

# Altmetrics and impact

Euan Adie

COPE, 17<sup>th</sup> April 2015



# Getting credit where credit is due

## ~~Altmetrics and impact~~

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 Altmetric.com

# This talk

- Why are altmetrics of interest to authors & institutions?
- How are they used
- Things we've learned
- How are they abused

# Several different tools available

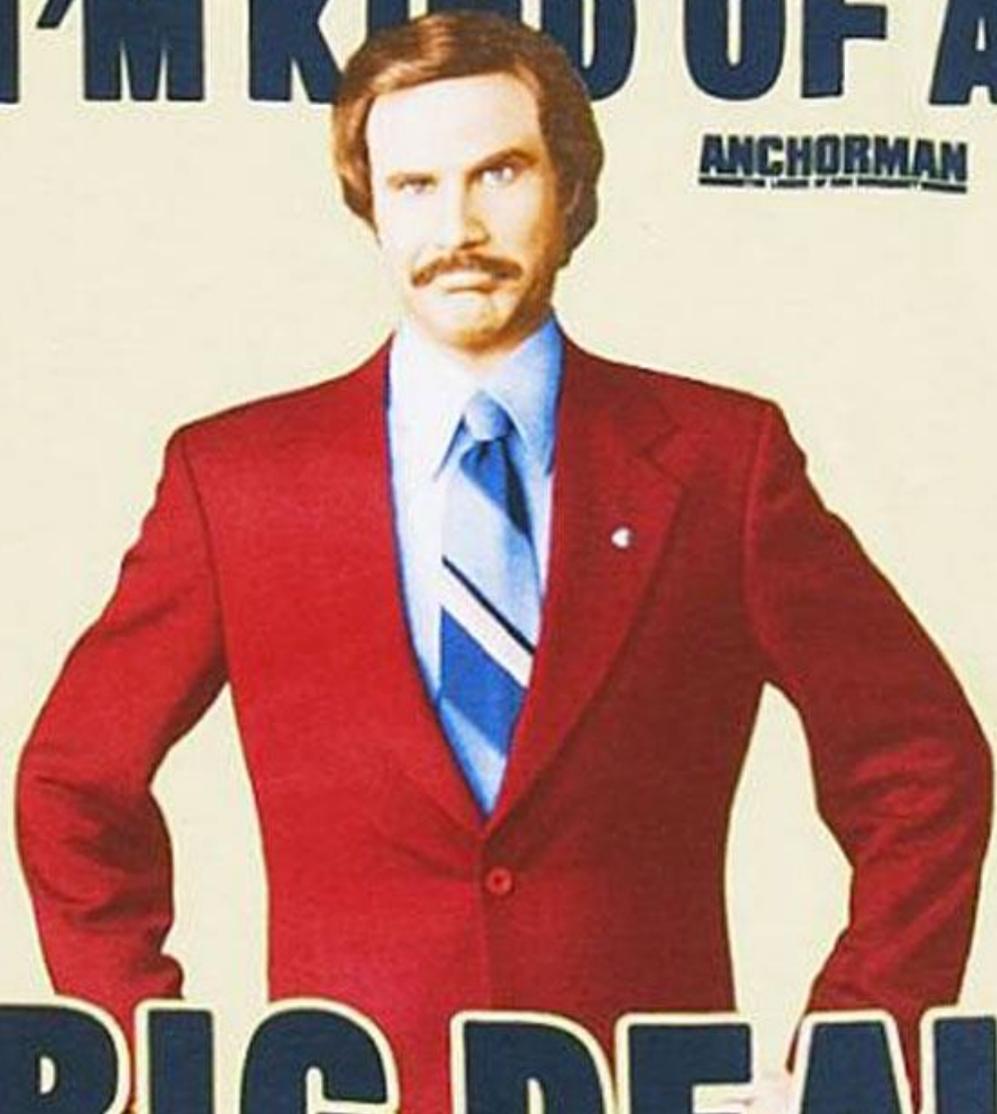




You say tomato...

