

Bibliométrie 101

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de Montréal



érudit

Plan

- Intro
- Sources de données
- Désaccords en science
- Les « altmetrics »
- Effets pervers
- Développement de collections (si on a le temps!)

Évaluation de la recherche

- Traditionnellement: évaluation par les pairs
 - À tous les niveaux
- Limites de l'évaluation par pairs
 - Subjectivité, coûteuse, difficile pour grands groupes
- Passage de l'évaluation par les pairs à l'évaluation plus « quantitative »
- Institutionnalisation des indicateurs
 - Particulièrement en Europe, Asie

Bibliométrie

- La bibliométrie fait le “décompte” des documents scientifiques publiés (articles, livres, actes de conférences, etc.) afin de mesurer l’activité scientifique et technologique
- La prémisse de base de la bibliométrie est que les nouvelles connaissances sont incorporées dans la littérature scientifique. En mesurant la littérature scientifique, on mesure donc la production des connaissances

Source de données

Journal et titre de l'article

PHYSICAL REVIEW C 76, 044312 (2007)

In-beam γ -ray and α -decay spectroscopy of ^{170}Ir

Auteurs

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(Received 8 June 2007; published 16 October 2007)

Abstract

Excited states in the highly neutron deficient odd-odd nucleus ^{170}Ir have been investigated. The experiment was performed using the $^{112}\text{Sn}(^{60}\text{Ni}, pn)^{170}\text{Ir}$ reaction and employing the recoil-decay tagging technique. Gamma rays were detected using the JUROGAM γ -ray spectrometer and those belonging to ^{170}Ir were selected based on recoil identification provided by the RITU gas-filled recoil separator and the GREAT spectrometer at the RITU focal plane. A partial level scheme of ^{170}Ir is presented for the first time. New α -decay branches are assigned to ^{170}Ir and a tentative level structure for ^{166}Re is deduced from a study of the α -decay fine structure and the associated α - γ correlations.

DOI: [10.1103/PhysRevC.76.044312](https://doi.org/10.1103/PhysRevC.76.044312)

PACS number(s): 23.20.Lv, 27.70.+q, 23.60.+e, 29.30.Kv

Références

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Diversité des données entrantes

FUEL PRICES, REGIONAL DIETS AND COOKING HABITS IN THE ENGLISH INDUSTRIAL REVOLUTION (1750–1830)*

I

INTRODUCTION

Historians are increasingly interested in energy use and its regime changes. Many scholars use E. A. Wrigley's framework defining organic and mineral economies. An organic economy, according to Wrigley's formulation, is one in which all energy used by humans came from plants, animals, wind or water. The resources available to such a society were inherently limited by annual solar radiation and the ability of plants to process it through photosynthesis. Meanwhile, mineral economies are those which have escaped these limitations through the use of coal, petroleum and other fossil fuels. Additional energy resources allow mineral economies to manufacture more goods and support substantially larger populations.¹ Wrigley's broad formulation captures many essential differences between pre-modern and modern societies. Energy historians are particularly interested in manufacturing and treat the increasing use of coal as a key development of the English Industrial Revolution. However, domestic cooking and heating have always consumed large amounts of coal, wood or peat energy but these uses have received less attention from energy historians. The different ways in which the three fuel sources burn affected the cooking habits and diets of those who relied upon them.

This article looks at the impact of fuel availability on English cooking habits between 1750 and 1830, a period before the large-scale shipment of coal across inland southern England. All three

* This article benefited from the comments of the anonymous reviewers, Jay Young, Ben Bryce, Madeleine Chartrand, Jeannette M. Neeson and Paul Warde, along with audiences at the Institute for Historical Research's Food in History Conference and the Toronto Environmental History Network's monthly seminar.

¹ E. A. Wrigley, *Energy and the English Industrial Revolution* (Cambridge, 2010), 9–16.

fuel sources were widely used in different regions, allowing for a broad comparison of the ways in which they shaped early modern diets. Wood-burning regions suffered from the constraints of an organic economy, as supply could not increase with population growth, and rising prices came to preclude many families from cooking their own food. The situation was quite different in coal-burning regions — many of which were industrializing — as vast underground fuel reserves allowed supply to increase with population growth. Ultimately, these contrasting diets reflected the continuing divergent economic specialization in agriculture in wood-burning regions and manufacturing in coal-burning areas.

With the exception of Wrigley's recent survey, historical scholarship on energy use generally focuses on individual fuel sources, including numerous works on coal mining or woodland management, such as the multi-volume *History of the British Coal Industry*.² These works effectively describe technological changes in coal mining, the role of coal in industrial growth, and the use of coppicing to maximize wood growth. Yet the focus on particular sources of energy overlooks the reality that different fuel sources were interchangeable for many purposes and English people tended to use whatever source was the cheapest in terms of money or labour. Transport largely determined the price of coal and the mineral fuel was used differently in areas where it was local and cheap compared with areas where it came from further afield and was consequently more expensive. By analysing the

² Michael W. Flinn, with the assistance of David Stoker, *The History of the British Coal Industry, Volume 2, 1700–1830: The Industrial Revolution* (Oxford, 1984); John Hatcher, *The History of the British Coal Industry, Volume 1, Before 1700: Towards the Age of Coal* (Oxford, 1993); J. Benson and R. G. Neville (eds.), *Studies in the Yorkshire Coal Industry* (Manchester, 1976); John Benson, *British Coalminers in the Nineteenth Century: A Social History* (London, 1980); T. S. Ashton and Joseph Sykes, *The Coal Industry of the Eighteenth Century* (1929), 2nd edn (New York, 1967); John Langton, *Geographical Change and Industrial Revolution: Coalmining in South West Lancashire, 1590–1799* (Cambridge Geographical Studies, xi, Cambridge, 1979); Trevor Raybould, 'Aristocratic Landowners and the Industrial Revolution: The Black Country Experience c.1760–1840', *Midland History*, ix (1984); Peter Kirby, 'Attendance and Work Effort in the Great Northern Coalfield, 1775–1864', *Economic History Review*, lxxv, 3 (2012); Oliver Rackham, *Trees and Woodland in the British Landscape: The Complete History of Britain's Trees, Woods and Hedgerows*, revised edn (London, 2001); and Ian D. Rotherham, David Egan and Paul A. Ardron, 'Fuel Economy and the Uplands: The Effects of Peat and Turf Utilisation on Upland Landscapes', in Ian D. Whyte and Angus J. L. Winchester (eds.), *Society, Landscape and Environment in Upland Britain* (Society for Landscape Studies Supplementary Series, ii, Birmingham, 2004).

Hampshire in naval provisioning. Population grew everywhere, fuel prices rose and consumption declined in many communities. These declines were most severe in wood-burning regions where production could not increase to meet rising demand. As a result, purchased wheaten bread replaced cooking across most of Hampshire and amongst some people in the eastern parts of Yorkshire. Potatoes were increasingly eaten in areas where residents had sufficient fuel to cook in the early nineteenth century.

Some culinary habits were connected to climate and growing conditions. Oats grew on the damp, cool hills of the Yorkshire coalfield while wheat did not. Potatoes grew better in the peaty soils of south-east Yorkshire or south-west Hampshire although climate and soil did not preclude their cultivation in other regions. Moreover, the local fuel supplies were also well suited to the preferred methods of cooking those foods. Oatcake cooked well on open-grate coal fires of the type preferred for heating homes in Pudsey. It also cooks quickly and was well-suited to the lifestyles of weaving families with ample employment for all adults. Similarly, potatoes roasted well in the embers of a peat fire or boiled in cauldrons over open flames. Meanwhile, the small quantities of wood burnt in wheat-growing northern Hampshire made cooking difficult by the late eighteenth century. Despite women being less likely to work for wages, residents there increasingly relied upon purchased wheaten bread and the county had a high proportion of bakers by 1831. Cheap fuel thus allowed residents to cook more satisfying food while heating their homes. In some locations, such as Pudsey and Sheffield, they also continued to heat their homes when not cooking. A combination of warmer homes, better food and more employment meant that living conditions were better on the West Riding coalfield than in agricultural regions. Fuel availability thus shaped the living standards of English people during the Industrial Revolution. Many of these differences mirror those between organic and mineral economies. Both the economies and domestic lives were very different for those living in regions of local coal, non-local coal, peat or wood.

Sources de données

- Principale source de données: les bases de données bibliographiques
 - Les bases de données ne sont pas optimisées pour la production d'indicateurs bibliométriques, mais plutôt pour la recherche bibliographique
- Caractéristiques principales:
 - Indexation de l'ensemble des adresses des auteurs
 - Indexation de l'ensemble des références citées
 - Large couverture

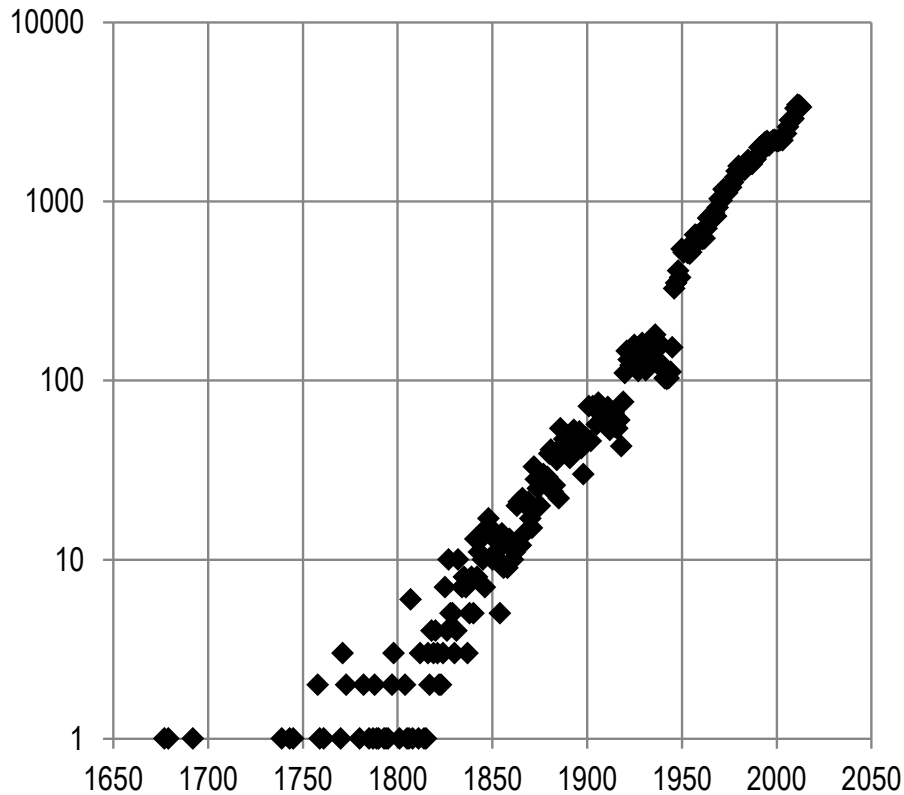
Outils de recherche documentaire et de mesure

