

Retracted Articles: Preliminary Observations

Judit Bar-Ilan, Bar-Ilan University

Gali Halevi, Elsevier/ACS

Some questions

- ▶ Why are articles retracted?
- ▶ How long after publication are they retracted?
- ▶ How are they used?
 - ▶ Cited
 - ▶ Number citations (total and over time)
 - ▶ Citation context
 - ▶ Viewed/downloaded
 - ▶ Total and over time
 - ▶ “Read”/saved by users of the reference manager Mendeley



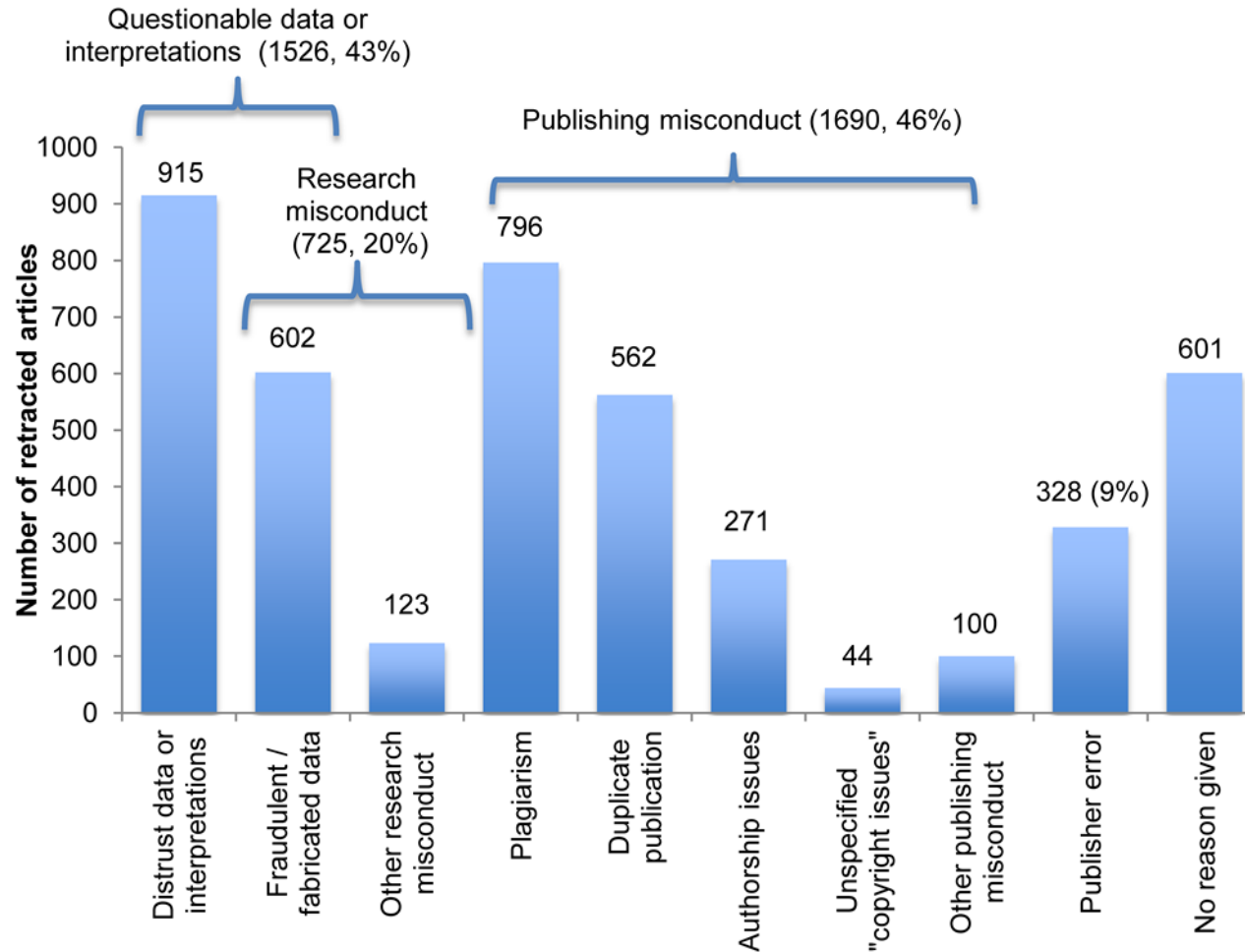
Why are articles retracted?