**I'M KIND OF A**

**ANCHORMAN**



**BIG DEAL**

But there is another driver

# Bad news for researchers?

- You're under pressure to justify
  - Yourself
  - Your research
- Both internally and externally

# Good news for researchers?

Funders and institutions are increasingly looking for or considering other types of:

- Impact
- Research output
- Contribution

# The Evaluation Gap

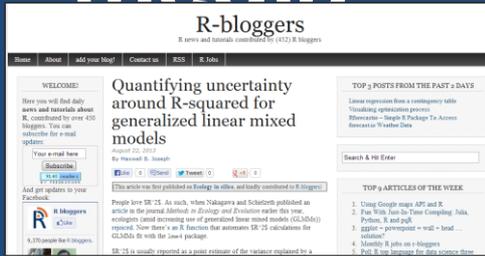
<http://citationculture.wordpress.com/>



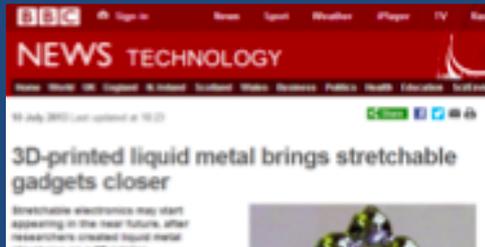
# Altmetrics

Take a broader view of  
impact to help give credit  
where credit is due

# Example: social & mainstream media



Blogs, reviews, comments, faculty of 1000, PubPeer, MathOverflow and the world's largest curated index of academic blogs.



Newspapers & magazines, both mainstream and niche.



## Social media



**brant faircloth** @brantfaircloth · Apr 8

What makes me happiest about our bird paper ([plosone.org/article/metric...](http://plosone.org/article/metric...)) is that largest % of readers are general public [altmetric.com/details.php?ci...](http://altmetric.com/details.php?ci...)

[View summary](#)

[Reply](#) [Retweet](#) [★ Favorited](#) [More](#)

# Example: policy documents



## World Health Organization (WHO)

“WHO policy on collaborative TB/HIV activities: guidelines for national programmes and other stakeholders”



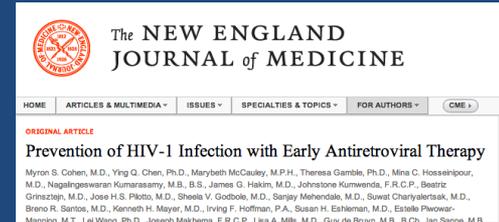
## Intergovernmental Panel on Climate Change (IPCC)

“Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation”

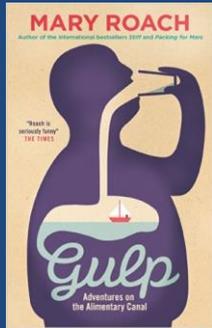


## National Institute for Health and Care Excellence (NICE)

“Delivering Accident Prevention at local level in the new public health system: Road safety policy and links to wider objectives”

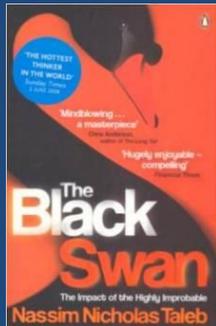


# Example: popular non-fiction



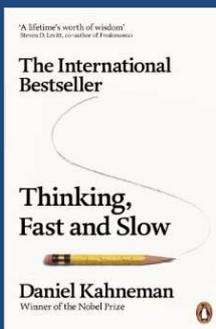
## Gulp

“America’s funniest science writer’ (Washington Post) takes us down the hatch on an unforgettable tour.”



## The Black Swan

“Since being published in 2007, as of February 2011 has sold close to 3 million copies. It spent 36 weeks on the New York Times Bestseller list; 17 as hardcover and 19 weeks as paperback. It was published in 32 languages.”



## Thinking Fast and Slow

“The basis for his Nobel prize, Kahneman developed prospect theory to account for experimental errors he noticed in Daniel Bernoulli's traditional utility theory.”



How people use altmetrics data



altmetrics



**Web**

Images

News

Videos

Shopping

More ▾

Search tools

About 536,000 results (0.29 seconds)



- To gauge the overall popularity of the article
  - **87%** of respondents strongly agreed or agreed
- To discover and network with researchers who are interested in the same area of their work
  - **77%** strongly agreed or agreed
- To understand a paper's influence on the scientific community
  - **66%** strongly agreed or agreed
- To determine what journal to submit their next paper to
  - **60%** of respondents strongly agreed or agreed
- To determine areas of research to explore
  - Only **37%** of respondents strongly agreed or agreed



Altmetric Explorer Reports dashboard Explore the data Explore my institution Help - Logged in -