- Science Citation Index (1963)
 - Revues sélectionnées sur la base des citations reçues
 - Web of Science: 21,000 / 34,000 revues
- Scopus: 23,800 revues + livres
- Google Scholar : tout ce qui est en ligne
- Dimensions.ai: tout ce qui a un DOI
- OpenAlex: : tout ce qui a un DOI (mais gratuite)
- Publier dans ces revues est devenu ce qui compte
 - Effets sur les revues, effets sur les langues de diffusion
 - Dérive du facteur d'impact: d'indicateur pour le développement des collections à indicateur de la qualité de la recherche

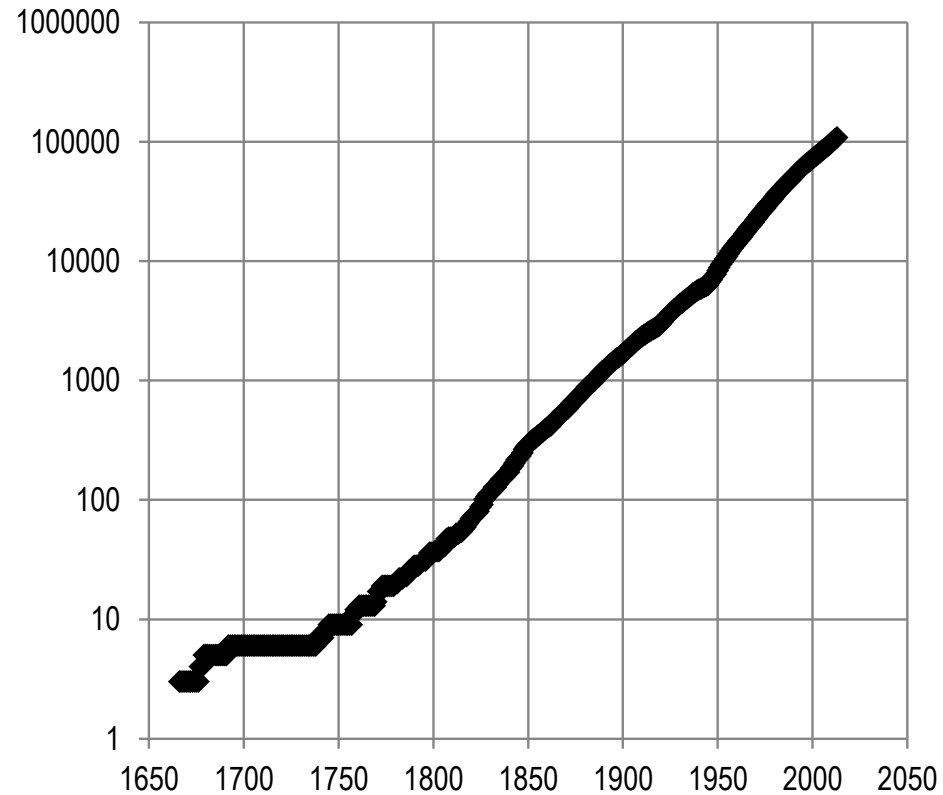
Croissance exponentielle de la science

Création de nouvelles revues (Base de données ULRICH)

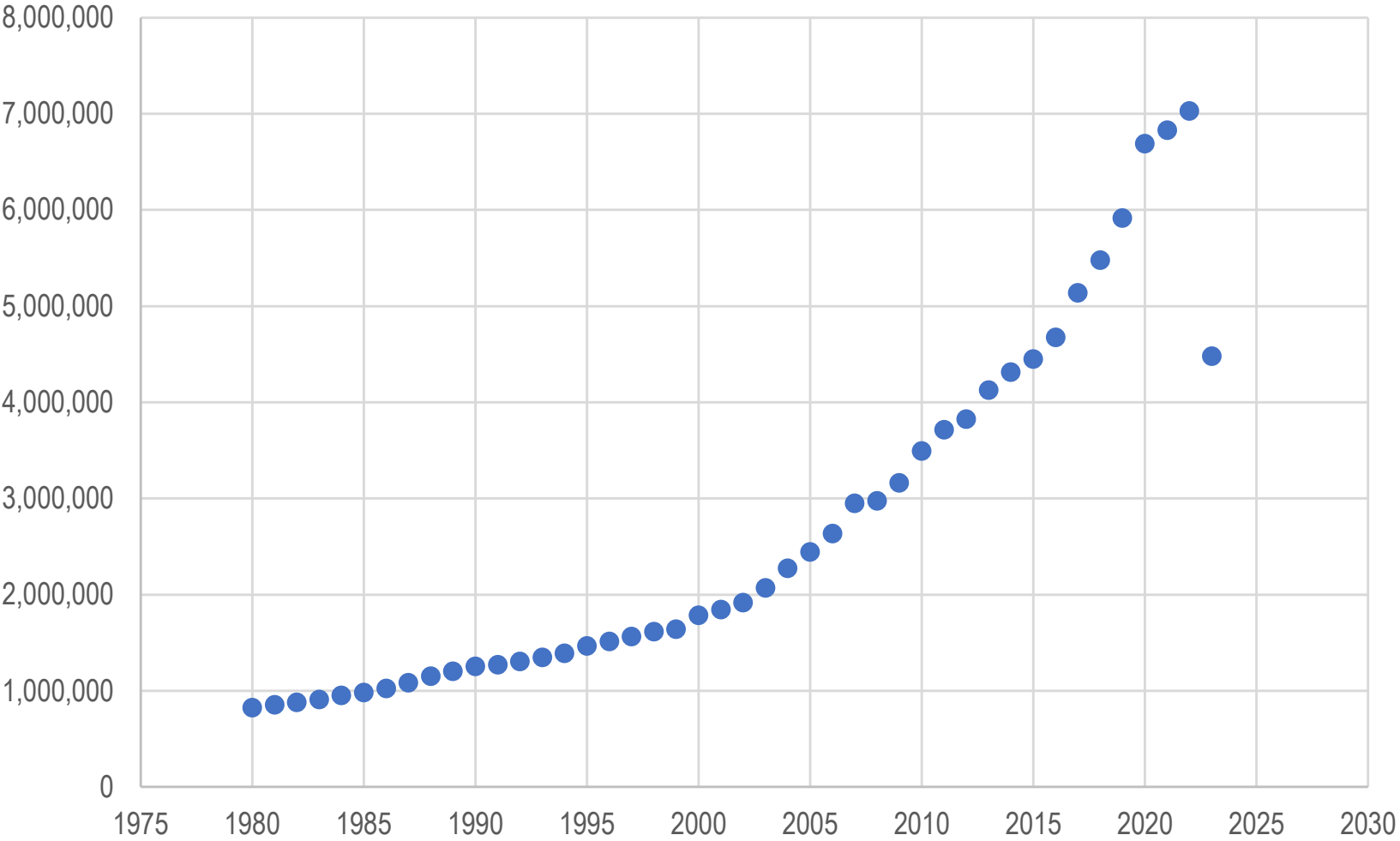
Nouvelles revues



N cumulatif de revues



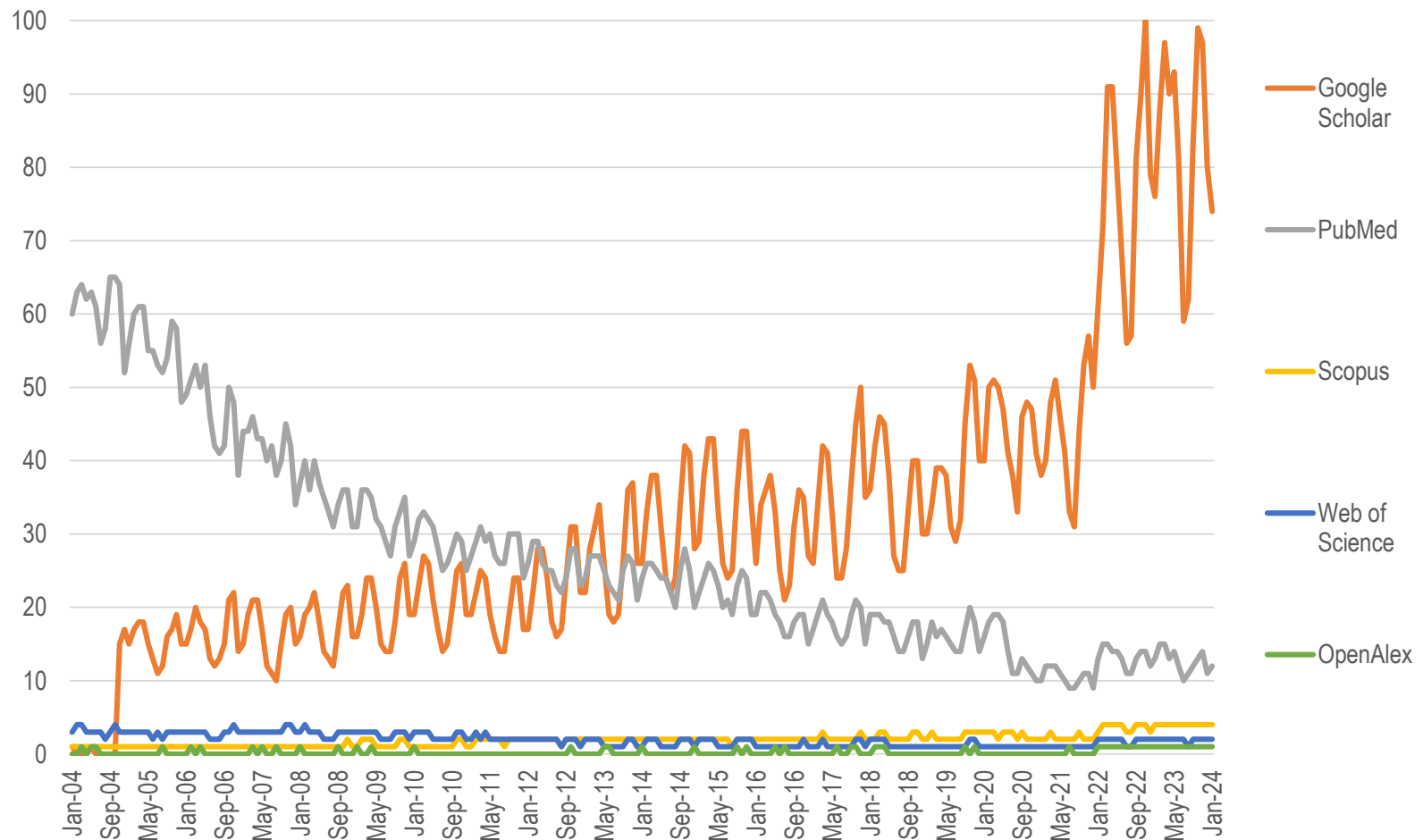
Nombre d'articles publiés (dimensions.ai)



Limites des sources de données

- Équilibre en exhaustivité, qualité et accessibilité
 - Dimensions vs WoS vs Google Scholar
 - L'inclusivité a des conséquences
 - Revues prédatrices
 - Qualité des données
- Qualité des données
 - Erreurs, désambiguïsation
 - Adoption de standards
 - WoS > Scopus > Dimensions > Google Scholar
- Faible couverture des livres
- Faible couverture de la littérature nationale

Importance relative des sources de données



Indicateurs principaux

- Nombre d'articles
- Spécialisation
- Collaboration
- Interdisciplinarité
- Impact (citations)
 - Nombre moyen de citations (normalisation)
 - Facteur d'Impact
 - H-Index
- Importance de la classification disciplinaire et de la normalisation

Nombre de publications

- Comptage unitaire: équivalent au CV
 - inflation
- Comptage fractionnaire: $1 / n$. auteurs
- Premiers auteurs
- Auteurs de correspondance
- Comptage harmonique : importance des auteurs décroît en fonction de leur rang dans la liste

Les résultats diffèrent en fonction de la méthode utilisée

Indice de spécialisation

- Mesure l'importance relative des disciplines et spécialités dans un ensemble d'articles (individus, institutions, pays, etc.)