- ▶ Budd, Sievert & Schultz (1998). JAMA
 - ▶ Error acknowledged – 39% (out of 235 articles)
 - ▶ Misconduct – 37%
 - ▶ Non-replicable – 16%
 - ▶ Other – 8%
- ▶ Fang, Steen & Casadevall (2012). PNAS
 - ▶ Misconduct 67% (out of 2,047 PubMed articles)
 - ▶ Fraud or suspected fraud 43%; duplicate publication 14%
 - ▶ Error 21%
 - ▶ Plagiarism 10%



Why are articles retracted?

- Grieneisen & Zhang (2012). PLoSI. ~4,200 articles



Wakefield et al., 1998, LANCET

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children (Retracted article. See vol 375, pg 445, 2010)

By: Wakefield, AJ; Murch, SH; Anthony, A; et al.

LANCET Volume: 351 Issue: 9103 Pages: 637-641 Published: FEB 28



922 citations, on VIVOS (329 after full retraction), 1022 on GS, Scopus: not indexed
15th most cited article among 1998 Lancet articles (WOS)

77391 full text downloads on Science Direct - can also be downloaded from
thelancet.com + 10s of free online pdf versions

322 readers on Mendeley



Findings linked MMR vaccination to autism

Paper was partially retracted in 2004 (by 10 of the 12 authors), and fully retracted in 2010

Following the judgment of the UK General Medical Council's Fitness to Practise Panel on Jan 28, 2010, it has become clear that several elements of the 1998 paper by Wakefield et al¹ are incorrect, contrary to the findings of an earlier investigation.² In particular, the claims in the original paper that children were "consecutively referred" and that investigations were "approved" by the local ethics committee have been

proven to be false. Therefore we fully retract this paper from the published record.

The Editors of The Lancet
The Lancet, London NW1 7BY, UK

Published Online
February 2, 2010

- 1 Wakefield AJ, Murch SH, Anthony A, et al. Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *Lancet* 1998; **351**: 637-41.
- 2 Hodgson H. A statement by The Royal Free and University College Medical School and The Royal Free Hampstead NHS Trust. *Lancet* 2004; **363**: 824.



Score in context

Article is amongst the highest ever scored in this journal (ranked #23 of 11,268)

Mentioned by

- 23 news outlets
- 47 blogs
- 66 tweeters
- 1 peer review site
- 24 Facebook users
- 2 Google+ users
- 1 Redditor
- 1 Q&A thread
- 5 video uploaders

Obokata, Wakayama, Sasai et al., 2014

Nature

- ▶ Stimulus-triggered fate conversion of somatic cells into pluripotency
 - ▶ Published 29 January 2014
 - ▶ Retracted 2 July 2014 (RIKEN Institute, where the research was conducted, published first report on 29 March 2014)
 - ▶ Misconduct: manipulating image data and using data from two different experiments. Obokata “lacks, not only a sense of research ethics, but also integrity and humility as a scientific researcher”.
 - ▶ Coauthor Yoshiki Sasai committed suicide in August 2014
 - ▶ Obokata resigned in December 2014
- ▶ Google Scholar: 123 citations
- ▶ WOS: 72 citations
- ▶ Scopus: 75 citations



28

ARTICLE RETRACTED: Stimulus-triggered fate conversion of somatic cells into pluripotency.

Obokata H, Wakayama T, Sasai Y, Kojima K, Vacanti MP, Niwa H, Yamato M, Vacanti CA
Nature. 2014 Jan 30; 505(7485):641-7

  Save/Follow |  Export  Get Article

    Share

13 recommendations: 7 exceptional, 1 very good, 5 good + 1 dissenting = 28 stars (all time top 55 stars)

“a note from editorial has been added to the [recommended paper's page on F1000Prime](#), but with the original recommendations, user comments, dissents and withdrawals still published and available.”