# Lilliput University

## All mentioned articles by BLACKBURN, Elizabeth H

Pick new articles: You've chosen to see articles by BLACKBURN, Elizabeth H. [Look at all articles instead](#)

- > Mentioned in the past
- > With keyword
- > In these journals
- > With identifiers
- > From publisher
- > With handle prefix
- > With Medline subjects

Summary report Articles Activity Journals

Export articles Save these filters as a report API

Standard Tiled Condensed

**182**

**Accelerated telomere shortening in response to life stress** Proceedings of the National Academy of Sciences of the United States of America  
Abstract [...]  
BLACKBURN, Elizabeth H  
Multidisciplinary

**58**

**Intensive meditation training, immune cell telomerase activity, and psychological mediators.** Psychoneuroendocrinology  
Abstract [...]  
BLACKBURN, Elizabeth H

Browsing by author



Altmetric Explorer Reports dashboard Explore the data Explore my institution Help - Logged in -

# Lilliput University

**46** authors **6,791** items **525** mentioned

Authors Departments Journal subjects Custom groups

Type to filter A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ALL

All departments	<b>46</b> authors	<b>6,791</b> articles	<b>525</b> have metrics
Department of Humanities	<b>11</b> authors	<b>1,432</b> articles	<b>153</b> have metrics
School of Social Sciences	<b>11</b> authors	<b>1,432</b> articles	<b>121</b> have metrics
Department of Life Sciences	<b>35</b> authors	<b>5,359</b> articles	<b>433</b> have metrics
School of Medicine & Medical Science	<b>6</b> authors	<b>1,341</b> articles	<b>105</b> have metrics
School of Natural Sciences	<b>20</b> authors	<b>4,056</b> articles	<b>288</b> have metrics

Browsing by department



Some things we've learned

More complementary than  
alternative to really



# Alt metrics



Implies an emphasis on the quantitative  
that doesn't actually exist.

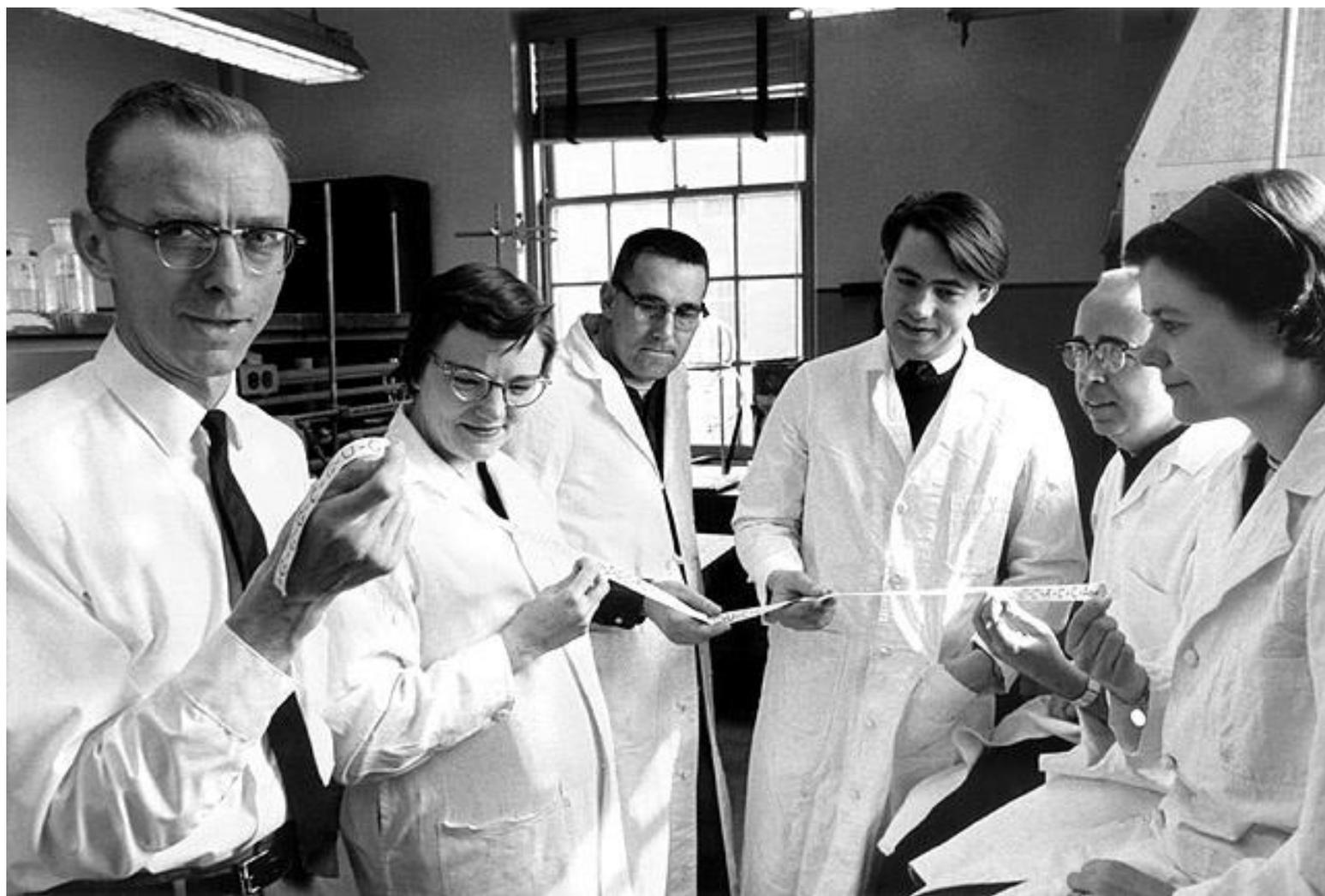
Metrics makes people think of being  
judged (unfortunately)