Proportion d'articles publiés par
l'entité X dans la discipline Y

S.I. = _____

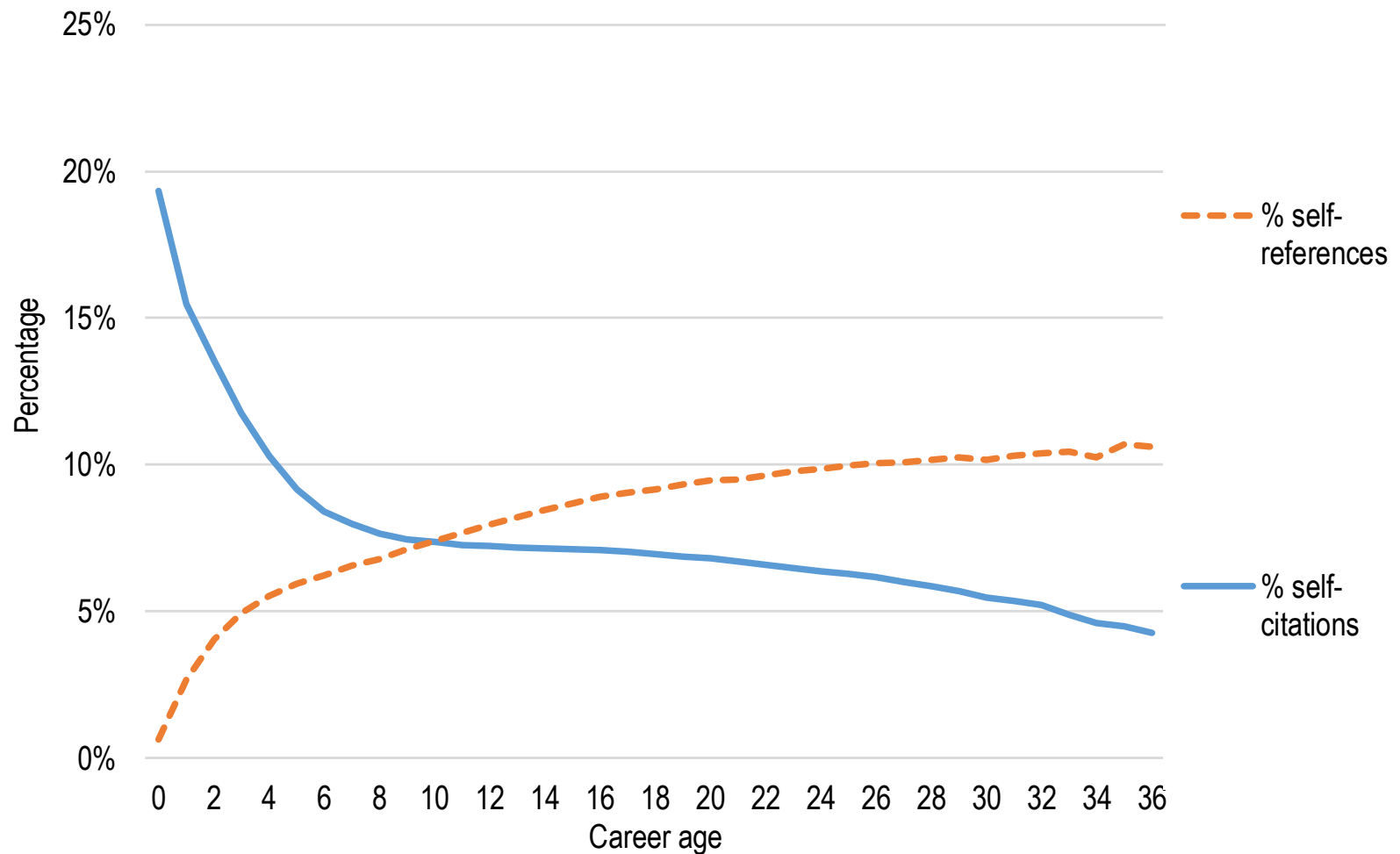
Proportion d'articles publiés à
l'échelle mondiale dans la discipline Y

- Plus haut que 1 = spécialisation dans la discipline
- Plus bas que 1 = non-spécialisé
- Jeu à somme nulle à l'échelle de l'entité

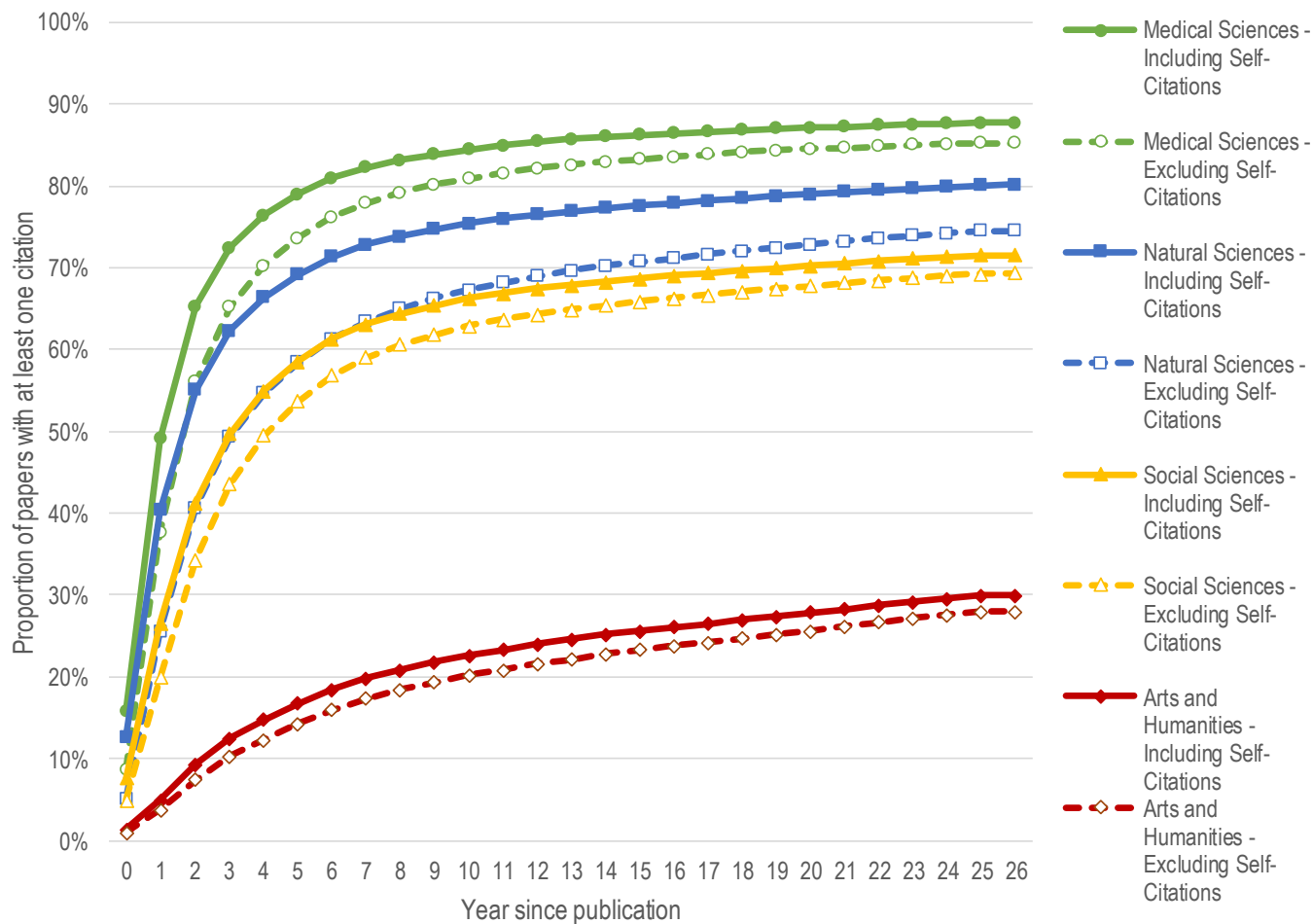
Les citations

- Souvent utilisé comme un indicateur de l'impact scientifique
 - Auto-citations?
 - Articles jamais cités?
 - Corrélation entre les citations et « l'excellence »?
- Varie selon...
 - La discipline
 - Le temps
 - La source (Web of Science, Scopus, Google Scholar, etc.)