PubPeer


87076

views

Comments (126):




 **MENDELEY**

Readership Statistics

 2415 Readers on Mendeley



Close x

-  Picked up by 94 news outlets
-  Blogged by 59
-  Tweeted by 2575
-  Mentioned by 1 peer review sites
-  On 102 Facebook pages
-  Mentioned in 18 Google+ posts
-  Reddited by 2
-  Highlighted by 1 platforms
-  On 2 videos

Article is amongst the highest ever scored in this journal (ranked #13 of 28,349)

Retraction Watch – retractionwatch.com



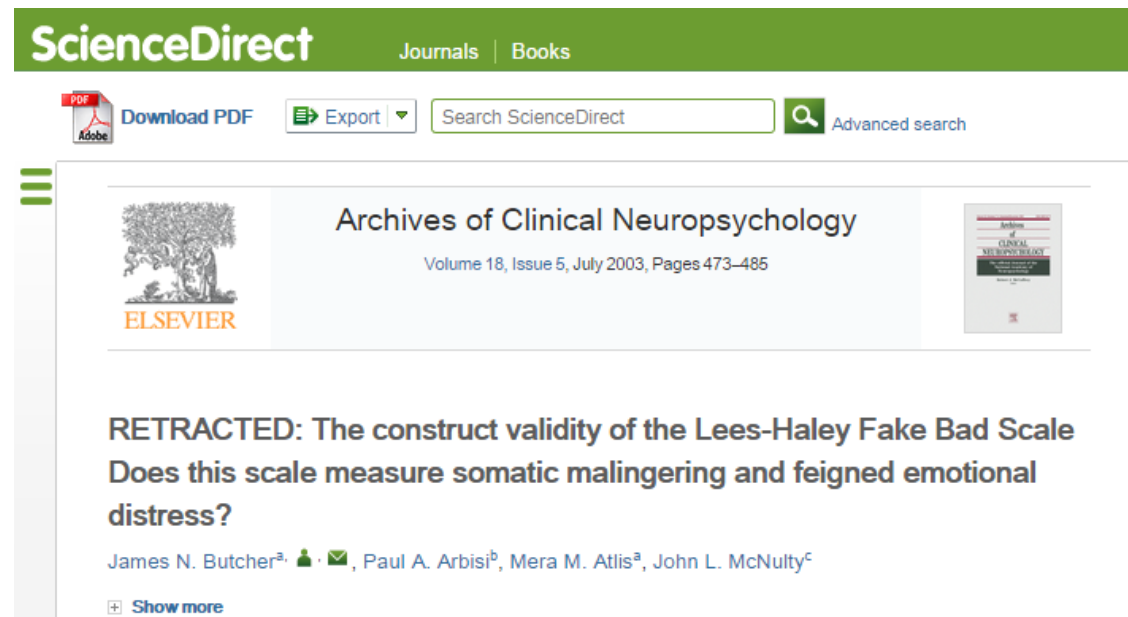
Tracking retractions as a window into the scientific process