# Do Altmetrics Work? Twitter and Ten Other Social Web Services

**Mike Thelwall<sup>1\*</sup>, Stefanie Haustein<sup>2</sup>, Vincent Larivière<sup>3</sup>, Cassidy R. Sugimoto<sup>4</sup>**

**1** School of Technology, University of Wolverhampton, Wolverhampton, United Kingdom, **2** École de bibliothéconomie et des sciences de l'information, Université de Montréal, Montréal, Québec, Canada and Science-Metrix Inc., Montréal, Québec, Canada, **3** École de bibliothéconomie et des sciences de l'information, Université de Montréal, Montréal, Québec, Canada and Observatoire des sciences et des technologies, Centre interuniversitaire de recherche sur la science et la technologie, Université du Québec à Montréal, Montréal, Québec, Canada, **4** School of Information and Library Science, Indiana University Bloomington, Bloomington, Indiana, United States of America

People are very keen to relate it to citations!  
Scholarly altmetrics correlate with citations.  
Public engagement / policy & practice  
altmetrics don't.

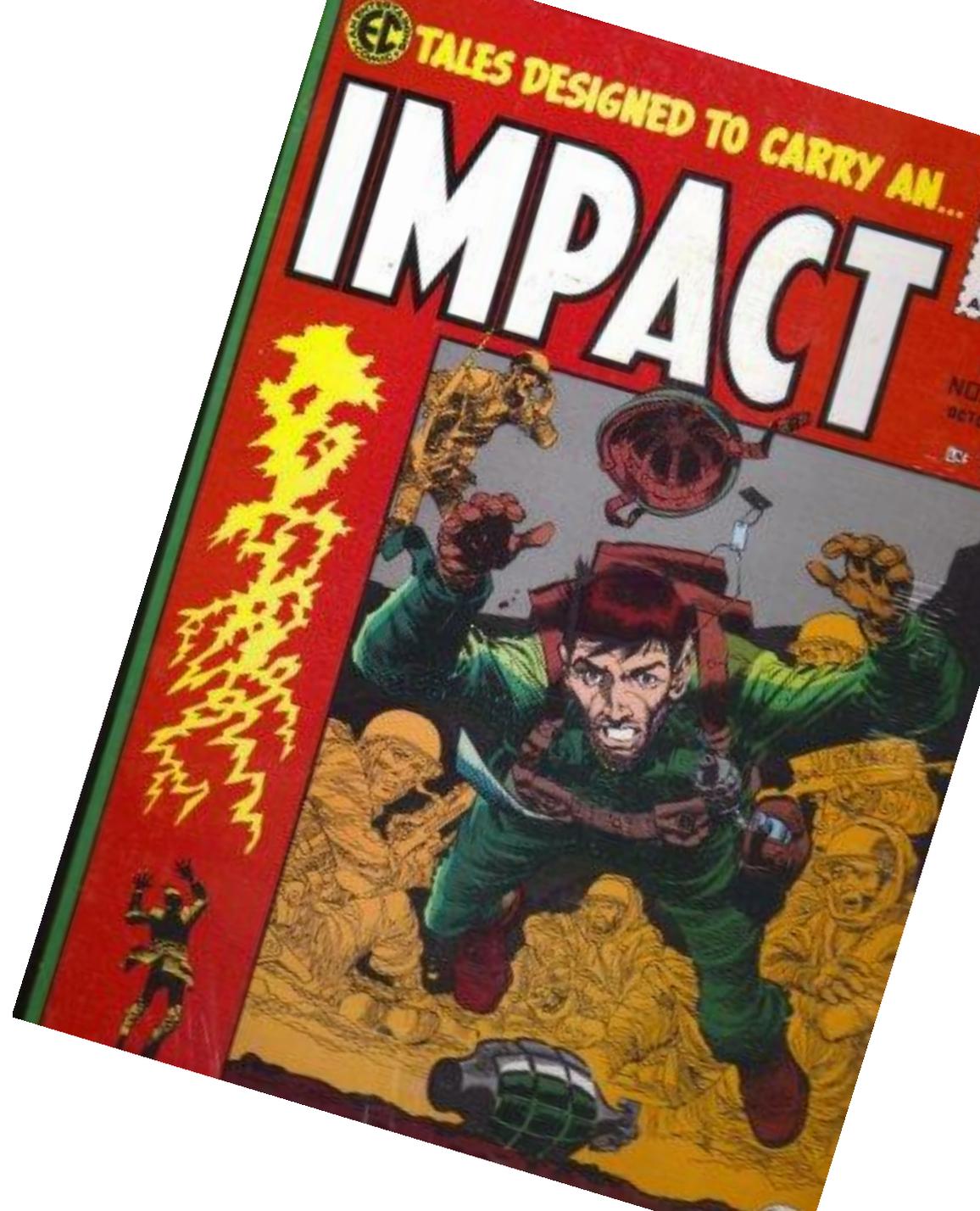




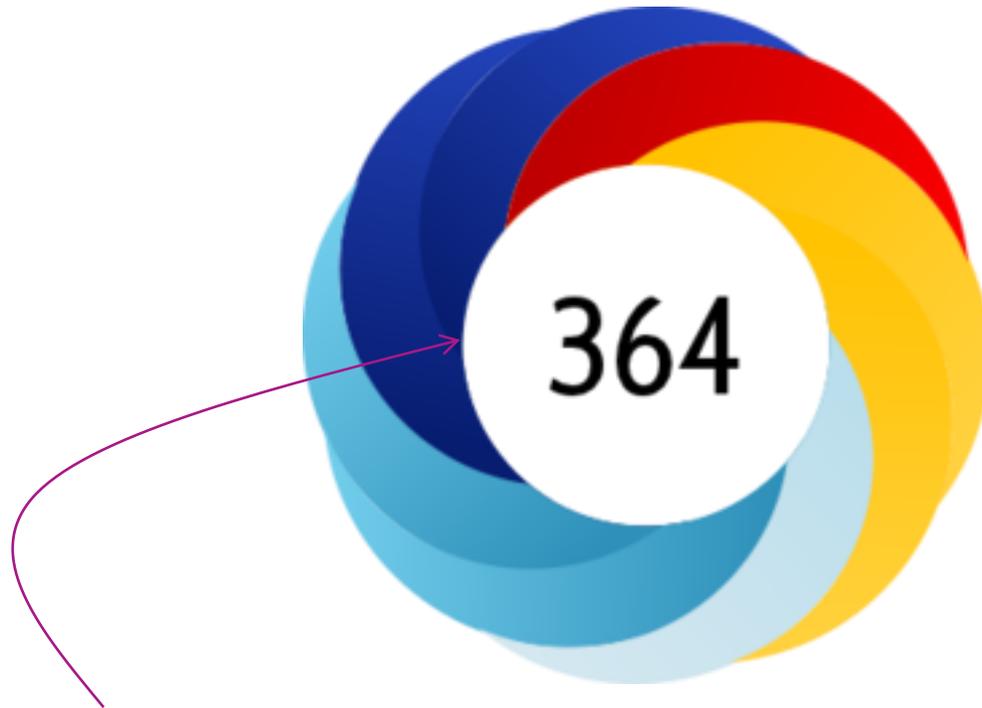
How people (ab)use altmetrics data

"The more any quantitative social indicator (or even some qualitative indicator) is used for social decision-making [...] the more apt it will be to distort and corrupt the social processes it is intended to monitor."