Auto-citations et auto-références



(Un)citedness



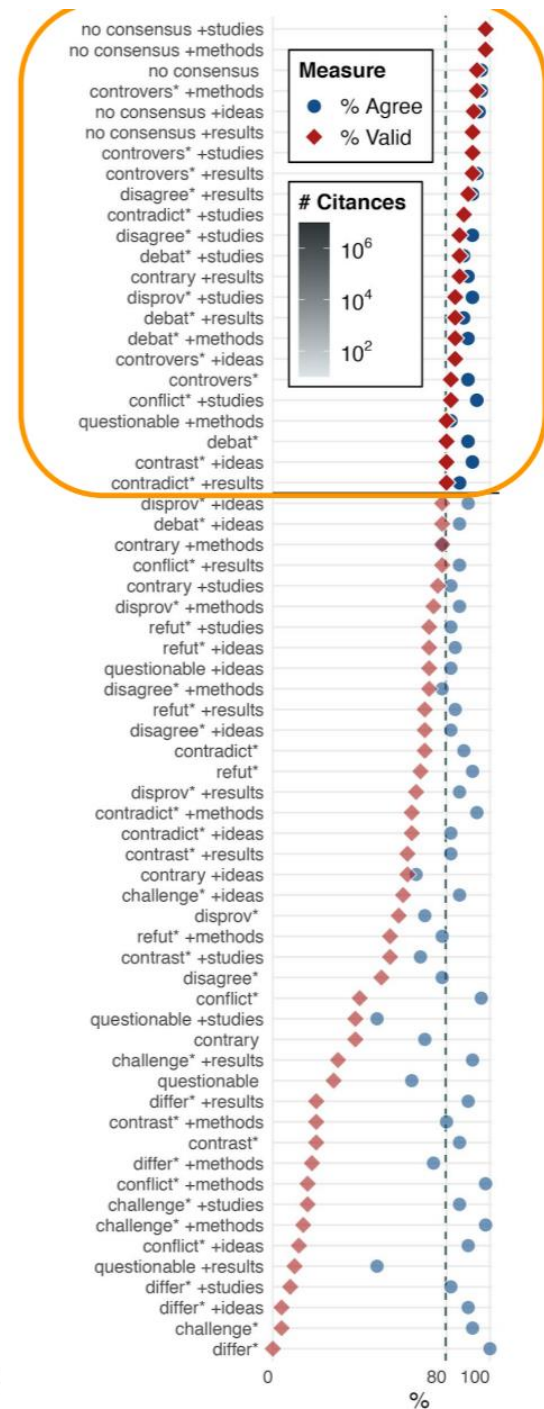
Typologie des citations (Moravcsik et Murugesan, 1975)

- Conceptuelle (Conceptual): Liée aux concepts et théories du document cité.
- Opérationnelle (Operational): Liée à un outil ou à une technique du document cité.
- Fondamentale (Organic): La référence est absolument nécessaire afin de comprendre le contenu du document citant.
- Superficielle (Perfunctory): La référence n'est pas nécessaire à la compréhension du contenu du document citant; elle signale l'existence d'un document sur un sujet similaire, corollaire, etc.
- Confirmative (Confirmative): Le contenu du document citant est en accord avec le contenu du document cité.
- Infirmative (Infirmative): Le contenu du document citant est en désaccord avec le contenu du document cité.

Désaccord en sciences

<http://dakotamurray.me/talk/2020-disagreement/>

- Utilisation du plein texte des articles d'Elsevier
- Validation manuelle par deux codeurs des divers termes trouvés dans le plein texte
- Seuil à 80% d'accord et 80% de validité



Désaccord en sciences

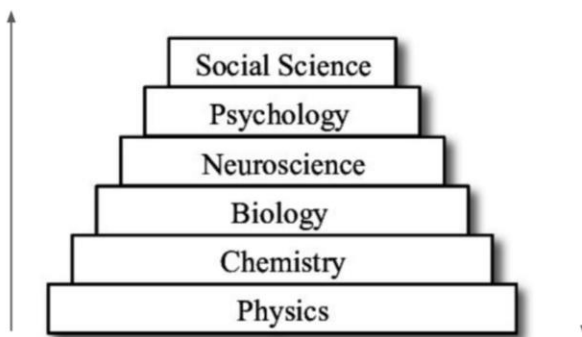
<http://dakotamurray.me/talk/2020-disagreement/>