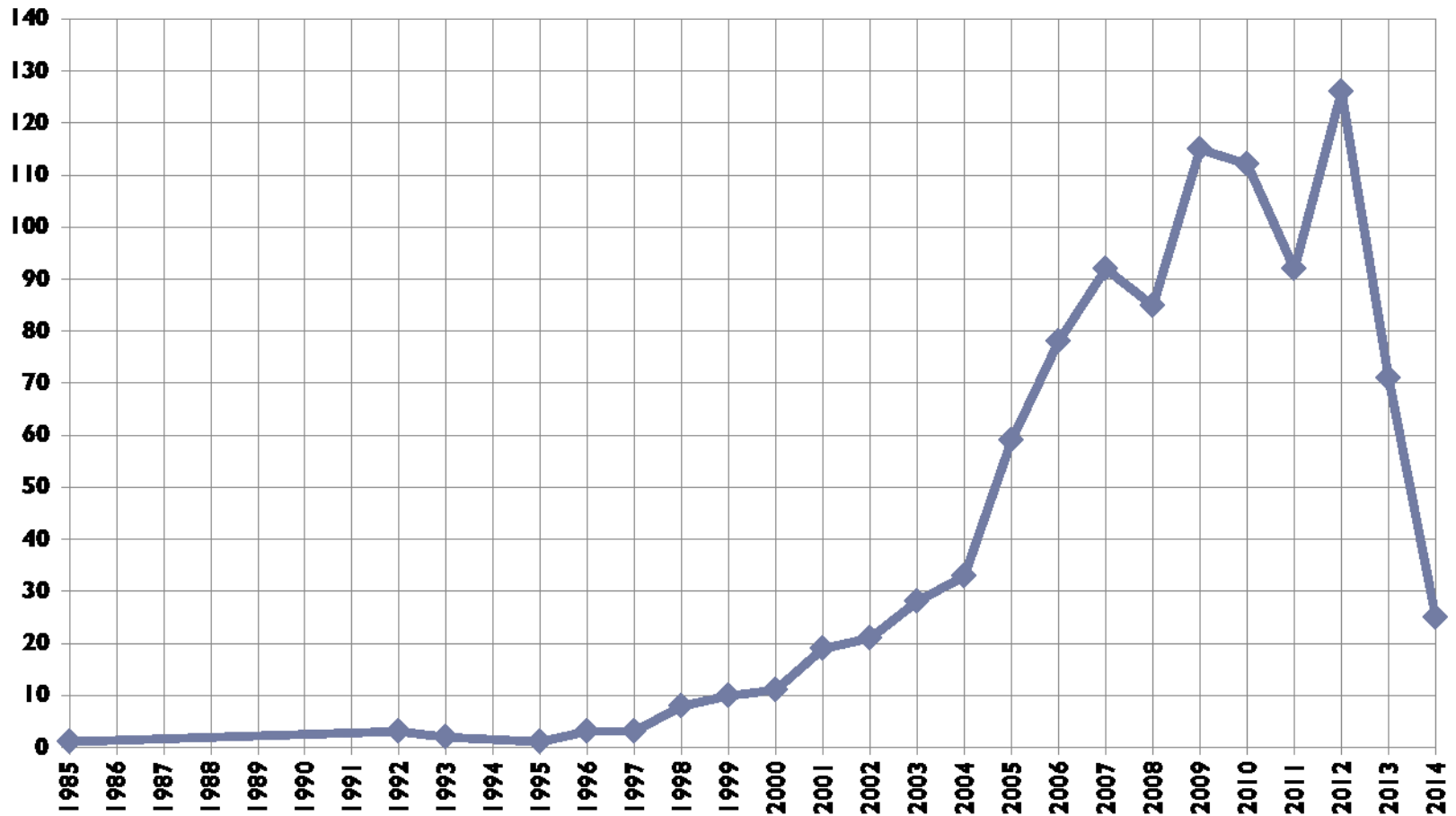
<https://www.facebook.com/pages/Retraction-Watch/119209094864356?sk=timeline>

Our data

- ▶ Searched ScienceDirect (Elsevier) for articles with the term “RETRACTED” in October 2014
- ▶ 1,203 results retrieved
- ▶ 998 RETRACTED articles
 - ▶ Term in title
 - ▶ Retraction notice