Donald Campbell,  
1976



# Quantifying attention



Altmetric  
score

# Why score at all? To allow ranking

Altmetric Explorer

Reports dashboard

Explore the data

Groups management

Help

## Articles from "University of São Paulo" and in PubMed

### Pick new articles:

> Mentioned in the past

> With keyword

> In these journals

> With identifiers

> From publisher

> With handle prefix

> With Medline subjects

> With subjects

▼ Matching PubMed query

Articles 1,000

Activity 16

Journals 598



A randomized double-blind placebo-controlled study of the long-term efficacy and safety of diethylpropion in the treatment of



Creatine supplementation in fibromyalgia: A double-blind, randomized, placebo-controlled trial.

**Arthritis care & research**



Altmetric score of 27

Mentioned in 1 Google+ posts  
Picked up by 1 news outlets  
Blogged by 2

8 readers on Mendeley  
0 readers on Connotea  
0 readers on CiteULike

Click for more details



A spiderless arachnophobia therapy: comparison between placebo and treatment groups and six-month follow-up study.

**Neural plasticity**



The anxiolytic effect of cannabidiol on chronically stressed mice depends on



Treatment of advanced hepatocellular carcinoma with very low levels of amplitude-modulated

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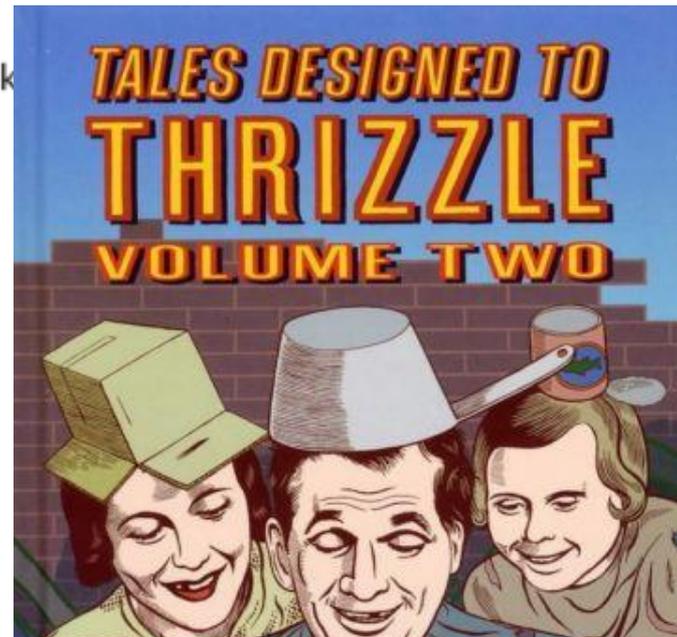
CMAJ December 12, 2000 vol. 163 no. 12



## *Research of the Holiday Kind*

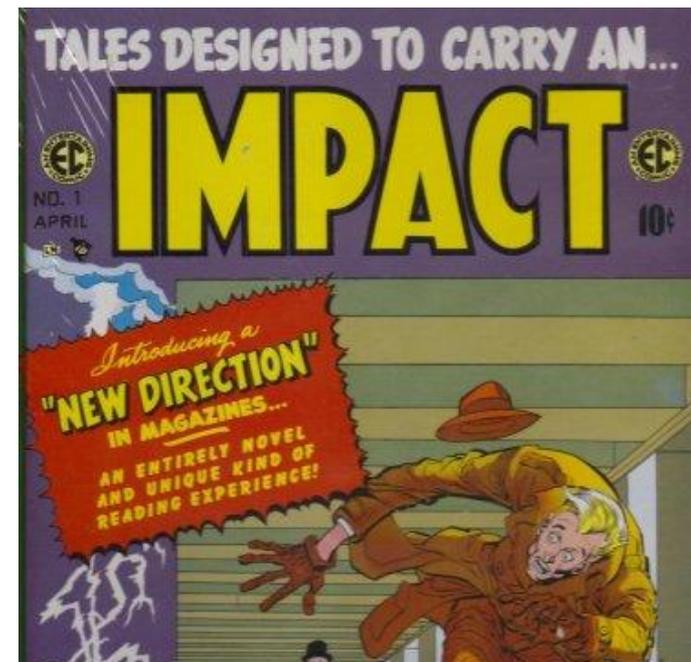
# Pathology in the Hundred Acre Wood: a neurodevelopmental perspective on A.A. Milne

