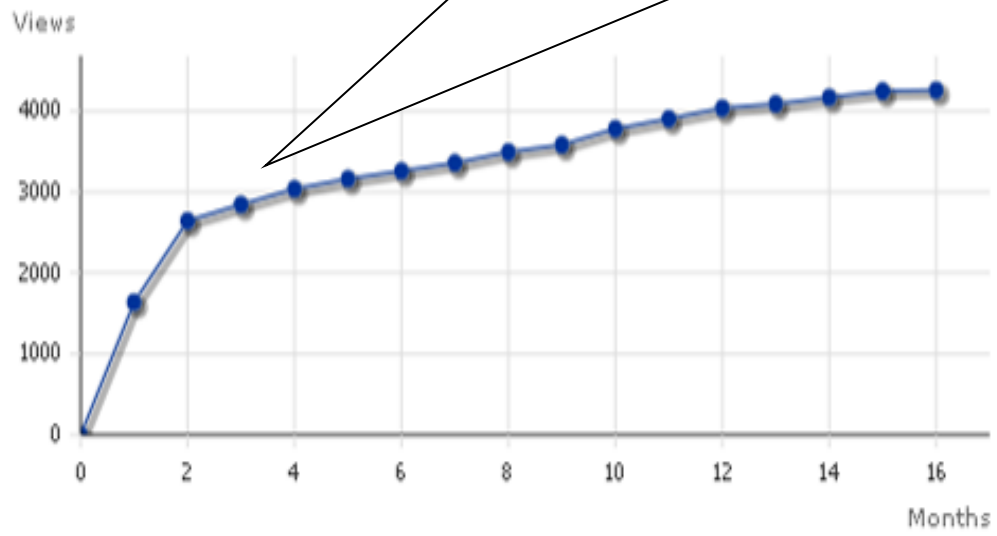
Article | Metrics

Article Usage

Total Article Views: 425

Breakdown by View Type
HTML Page Views: 3431
PDF Downloads: 781
XML Downloads: 45

Cumulative Views from Dec 16, 2008 (ar 3, 2010*



*Data refer to views from the PLoS Medicine Web site only

"The Dirty War Index (DWI) method has been adapted for use in NATO military environments to monitor civilian, woman and child casualties. This version of the DWI is called a 'Civilian Battle Damage Assessment Ratio' (CBDAR).
Since October 2009, the CBDAR methodology has been used by NATO forces in Southern Afghanistan in order to reduce the possibility of injuring Afghan civilians. The methodology has identified a number of military activities that historically lead to civilian mortality that has led to NATO changing procedures."

Average Rating (0 User Ratings)
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Rape in War Is Common, Devastating, and Too Often Ignored

The Dirty War Index: Statistical Issues, Feasibility, and Interpretation

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Next steps for article-level metrics

- More data sources
  - F1000, Mendeley, media coverage, tweets
- Impact that is hard to measure
- Expert analysis and tools
- Broader adoption
  - By publishers
  - By tenure committees, funders etc
- Develop and adhere to standards

What is the ‘more’?

- Digg
- Reddit
- Zotero
- Tweets
- Delicious
- Facebook
- Mendeley
- Wikipedia
- FriendFeed
- Google Scholar
- Mainstream Media
- Measuring the unmeasurable

Alternative Metrics ('Alt-Metrics')

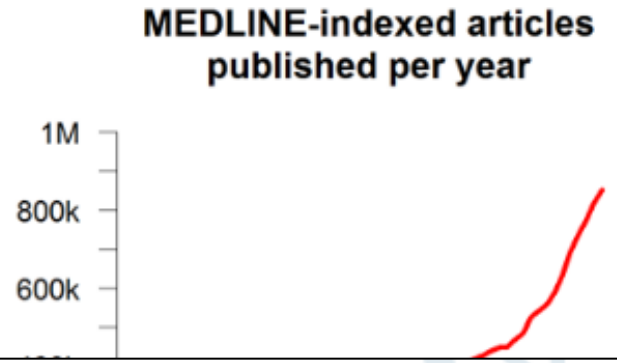
Alt-metrics: a manifesto

version 1 – released October 26, 2010

No one can read everything. We rely on filters to make sense of the scholarly literature, but the narrow, traditional filters are being swamped. However, the growth of new, online scholarly tools allows us to make new filters; these alt-metrics reflect the broad, rapid impact of scholarship in this burgeoning ecosystem. We call for more tools and research based on alt-metrics.

As the volume of academic literature explodes, scholars rely on filters to select the most relevant and significant sources from the rest. Unfortunately, scholarship's three main filters for importance are failing:

- Peer-review has served scholarship well, but is beginning to show its age. It is slow, encourages conventionality, and fails to hold reviewers accountable. Moreover, given that most papers are eventually published somewhere,