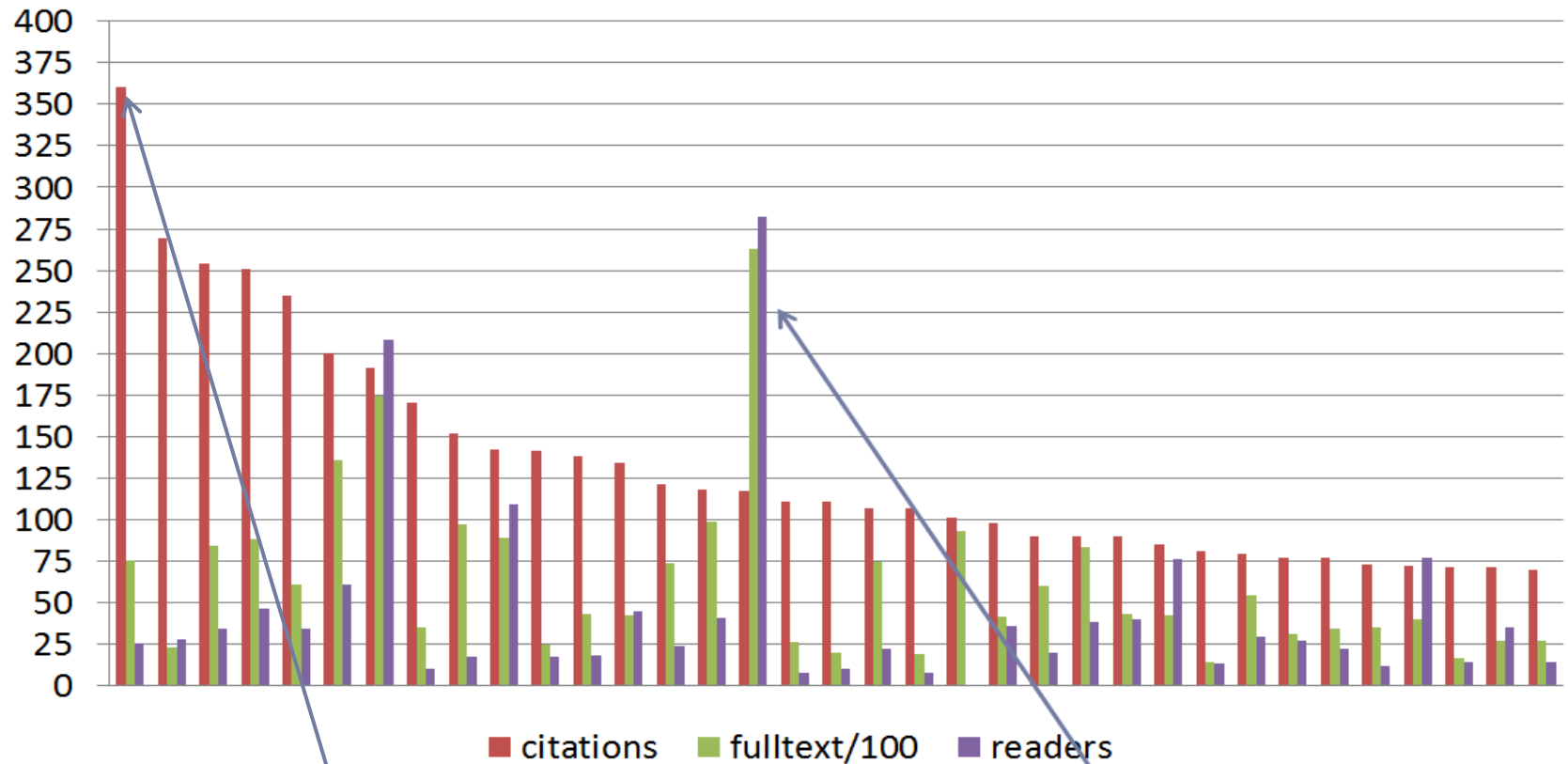
Distribution by publication year



Journal	# retracted articles
Biochemical and Biophysical Research Communications	20
Procedia - Social and Behavioral Sciences	17
Journal of Hazardous Materials	16
Cell	15
Journal of Mathematical Analysis and Applications	11
Journal of Ethnopharmacology	10
Journal of Molecular Structure: \{THEOCHEM\}	10
Cancer Letters	9
Journal of Experimental Social Psychology	9
Neuroscience	9
Optics & Laser Technology	9
Renewable and Sustainable Energy Reviews	9
Applied Surface Science	8
Asian Pacific Journal of Tropical Medicine	8
Expert Systems with Applications	8
Food and Chemical Toxicology	8
Journal of Materials Processing Technology	7
Molecular Cell	7
Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms	7
Talanta	7



Citations-downloads-reads of most highly cited retracted articles



Uncoupling IL-2 Signals that Regulate T Cell Proliferation, Survival, and Fas-Mediated Activation-Induced Cell Death – Immunity 1999, retracted 2009 – author request – first author manipulation

Directed Conversion of Alzheimer's Disease Patient Skin Fibroblasts into Functional Neurons, Cell, 2011 Retracted 2014 at author request – data manipulation