Disagreement by field

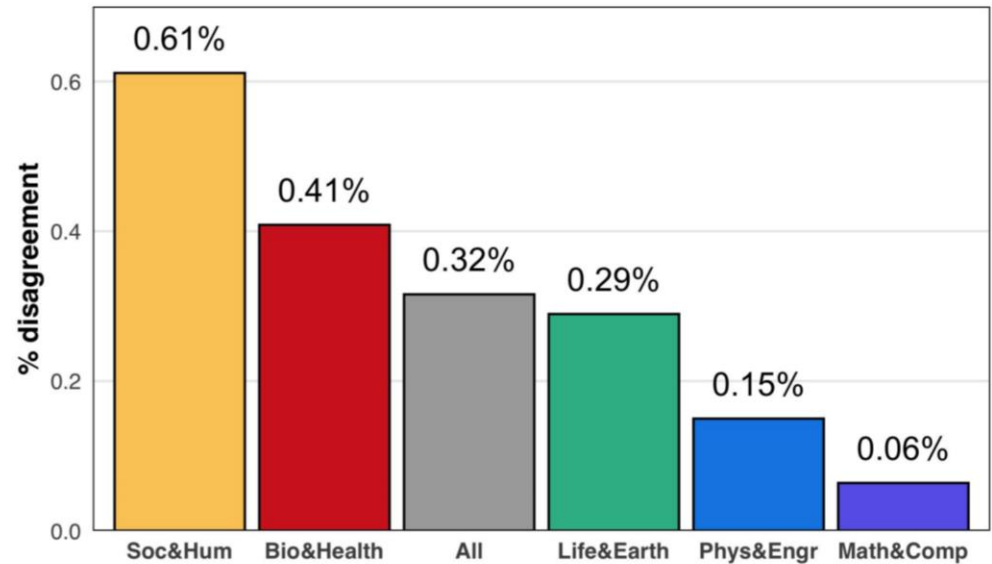
Auguste Comte's
Hierarchy of sciences



More complex,
Less consensus

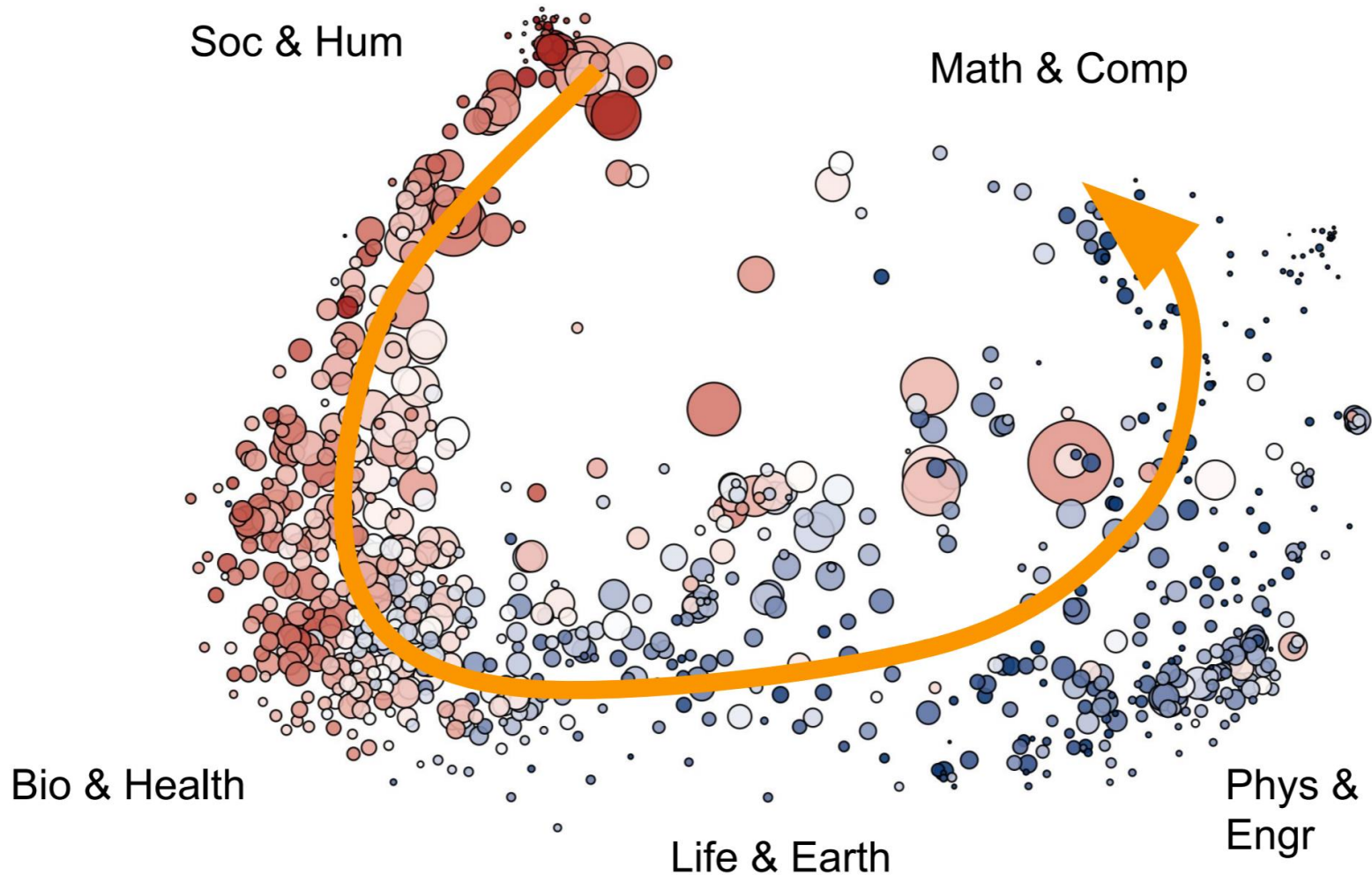


Less complex
More consensus



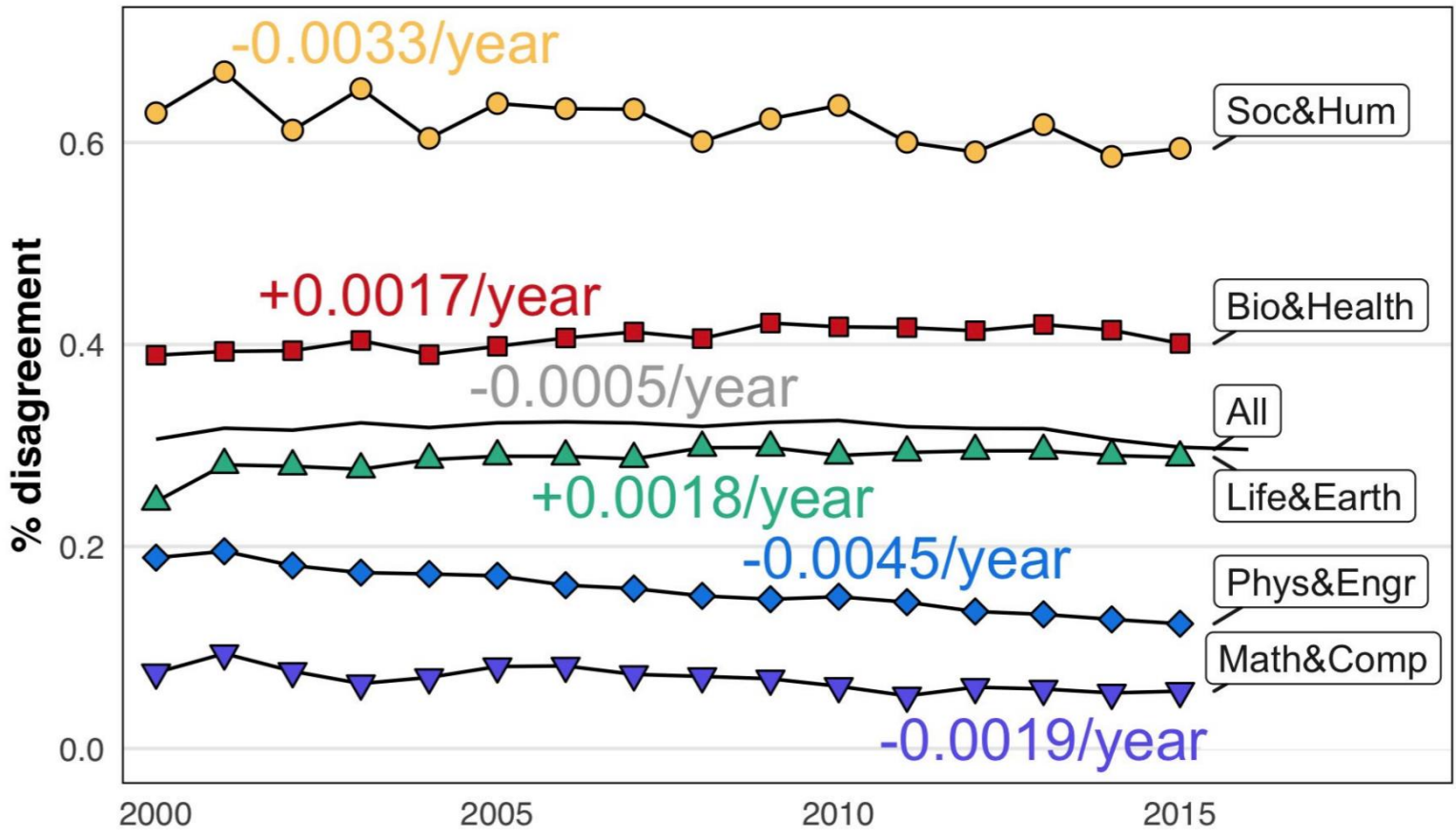
Désaccord en sciences

<http://dakotamurray.me/talk/2020-disagreement/>



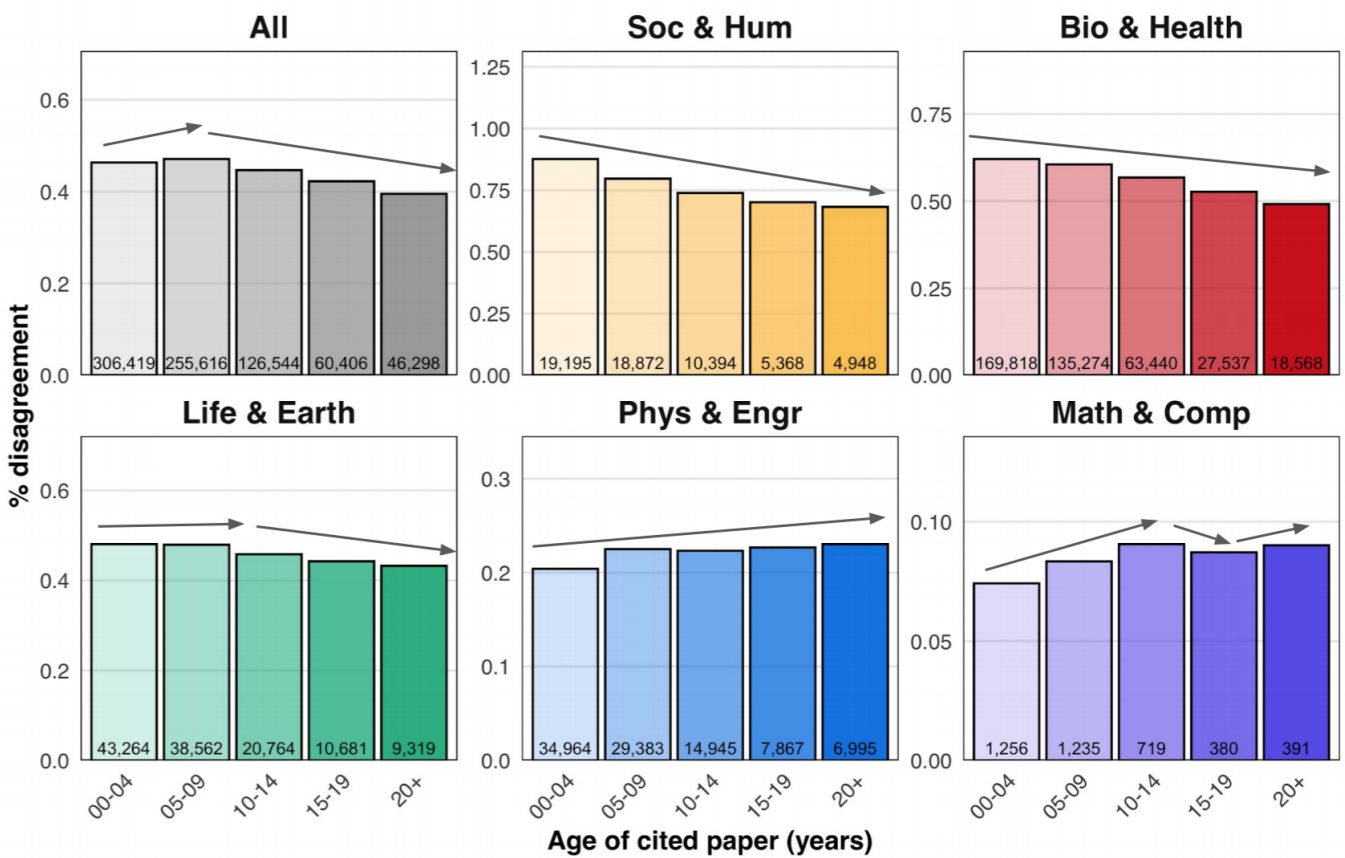
Désaccord en sciences

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Désaccord en sciences

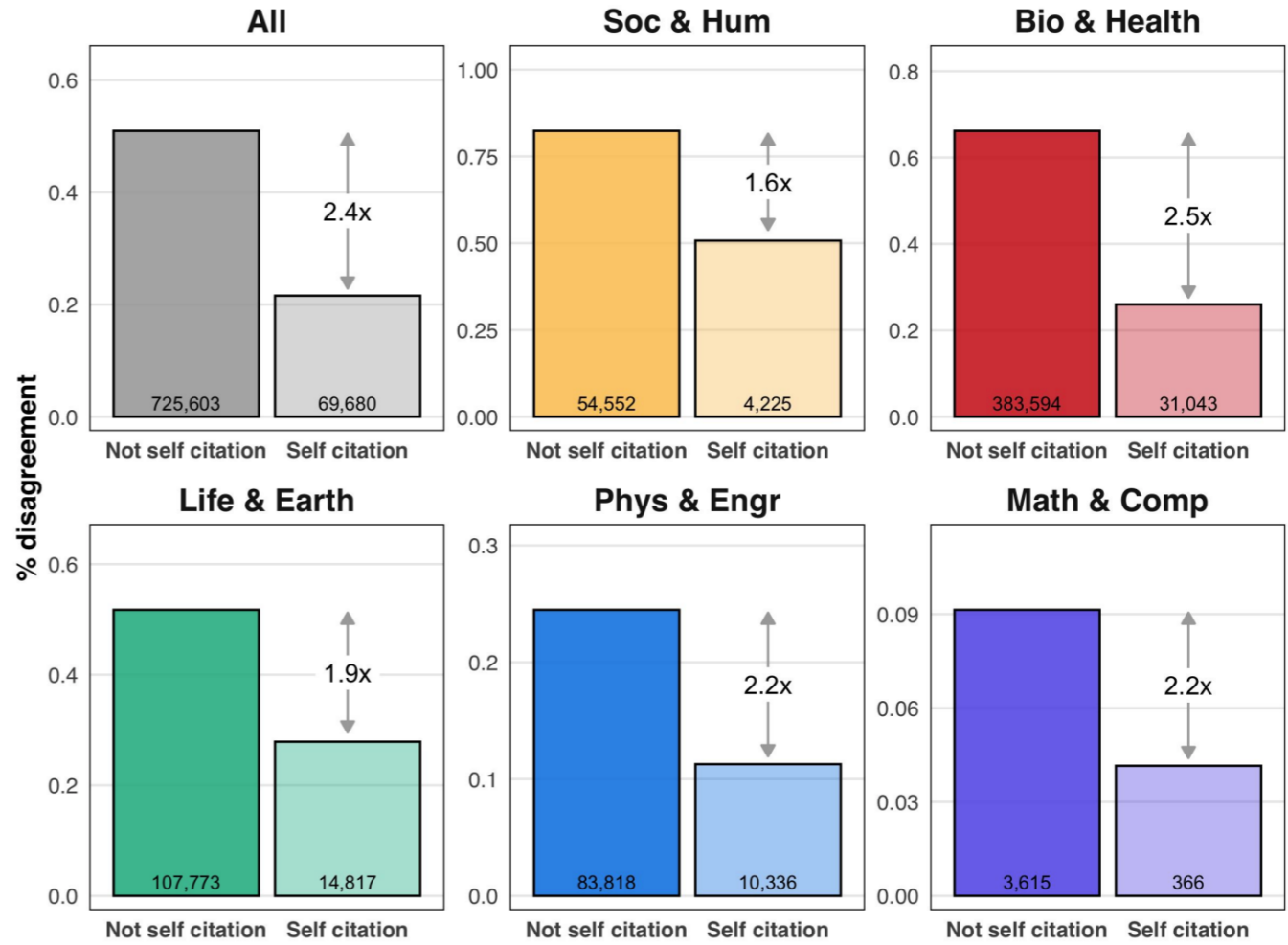
<http://dakotamurray.me/talk/2020-disagreement/>



Relative age of cited paper (years)

Désaccord en sciences

<http://dakotamurray.me/talk/2020-disagreement/>



Altmetrics: le concept

- **Utilisation alternative** et visibilité des publications *sur les médias sociaux:*



citeulike

FACULTYof1000

...

utilisation plus traditionnelle:



html views



pdf views

...

- **Formes alternatives** de diffusion des connaissances






YouTube

...