Sarah E. Shea, Kevin Gordon, Ann Hawkins, Janet Kawchuk  
Donna Smith



## Effect of daily aspirin on long-term risk of death due to cancer: analysis of individual patient data from randomised trials

Prof [Peter M Rothwell](#) FMedSci [a](#)  , Prof [F Gerald R Fowkes](#) FRCPE [b](#), Prof [Jill FF Belch](#) FRCP [c](#), [Hisao Ogawa](#) MD [d](#), Prof [Charles P Warlow](#) FMedSci [e](#), Prof [Tom W Meade](#) FRS [f](#)



17 October 2013 Last updated at 19:23

# Sleep 'cleans' the brain of toxins

By James Gallagher  
Health and science reporter, BBC News



The brain uses sleep to wash away the waste toxins built hard day's thinking, researchers have shown.

The US team believe the "waste removal system" is one of the reasons for sleep.

Their study, in the journal *Science*, showed brain cells shrink open up the gaps between neurons and allow fluid to wash the

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## Why do we sleep? To clean our

### say US scientists

Cerebral spinal fluid found to pump around the brain sleeping mice, flushing out waste products like a big dishwasher

Ian Sample, Science correspondent  
theguardian.com, Friday 18 October 2013 10.11 BST



Scientists say they may have found the reason why we need to sleep. Photograph: Corbis

Scientists in the US claim to have a new explanation for why we sleep: in the hours spent slumbering, a rubbish disposal service swings into action that

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Life, love and the pursuit of sanity

SLEEP

# Your Brain Cells Shrink While You Sleep (And That's a Good Thing)

By Belinda Luscombe @youseless | Oct. 17, 2013 | 4 Comments

f Share f Like 2.5k Tweet 321 +1 28 in Share 20 PinIt Read Later

In a predatory world, sleep doesn't make much evolutionary sense. Why would any creature lie down, shut its eyes and not move for about a third of a day? It's like an invitation to be eaten.

Now a new study out of the University of Rochester Medical Center (URMC) suggests sleep is necessary for the brain to get rid of waste. The study, published in the journal *Science*, also reveals that the brain's cells shrivel up by 60% while we sleep to wash away the cellular garbage more effectively. Researchers believe that all the cleaning activity is one of the reasons the brain uses about as much energy while in

Getty Images/Flickr RM

Sleep · Health & wellbeing

Society Health

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More on this story

Skull of Homo erectus throws story of human evolution into disarray

# Miniature Donkey Talk

The TALK of the donkey world



In This Issue:  
*Acute Liver Failure    Ultrasound Looks In  
 The Irish Donkey    Avoid "Attractive Nuisance"*

**POTATO STORAGE INTERNATIONAL**  
 WORLDWIDE • 1982 • 1998

**»» Packaging:**  
 A cost saving packaging system

www.potatostorageinternational.com

## Recumbent Cyclist News

The Recumbent Enthusiasts' Newsletter - Since 1990 - #007 Nov/Dec 2006

**Don't miss!** - See page 10  
 Also check out the new 2006 issue of the magazine, available for purchase at \$10.00 per issue.

**Plus:** - See page 10  
 Also check out the new 2006 issue of the magazine, available for purchase at \$10.00 per issue.

### The Volvo Tour

The Volvo Tour is a multi-day cycling event that is held in Sweden. It is a challenging and scenic ride that takes cyclists through the Swedish countryside. The Volvo Tour is a multi-day cycling event that is held in Sweden. It is a challenging and scenic ride that takes cyclists through the Swedish countryside.

### Inside

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 30 The Volvo Tour - Over 40

**Volvo Tour:**  
**PLUS:** - See page 10  
 Also check out the new 2006 issue of the magazine, available for purchase at \$10.00 per issue.

**Inside**

**Volvo** is the brand name of the Volvo recumbent bicycle. It is a multi-day cycling event that is held in Sweden. It is a challenging and scenic ride that takes cyclists through the Swedish countryside. The Volvo Tour is a multi-day cycling event that is held in Sweden. It is a challenging and scenic ride that takes cyclists through the Swedish countryside.