Top cited

First author	Title	Journal	Year	Citations	Downloads	Readers
Parijs, Luk Van	Uncoupling IL-2 Signals ...	Immunity	1999	360	7494	25
Page, Florence Le	Transcription-Coupled Repair of 8-oxoGuanine	Cell	2000	269	2308	28
Krishnamoorthy,	Characterization of a transformed rat retinal ganglion cell line	Molecular Brain Research	2001	254	8409	34
Watnick, Randolph	Ras modulates Myc activity to repress thrombospondin-1 expression ...	Cancer Cell	2003	251	8852	46
Chang, Geoffrey	Structure of MsbA from Vibrio cholera	Journal of Molecular Bi	2003	235	6087	34
Kitagawa, Hiroch	The Chromatin-Remodeling Complex WINAC ...	Cell	2003	200	13560	61
Donmez, Gizem	SIRT1 Suppresses β-Amyloid Production ...	Cell	2010	191	17418	208
Parijs, Luk Van	The Fas/Fas Ligand Pathway and Bcl-2 Regulate T Cell Responses to Model Self ...	Immunity	1998	170	3522	10
Chu, Wen-Ming	DNA-PKcs Is Required for Activation of Innate Immunity ...	Cell	2000	152	9701	17
Yamagata, Kaoru	Maturation of MicroRNA Is Hormonally Regulated by a Nuclear Receptor	Molecular Cell	2009	142	8907	109
Parijs, Luk Van	Autoimmunity as a Consequence of Retrovirus-Mediated Expression ...	Immunity	1999	141	2434	17
Yanagisawa, Junr	Nuclear Receptor Function Requires a TFTC-Type ...	Molecular Cell	2002	138	4328	18
Owen, Dawn	Maternal adversity, glucocorticoids and programming of neuroendocrine ...	Neuroscience & Biobeh	2005	134	4207	45



Top downloaded

First author	Title	Journal	Year	Citations	Downloads	Readers
Séralini, Gilles-Er	Long term toxicity of a Roundup herbicide ...	Food and Chemical Toxicology	2012	51	266390	785
Wakefield, AJ	Ileal-lymphoid-nodular hyperplasia ...	The Lancet	1998	n/a	77391	322
Qiang, Liang	Directed Conversion of Alzheimer's Disease ...	Cell	2011	117	26300	282
Donmez, Gizem	SIRT1 Suppresses β-Amyloid Production ...	Cell	2010	191	17418	208
Nunez, Esperanza	Nuclear Receptor-Enhanced Transcription Requires Motor ...	Cell	2008	44	16423	165
Bangash, M Ali	Enhanced Polyubiquitination of Shank3 ...	Cell	2011	64	16194	132
Kitagawa, Hiroch	The Chromatin-Remodeling Complex WINAC Targets a Nuclear Receptor ...	Cell	2003	200	13560	61
Thyagarajan, Am	Imaging Activity-Dependent Regulation of Neurexin-Neurologin...	Cell	2010	24	13400	179
Walumbwa, Fred	Psychological processes linking authentic leadership ...	The Leadership Quarterly	2010	46	12870	189
Hsu, Hsin-Hsien	Role of the Sigma Factor in Transcription Initiation...	Cell	2006	1	11646	60
Atahan, Ali Osma	A recommended specification for heavy vehicle rear underrun guards	Accident Analysis & Prevention	2007	5	11122	7
Shi, Mingan	DNA-PKcs-PIDDosome: A Nuclear Caspase-2-Activating Complex ...	Cell	2009	61	11105	40