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RESEARCH ARTICLE

7,527	17	45	17
VIEWS	CITATIONS	SAVES	SHARES

The Effects of Aging on Researchers' Publication and Citation Patterns

Yves Gingras , Vincent Larivière, Benoît Macaluso, Jean-Pierre Robitaille

Published: December 29, 2008 • DOI: 10.1371/journal.pone.0004048

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Abstract

The average age at which U.S. researchers receive their first grant from NIH has increased from 34.3 in 1970, to 41.7 in 2004. These data raise the crucial question of the effects of aging on the scientific productivity and impact of researchers. Drawing on a sizeable sample of 6,388 university professors in Quebec who have published at least one paper between 2000 and 2007, our results identify two turning points in the professors' careers. A first turning point is visible at age 40 years, where researchers start to rely on older literature and where their productivity increases at a slower pace—after having increased sharply since the beginning of their career. A second turning point can be seen around age 50, when researchers are the most productive whereas their average scientific impact is at its lowest. Our results also show that older professors publish fewer first-authored papers and move closer to the end of the list of co-

Subject Areas 

- Aging
- Careers
- Careers in research
- Creativity
- Science policy
- Scientists

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The Effects of Aging

Yves Gingras, Vincent Larivière, B

Published: December 29, 2008 • DOI: 10.1371/journal.pone.0004048

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7

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17	1	1	Search

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7,527 17 45 17

increases at a slower pace—after having increased sharply since the beginning of their career. A second turning point can be seen around age 50, when researchers are the most productive whereas their average scientific impact is at its lowest. Our results also show that older professors publish fewer first-authored papers, and move closer to the end of the list of co-

Creativity
Science policy
Scientists

Les altmetrics en action: Altmetric.com

nature International weekly journal of science

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NATURE | LETTER

日本語要約



Video game training enhances cognitive control in older adults

J. A. Anguera, J. Boccanfuso, J. L. Rintoul, O. Al-Hashimi, F. Faraji, J. Janowich, E. Kong, Y. Larraburo, C. Rolle, E. Johnston & A. Gazzaley

[Affiliations](#) | [Contributions](#) | [Corresponding authors](#)

Nature 501, 97–101 (05 September 2013) | doi:10.1038/nature12486
Received 16 January 2013 | Accepted 18 July 2013 | Published online 04 September 2013

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Cognitive control is defined by a set of neural processes that allow us to interact with our complex environment in a goal-directed manner¹. Humans regularly challenge these control processes when attempting to simultaneously accomplish multiple goals (multitasking), generating interference as the result of fundamental information


Editor's summary العربية

Our ability to multitask and our capacity for cognitive control decline linearly as we age. A new study shows that cognitive training can help repair this decline. In older adults aged between 60 and ...

▼

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Rewing up brain skills



PLAY 00:00 / 03:07

A video game can improve declining cognitive

Les altmetrics en action: Altmetric.com

The image shows a screenshot of a Nature journal article page. The article title is "Video game training e... older adults". The authors listed are J. A. Anguera, J. Boccanfuso, J. L. Rinto, Larraburo, C. Rolle, E. Johnston & A. Ga. The article is from Nature 501, 97-101 (05 September 2013). The Altmetric score is 1044, which is highlighted in a green rounded rectangle. The score is broken down into various social media and news outlet mentions: 577 tweets, 39 Facebook pages, 20 Google+ posts, 64 news outlets, 1 Reddit post, 27 blog posts, 3 F1000 articles, and 2 videos. The score is noted to be in the 99th percentile of tracked articles of a similar age in all journals and in the 99th percentile of tracked articles of a similar age in Nature.

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Nature 501, 97–101 (05 September 2013)
Received 16 January 2013 | Accepted 18

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Cognitive control is defined by a set of n... complex environment in a goal-directed ma... control processes when attempting to simulta... (multitasking), generating interference as the result of fundamental information

A video game can improve declining cognitive

Online attention

Altmetric score (what's this?)

- Tweeted by **577**
- On **39** Facebook pages
- Mentioned in **20** Google+ posts
- Picked up by **64** news outlets
- 1 Reddit
- Blogged by **27**
- 3** F1000
- 2** Video

View less

This Altmetric score means that the article is:

- in the 99 percentile (ranked 13th) of the 84,617 tracked articles of a similar age in all journals
- in the 99 percentile (ranked 5th) of the 964 tracked articles of a similar age in *Nature*

Les altmetrics en action: Altmetric.com

The image shows a screenshot of a Nature article page with an Altmetric overlay. The article title is "Video game training enhances cognitive control in older adults" by J. A. Anguera, J. Boccanfuso, J. L. Larraburo, C. Rolle, E. Johnston & others. The Altmetric overlay displays a list of tweets related to the article, including a summary of the tweet volume and individual tweets from users like Florian Ederer, Prof. Abel Méndez, Gene Cross, Galen Bodenhausen, and Syngé.

nature International

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NATURE | LETTER

日本語要約

Video game training enhances cognitive control in older adults

J. A. Anguera, J. Boccanfuso, J. L. Larraburo, C. Rolle, E. Johnston & others

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Nature 501, 97–101 (05 September 2013) | Received 16 January 2013 | Accepted 11 July 2013






PDF | Citation | Reprints

Cognitive control is defined by a... complex environment in a goal-directed... control processes when attempting... (multitasking), generating interference as the result of fundamental information

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Score | Demographics | Help

So far Altmetric has seen **577** tweets from **553** accounts with an upper bound of **905,842** combined followers.

	Florian Ederer @florianederer 669 followers	I always knew that playing FIFA, Starcraft and GTA had positive effects: http://t.co/dvpS0ei5Mj	04-Sep-2013
	Prof. Abel Méndez @ProfAbelMendez 4,781 followers	Another excuse: Video game training enhances cognitive control in older adults http://t.co/ac20vKM1Py	04-Sep-2013
	Gene Cross @optixwiz 230 followers	Another excuse: Video game training enhances cognitive control in older adults http://t.co/ac20vKM1Py	04-Sep-2013
	Galen Bodenhausen @GVBodenhausen 686 followers	Video game training enhances cognitive control in older adults gated paper: http://t.co/HajMqtzFu5 ungated coverage: http://t.co/t6aOobWXsO	04-Sep-2013
	Syngé @dixy0 166 followers	Video game training enhances cognitive control in older adults http://t.co/vyeknTcM12	04-Sep-2013

Les altmetrics en action: Altmetric.com

nature
International

News Blogs **Twitter** Peer reviews Facebook Google+ Reddit Research highlights Video
Score Demographics Help

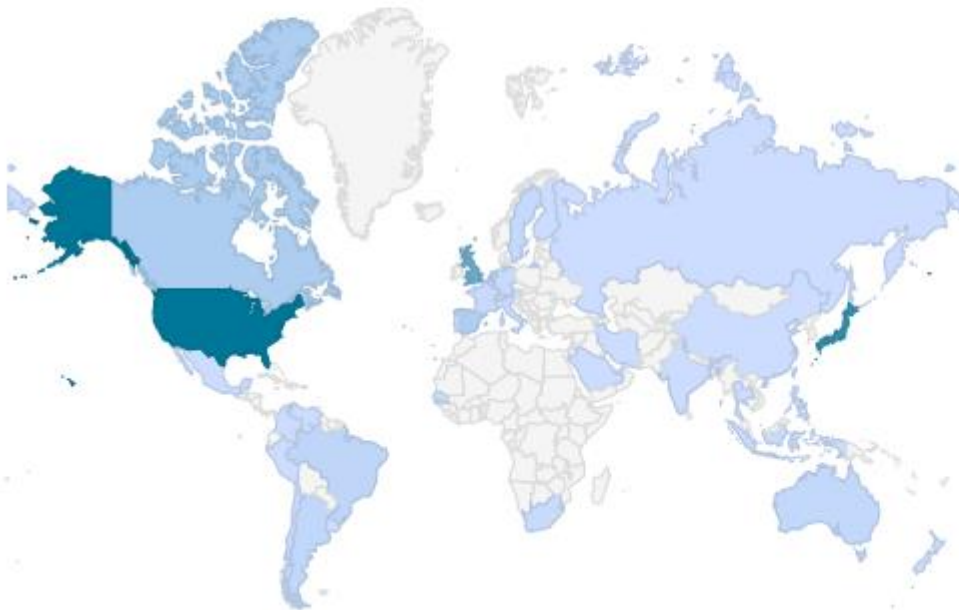
Home | News & Comment | Research

So far Altmetric has seen **577** tweets from **553** accounts with an upper bound of **905,842** combined followers.

Twitter attention

The data shown below were collected from the profiles of tweeters who shared this article. Click [here](#) to find out more about how the information was compiled.

Geographical breakdown



#	Country	As %
1	US	16%
2	JP	13%
3	GB	8%
4	CA	2%
4	ES	2%
6	NL	1%
6	BR	1%
6	AR	1%
9	BE	<1%
-	Other	8%
-	Unknown	43%

ive effects:

04-Sep-2013

trol in older adults

04-Sep-2013

trol in older adults

04-Sep-2013

s] gated paper:
XsO

04-Sep-2013

s <http://t.co/vyeknTcM12>

04-Sep-2013

Altmetrics: Critiques

- Qu'est-ce que ça mesure?
 - Quel type d'impact? Social? Scientifique?
 - Attention en ligne
- Limites:
 - Distributions tout aussi non-paramétriques que les citations
 - Peut-être facilement modifié, tricoté, influencé
 - Signification dans le processus de communication savante encore inconnu

Relation entre tweets et publications

Article de physique parmi les plus twittés

Top article de physique

Highly tweeted Physics paper



IOP PUBLISHING

IOP FTC ►►►
JOURNAL OF PHYSICS A: MATHEMATICAL AND THEORETICAL

J. Phys. A: Math. Theor. **44** (2011) 492001 (5pp)

[doi:10.1088/1751-8113/44/49/492001](https://doi.org/10.1088/1751-8113/44/49/492001)

FAST TRACK COMMUNICATION

Can apparent superluminal neutrino speeds be explained as a quantum weak measurement?

M V Berry¹, N Brunner¹, S Popescu¹ and P Shukla²

¹ H H Wills Physics Laboratory, Tyndall Avenue, Bristol BS8 1TL, UK

² Department of Physics, Indian Institute of Technology, Kharagpur, India

Received 12 October 2011, in final form 27 October 2011

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Abstract

Probably not.

Top article en écologie

Highly tweeted paper



5020

Variation in Melanism and Female Preference in Proximate but Ecologically Distinct Environments

News Blogs **Twitter** Peer reviews Weibo Facebook Google+ Score Demographics Help

So far Altmetric has seen **6,631** tweets from **6,544** accounts with an upper bound of **6,748,626** combined followers.

Score in context
Is one of the highest ever scores in this journal (ranked #1 of 362)
show more...