# Gaming the system



# Gaming?

- Alice asks her friends to retweet her.

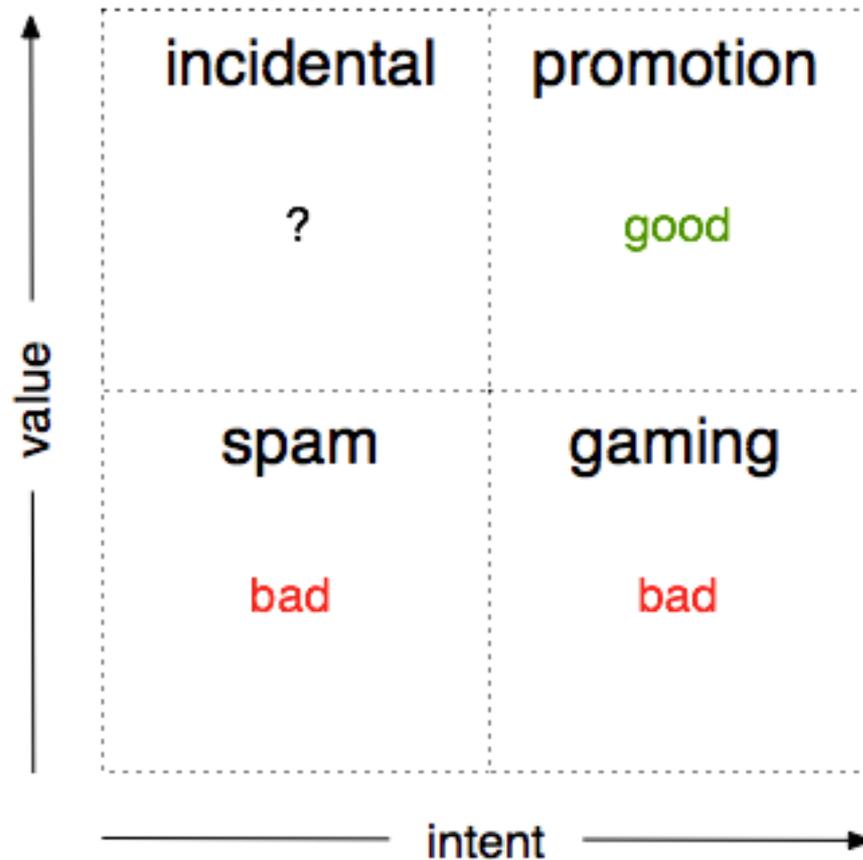
# Gaming?

- Bob likes Alice's paper. He shares it with all his friends and asks them to retweet him.

# Gaming?

- Alice pays \$5 for 100 retweets

# Four types of suspicious attention





# Microcystis Aeruginosa and Underwater Light Attenuation in a Hypertrophic Lake (Hartbeespoort Dam, South Africa)

Twitter   Score   Demographics

So far Altmetric has seen **34** tweets from **1** accounts.

## Mentioned by

1 tweeters

## Readers on

0 Mendeley

1 CiteULike

## Track this article

- Get email updates when this article is shared



Hartbeespoort Dam  
@Hartbeespoort Dam  
193 followers

I am 97.588% full. Microcystis aeruginosa and underwater light attenuation in a hypertrophic... <http://t.co/Ni3up8AfU0> #harties

23-Mar-2013



Hartbeespoort Dam  
@Harties\_dam  
193 followers

I am 98.984% full. Microcystis aeruginosa and underwater light attenuation in a hypertrophic... <http://t.co/3RyYnnha> #harties

08-Feb-2013



Hartbeespoort Dam  
@Harties\_dam  
193 followers

I am 97.610% full. Microcystis aeruginosa and underwater light attenuation in a hypertrophic... <http://t.co/3RyYnnha> #harties

14-Feb-2013



Hartbeespoort Dam  
@Harties\_dam  
193 followers

I am 97.074% full. Microcystis aeruginosa and underwater light attenuation in a hypertrophic... <http://t.co/3RyYnnha> #harties

15-Feb-2013

# What can be done?

- Make underlying data available, visible
- Only track sources that can be audited
  - Some interesting sources fail this test e.g. downloads and private Facebook activity
- Automatically flag up suspicious activity, then manually curate
- Have a standard process in place to deal with gamed articles, notify the journal

# Thanks for listening!

 euan@altmetric.com

 @altmetric