Top read

First author	Title	Journal	Year	Citations	Downloads	Readers
Séralini, Gilles-Er	Long term toxicity of a Roundup herbicide ...	Food and Chemical Toxicology	2012	51	266390	785
Wakefield, AJ	Ileal-lymphoid-nodular hyperplasia ...	The Lancet	1998	n/a	77391	322
Qiang, Liang	Directed Conversion of Alzheimer's Disease ...	Cell	2011	117	26300	282
Donmez, Gizem	SIRT1 Suppresses β -Amyloid Production ...	Cell	2010	191	17418	208
Walumbwa, Fred	Psychological processes linking authentic leadership ...	The Leadership Quarterly	2010	46	12870	189
Thyagarajan, Am	Imaging Activity-Dependent Regulation of Neurexin-Neuroigin...	Cell	2010	24	13400	179
Nunez, Esperanza	Nuclear Receptor-Enhanced Transcription Requires Motor ...	Cell	2008	44	16423	165
Bangash, M Ali	Enhanced Polyubiquitination of Shank3 ...	Cell	2011	64	16194	132
Hauser, Marc D.	Rule learning by cotton-top tamarins	Cognition	2002	52	3794	123
Yamagata, Kaoru	Maturation of MicroRNA Is Hormonally Regulated by a Nuclear Receptor	Molecular Cell	2009	142	8907	109
Kim, Young-Kook	Cell Adhesion-Dependent Control of MicroRNA Decay	Molecular Cell	2011	15	4394	102
Degenhardt, Tatj	Population-Level Transcription Cycles Derive from Stochastic Timing ...	Cell	2009	30	7522	101