Mentioned by

- 3 news outlets
- 11 blogs
- 6544 tweeters
- 1 peer review site
- 4 weibo users
- 49 Facebook users
- 15 Google+ users

Readers on

BehavEcolPapers @BehavEcolPapers 37 followers
Variation in Melanism and Female Preference in Proximate but Ecologically Distinct Environments <http://t.co/qr8oO9jv2e> (Ethol) 24-Oct-2014

BO @NomadSciGirl 89 followers
Not sure how this made it through proofreading, peer review, and copyediting. Via <http://t.co/sWaswaM2X4> #addedvalue <http://t.co/8krLvthAr> 10-Nov-2014

Brendan McCormick @BrendanVolc 331 followers
Not sure how this made it through proofreading, peer review, and copyediting. Via <http://t.co/sWaswaM2X4> #addedvalue <http://t.co/8krLvthAr> 10-Nov-2014

Rene Xavier Valdez @rxv00
Not sure how this made it through proofreading, peer review, and copyediting. Via <http://t.co/sWaswaM2X4> #addedvalue <http://t.co/8krLvthAr>

Relation entre tweets et publications

Article viral de 2014

Top article en écologie

Highly tweeted paper



Score in context

Is one of the highest ever scores in this journal (ranked #1 of 362)

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Mentioned by



Readers on

Variation in Melanism and Female Preference in Proximate but Ecologically Distinct Environments

News

Help

So fa



Although association preferences documented in our study theoretically could be a consequence of either mating or shoaling preferences in the different female groups investigated (should we cite the crappy Gabor paper here?), shoaling preferences are unlikely drivers of the documented patterns both because of evidence from previous research and inconsistencies with *a priori* predictions. Our methods closely followed those of published mate choice experiments in this system (Tobler et al. 2009a,b; Plath et al. 2013),



Rene Xavier Valdez
@rxv00

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Relation entre tweets et publications

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Top article en écologie

Highly tweeted paper



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show more...

Mentioned by



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Rene Xavier Valdez
@rxv00

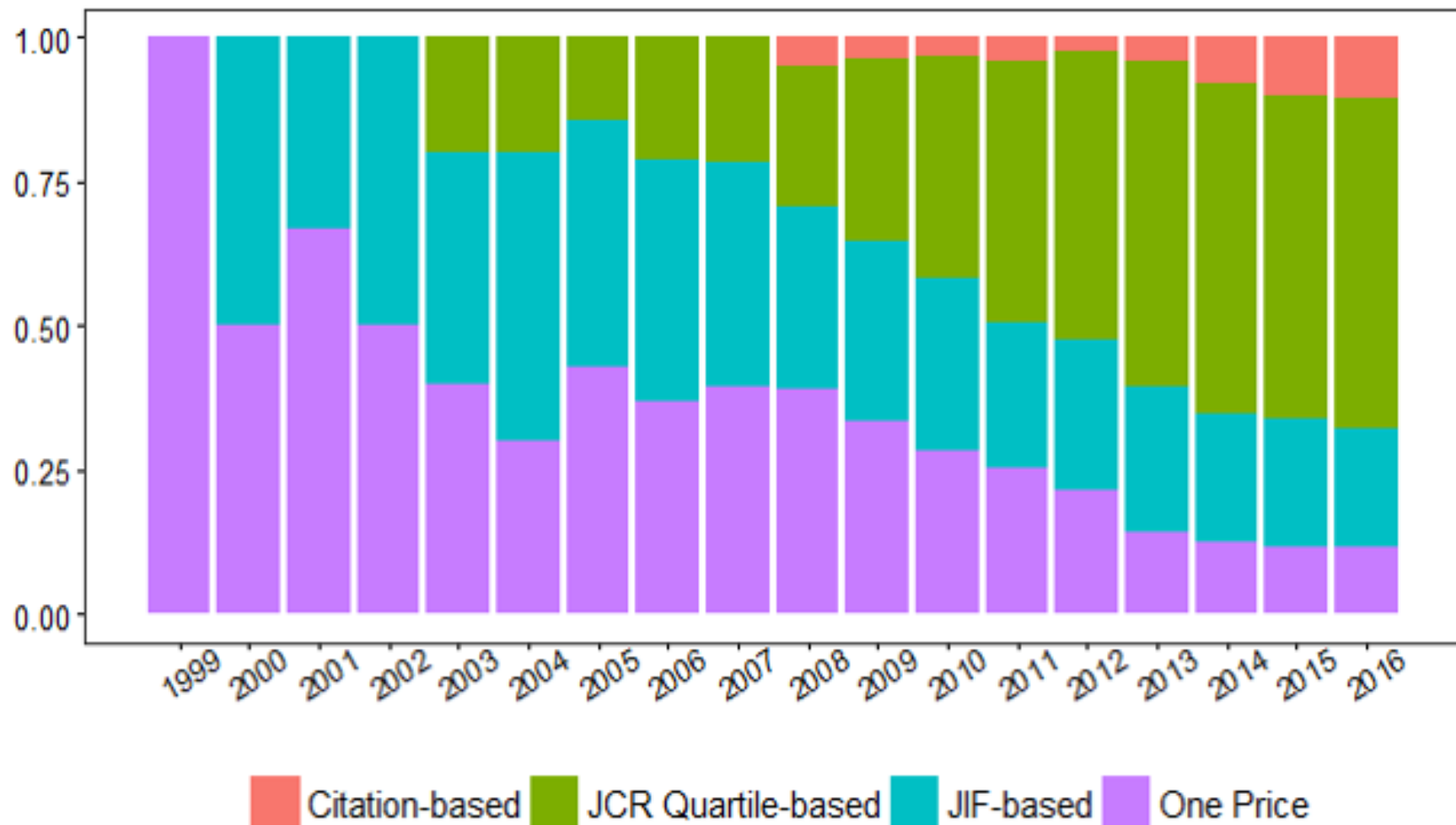
Not sure how this made it through proofreading, peer review, and copyediting. Via <http://t.co/sWaswaM2X4> #addedvalue <http://t.co/8krdlvthAr>

Effets pervers

- Multiplication des indicateurs
 - On peut trouver un indicateur selon lequel on paraît bien...
- Pertinence de la bibliométrie quand appliquée de façon transparente
 - « Hawthorne effect » et changement des comportement
 - « Taste for papers rather than taste for science »
- Fraude scientifique et pratiques d'autorat malhonnêtes (ghost writing, honorary authorships, etc.)

Primes à la publication

Quan, W., Chen, B., & Shu, F. (2017). Publish or impoverish: An investigation of the monetary reward system of science in China (1999-2016). *Aslib Journal of Information Management*, 69(5), 486-502.



Effets pervers (2)

- Emphase démesuré sur les publications savantes
 - L'articles passe d'un mode de diffusion des connaissances à un indicateur d'activité de recherche
 - Renforce le rôle des éditeurs commerciaux
- Peter Higgs a publié son dernier article en 1979—considérerait qu'il n'avait plus rien à dire...
 - On ne gagne pas le Nobel par son nombre d'articles...

Développement des collections

- Nécessité grandissante!
- Déclin du \$CAN (factures en \$US)
- Mesures d'austérité...
 - Coupes dans le secteur de l'éducation
- Sous-financement des universités québécoises
 - Dépenses par étudiant plus faibles
- Plusieurs universités ne peuvent plus se payer les grands ensembles
 - Analyses effectuées à l'UQAM, U. Laval, U. Montréal, et U. Sherbrooke
 - En cours pour 28 universités canadiennes

But de l'analyse

- Mesurer l'usage de la collection de périodiques électroniques
 - Variations entre les disciplines et éditeurs.
- Cerner les revues les plus importantes
 - Consever l'usage élevé et baisser les coûts.
- Reprendre le contrôle sur les dépenses de périodiques
 - Pour pouvoir acheter des livres...
- Nous avons accès à davantage de ressources, mais les utilisons-nous?

Indicateurs

- **Téléchargements:** Indicateur de l'utilisation des périodiques par l'ensemble de la communauté universitaire.
 - Poids important aux étudiants
- **Citations:** Indicateur de l'utilisation des périodiques par les chercheurs
 - Poids important aux professeurs
- **Consultation:** Mesure de la perception de l'importance par les membres de la communauté universitaire
 - Étudiants des cycles supérieurs et professeurs

Sources de données (UdeM)

- **ULRICH:** Dénominateur des revues existantes pour la consultation
- **Téléchargements:** Données provenant des éditeurs pour la période 2010-2013
- **Références faites par la communauté de l'UdeM:** Données de Thomson Reuters Web of Science (12 000 revues) pour la période 2010-2013
- **Consultation** de la communauté (2 213 répondants).

Quelques chiffres globaux (UdeM)

- Nombre de périodiques académiques dans ULRICH (base de la consultation): **108 716**
- Abonnements (estimation): **50 000**
 - Sous ensemble “revues académiques”: 27 000
 - Ressources ayant téléchargées une fois et plus: 16 830
- Revues citées par la communauté UdeM: **9 279**
- Mentions dans la consultation: **8 263**

On sait que l'utilisation n'est pas également répartie entre les différents périodiques.

Principes guidant l'analyse

- Toute pondération des indicateurs est nécessairement arbitraire.
 - Par conséquent, chacun des indicateurs a le même poids.
- Les pratiques de recherche (et de téléchargement, citations et mentions lors de la consultation varient par domaine.
 - Par conséquent, l'analyse devra être faite à l'échelle de chacun des grands domaines.
- Les mentions dans la consultation ont toutes la même valeur.
 - Par conséquent aucune pondération différenciée n'est attribuée aux titres pour la recherche ou l'enseignement ou aux différents statuts de répondants.

Loi de Bradford

- Dispersion des publications scientifiques dans les différents périodiques
- Samuel Clement Bradford (1878-1948), bibliothécaire scientifique
- Deux jeux de données:
 - Articles publiés entre 1928 et 1931 et listés dans les bibliographies sur la géophysique appliquée préparées par la London Science Library
 - Articles publiés entre 1931 et 1933 et listés dans les bibliographies sur la lubrification préparées par la London Science Library

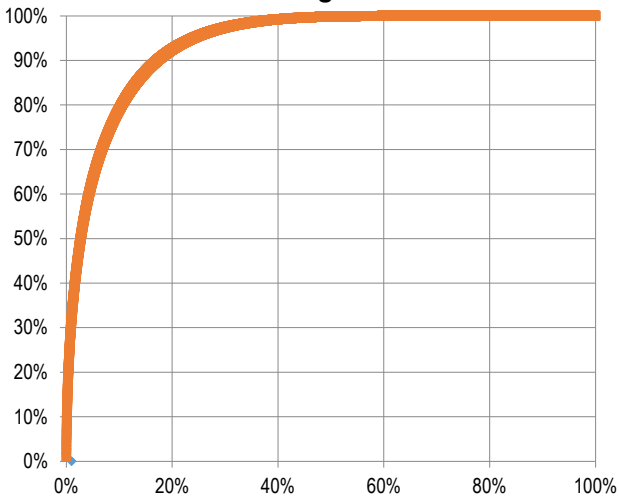
Loi de Bradford (2)

- Résultats: Trois catégories de revues scientifiques
 - Une première catégorie de 8 revues contient 110 articles
 - Une seconde catégorie de 29 revues contient 133 articles
 - Une troisième catégorie de 127 revues contient 152 articles.
- Ainsi, pour chacun des deux domaines, les publications scientifiques sont concentrées dans un nombre restreint de revues.