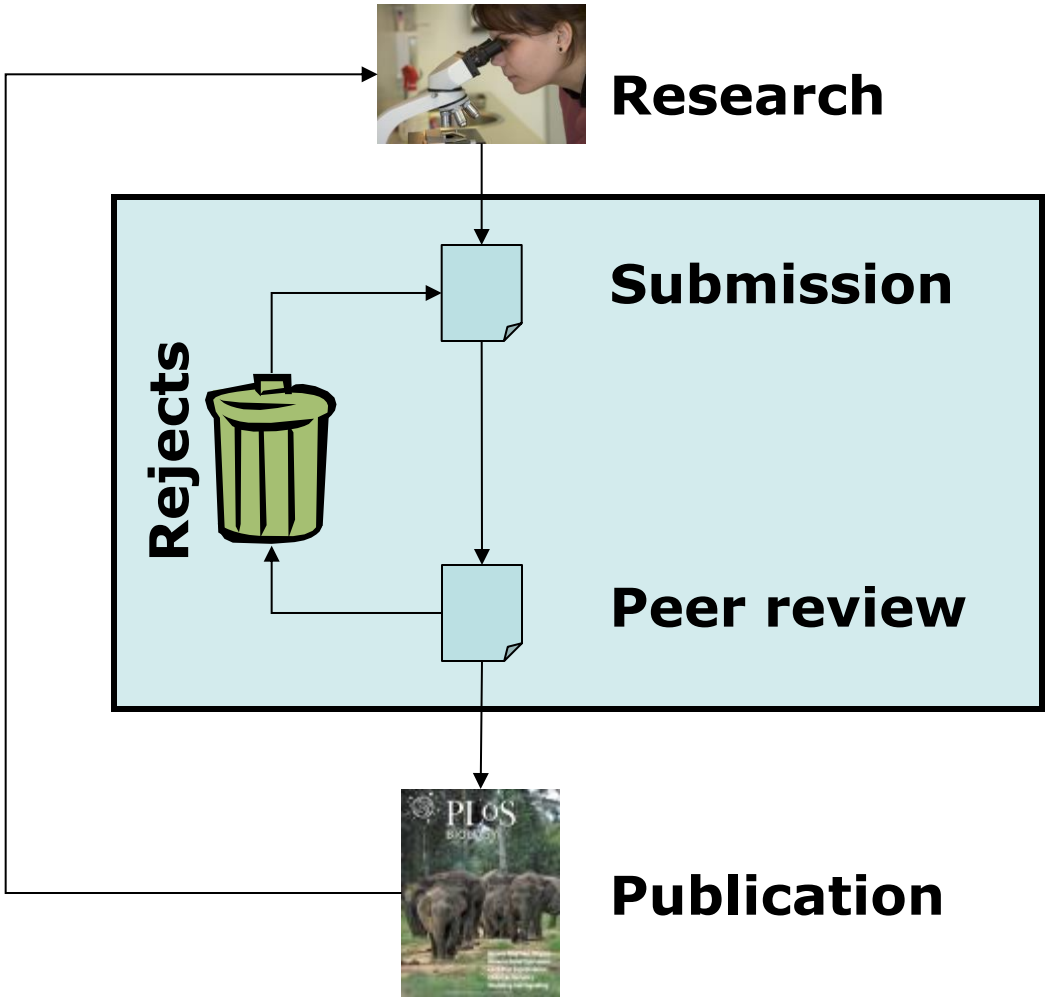


http://altmetrics.org/manifesto/

Priem, Taraborelli, Groth, Neylon

www.plos.org

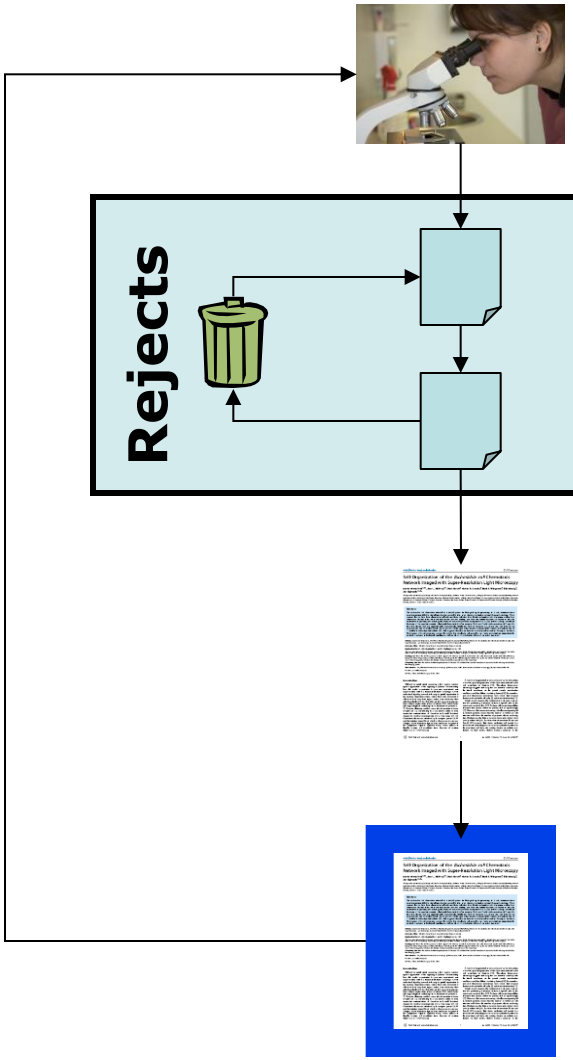
The life cycle of a research article



2-3 Experts
Is it rigorous?
Good enough?
Right audience?
Takes months/years

Journal name is key

Accelerating research communication



2-3 Experts
Is it rigorous?
Good enough?
Right audience?
Takes weeks/months

Focus on the article

Enhanced article
Article-level metrics