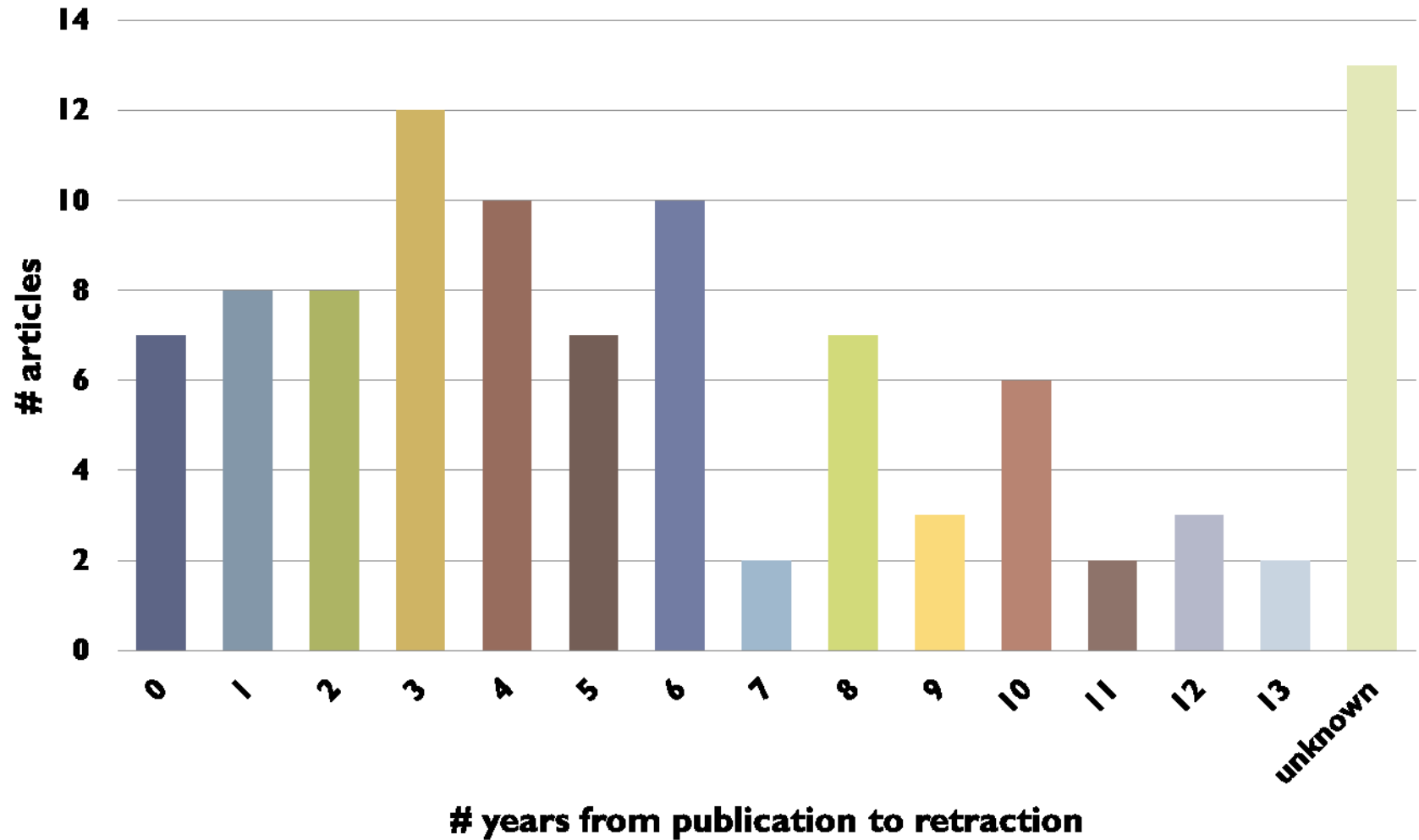


Observations on the “top” retracted articles

- ▶ “Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize”
 - ▶ Published in 2012 in Food and Chemical Toxicology
 - ▶ Hints to genetically modified foods cause tumors/cancer
 - ▶ Recently republished in Environmental Sciences Europe without further peer review
- ▶ Luk Van Parijs
 - ▶ Was an associate professor at MIT, dismissed from MIT for research misconduct in 2005
 - ▶ Sentenced for making a false statement on a federal grant application
 - ▶ Reasons for retraction
 - ▶ (1) Image manipulation (CalTech) (published 1998; retracted 2009)
 - ▶ (2) Image manipulation (Harvard) (published 1998; retracted 2009)
 - ▶ (3) Image manipulation (CalTech) (published 1999; retracted 2009)
 - ▶ Fourth retracted article published in 2003; retracted 2012 – for falsifying a figure (MIT) – cited 65 times



Time to retract for the 100 most cited articles



Correlations (Spearman)

Published in 2012

- ▶ 129 articles
- ▶ Downloads-readers: $r = .659^{**}$ (CI=(.501, .773), N=104)
- ▶ Downloads-citations: $r = .659^{**}$ (CI=(.524, .754), N=117)
- ▶ Readers-citations: $r = .599^{**}$ (CI=(.424, .723), N=102)

Whole dataset

- ▶ 998 articles
 - ▶ Downloads-readers: $r = .647^{**}$ (CI=(.600, .693), N=842)
 - ▶ Downloads-citations: $r = .647^{**}$ (CI=(.603, .686), N=951)
 - ▶ Readers-citations: $r = .474^{**}$ (CI=(.414, .430), N=831)
-



Summary

- ▶ Preliminary observations
- ▶ Deeper analysis on its way

THE LANCET

The Lancet, Volume 351, Issue 9103, Pages 637 - 641, 28 February 1998
doi:10.1016/S0140-6736(97)11096-0

This article was retracted

RETRACTED: Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

Dr AJ Wakefield FRCS ^a, SH Murch MB ^b, A Anthony MB ^a, J Linnell PhD ^a, DM Casson MRCP ^b, M Malik MRCP ^b, M Berelowitz FRCPsych ^c, AP Dhillon MRCPsych ^a, MA Thomson FRCP ^b, P Harvey FRCP ^d, A Valentine FRCP ^e, SE Davies MRCPsych ^a, JA Walker-Smith FRCP ^a

Summary

Background

We investigated a consecutive series of children with chronic enterocolitis and regressive developmental disorder.

Methods

12 children (mean age 6 years [range 3–10], 11 boys) were referred to a paediatric gastroenterology unit with a history of normal development followed by loss of acquired skills, including language, together with diarrhoea and abdominal pain. Children underwent gastroenterological, neurological, and developmental assessment and review of developmental records. Ileocolonoscopy and biopsy sampling, magnetic-resonance imaging (MRI), electroencephalography (EEG), and lumbar puncture were done under sedation. Barium follow-through radiography was done where possible. Biochemical, haematological, and immunological profiles were examined.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(97\)11096-0/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(97)11096-0/fulltext)



Pablo Bisoglio

<http://www.wired.co.uk/magazine/archive/2012/02/start/article-retracted/viewgallery/273181>



http://www.biotechniques.com/multimedia/archive/00169/11-18-2011_unretrac_169333a.jpg