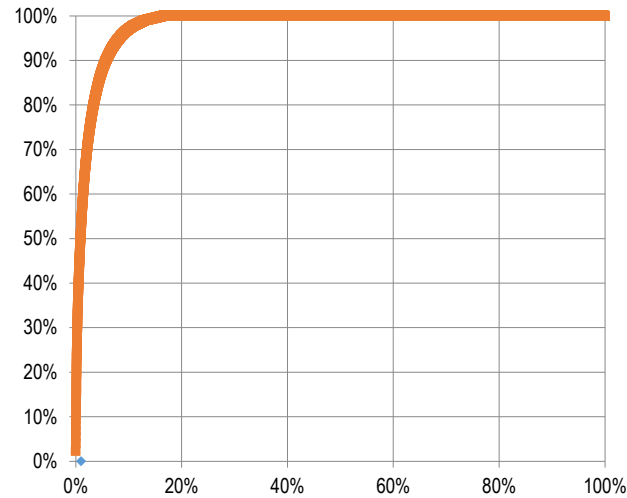
Résultats

Sciences sociales et humaines

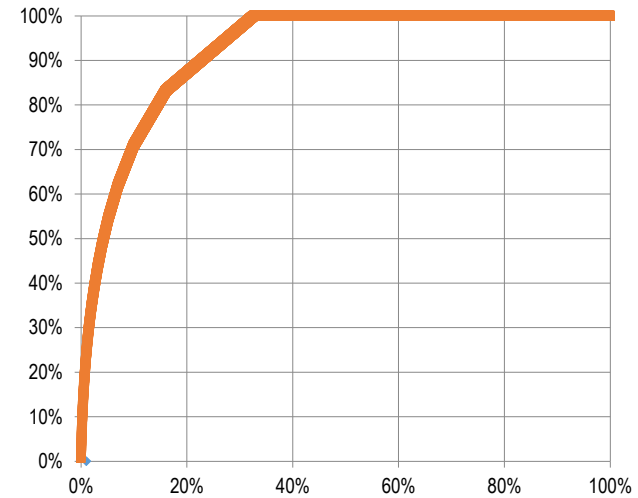
Téléchargements



Références



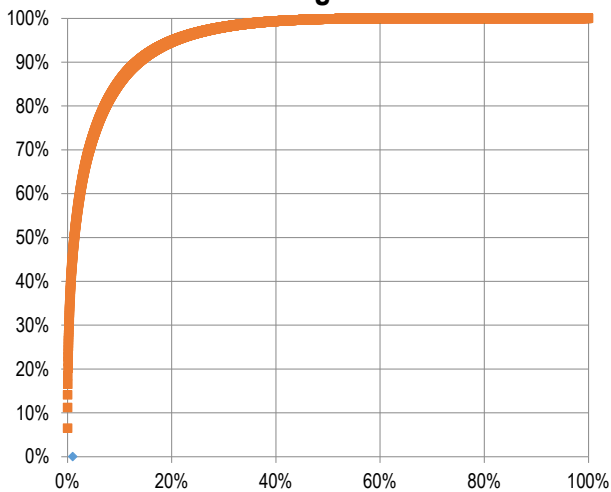
Mentions



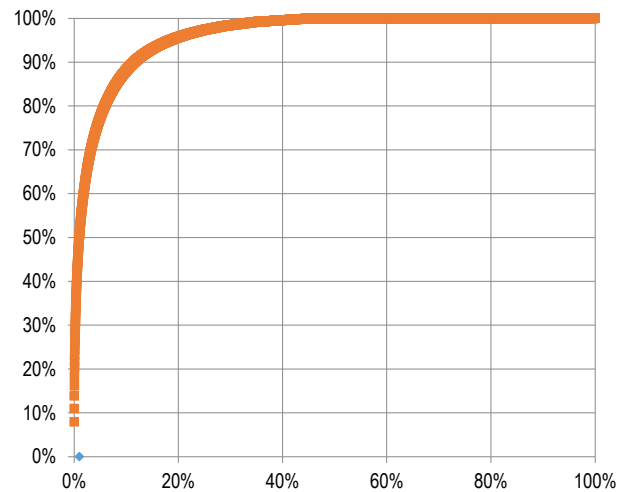
Résultats

Sciences naturelles et génie

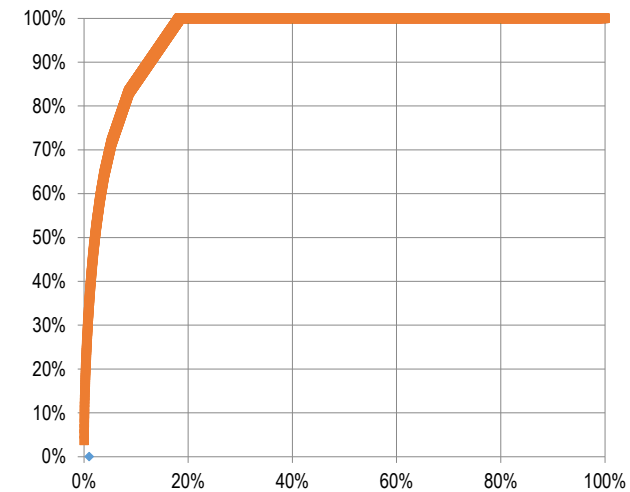
Téléchargements



Références



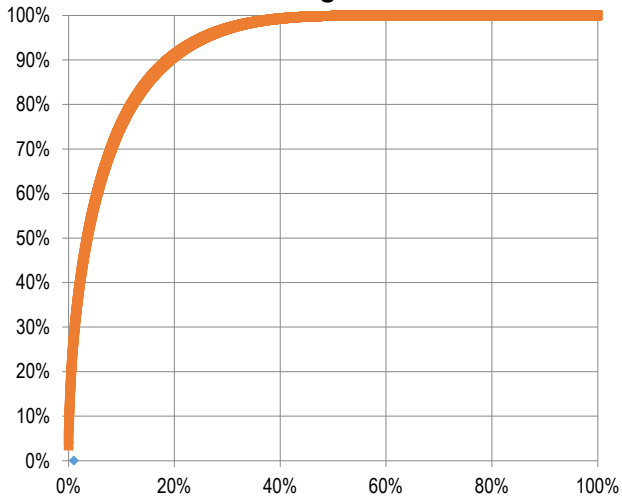
Mentions



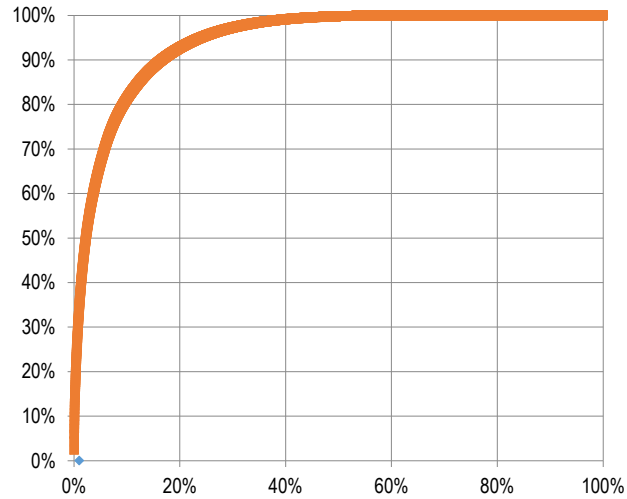
Résultats

Santé

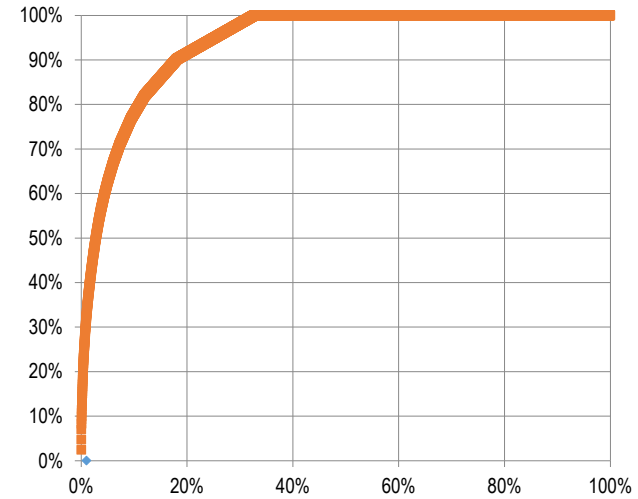
Téléchargements



Références



Mentions



Choix du pourcentage

- Test des pourcentages d'utilisation de 70%-80%-90%
 - 70% - Trop restrictif
 - 90% - Trop inclusif
 - **80% - Plus balancé**
- Pour être incluse, une revue doit être dans le top 80% des téléchargements OU des références OU des mentions de la consultation
- Trois méthodes distinctes et indépendantes permettent donc de récupérer les revues.
- En prenant 80% dans l'une ou l'autre des dimensions, on conserve globalement entre 85% et 90% de l'utilisation.

Critères d'inclusion

Domaine	Téléchargements	Citations	Mentions
Santé	1728	73	3
Sciences naturelles et génie	775	43	2
Sciences sociales et humaines	757	22	2

Revue conservées par domaine

Domaine	Revue top 80% téléchargements	Revue top 80% références	Revue top 80% mentions	Revue distinctes top 80%	% de revue conservées	Revue totales
Santé	816	649	819	1 282	19,2%	6 683
Sciences naturelles et génie	393	336	586	790	12,1%	6 512
Sciences sociales et humaines	1 398	465	2 250	2 828	20,6%	13 697
Tous domaines	2 607	1 450	3 655	4 900	18,2%	26 892

Selon les types d'éditeurs

- Entre 10% et 40% des revues des grands éditeurs
- Éditeurs universitaires plus élevés
- Plateformes nationales sont les plus utilisées
 - Surtout à partir des téléchargements

Limites

- Certaines revues n'ont pas de données de téléchargements
- Les humanités sont désavantagées en termes de citations
- Taux de réponse de la consultation plus bas dans certaines unites / universités
- Importance de l'apport des bibliothécaires et des unites
- Les résultats servent de base à la négociation
 - Mais l'ouverture à la négociation depend de l'Éditeur...

Larivière, V., Haustein, S., Mongeon, P. (2015) The Oligopoly of Academic Publishers in the Digital Era. PLoS ONE 10(6): e0127502. <https://doi.org/10.1371/journal.pone.0127502>

Larivière, V., Sugimoto, C.R. (2018). Do authors comply when funders enforce open access to research? Nature, 562, 483-486.

Larivière, V., Sugimoto, C.R. (2018). Mesurer la science. Presses de l'Université de Montréal.

Larivière, V., Sugimoto, C.R. (2019). The Journal Impact Factor: A brief history, critique, and discussion of adverse effects. Glänzel, W., Moed, H., Schmoch, U., Thelwall, M. (Eds). Springer Handbook of Science and Technology Indicators. Springer. <https://arxiv.org/abs/1801.08992>

Sugimoto, C.R., Work, S., Larivière, V., Haustein, S. (2017). Scholarly use of social media and altmetrics: a review of the literature. Journal of the Association for Information Science and Technology, 68(9), 2037–2062. <https://arxiv.org/abs/1608.08112>

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