How do researchers cite earlier research? Primarily strategic and preference based

Dr. Jennifer Yost,

Assistant Professor, McMaster University

Two main evidence issues …

When formulating the Background of a study several studies show that authors of scientific papers:

1. Only refer to a small fraction of earlier research *(Robinson 2011, Sawin 2015, Clarke 1998, 2002, 2007, 2010, Sheth 2011)*
2. **Choose their references based upon preferences and strategic considerations** ***(Greenberg 2009, Bastiaansen 2015, Thornley 2015, Perino 2014, Jannot 2013, Fiorentino 2011)***

In short:

Authors are not systematic in the way they use earlier research

When planning a new study …

According to **CONSORT**, the BACKGROUND should refer to:

1. Nature, scope and severity of the problem
2. Plausible explanation / rationale
3. The evidence of benefits of active intervention
4. Previous similar trials

When planning a new study
THE INTRODUCTION

According to CONSORT there should be references about:

1. **Nature, scope and severity of the problem**
2. Plausible explanation / rationale
3. The
4. Pre

Example:

Stiffness after total knee replacement occurs in 8% to 60%.

(Fitzsimmons 2010)

Which references does one select?

When planning a new study
THE INTRODUCTION

According to CONSORT there should be references about:

1. Nature, Scope and severity of the problem
2. **Plausible explanation / rationale**
3. The evidence of benefits of the active intervention
4. Pre

Example:

16 different mechanisms for diminishing knee pain following exercise.

(Beckwée 2013)

Which references does one select?

Greenberg 2009

BMJ

RESEA

How citation distortions create unfounded authority
analysis of a citation network

Steven A Greenberg, associate professor of neurology

Children's Hospital Informatics

ABSTRACT

The belief system studied is that a protei

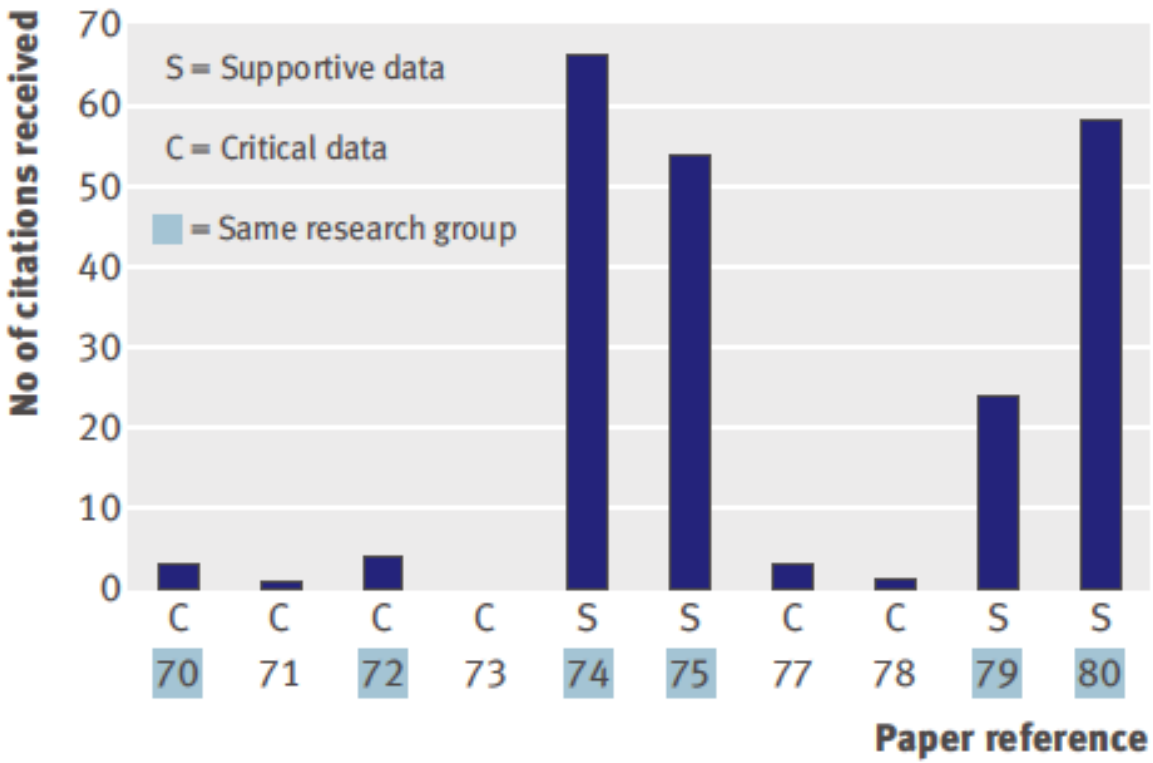

Fig 2 | Citation bias against content critical of claim. Shown are citation frequencies to four authoritative supportive primary data papers and six primary data papers[70-75 77-80] containing data critical of claim

Bastiaansen 2015

Correspondence

Citation Distortions in the Literature on the Serotonin-Transporter-Linked Polymorphic Region and Amygdala Activation

To the Editor:

A seminal finding in imaging genetics is that carriers of the short (S) allele of the serotonin-transporter-linked polymorphic region (5-HTTLPR) exhibit an increased amygdala response to negative emotional stimuli. The original article by Hariri *et al.* (1) has been cited >1000 times since its publication in 2002. Although meta-analyses have shown a statistically significant (but small) effect across published studies, the validity of these findings is undermined by the presence of publication bias (2,3). In addition, the strength of evidence has declined over

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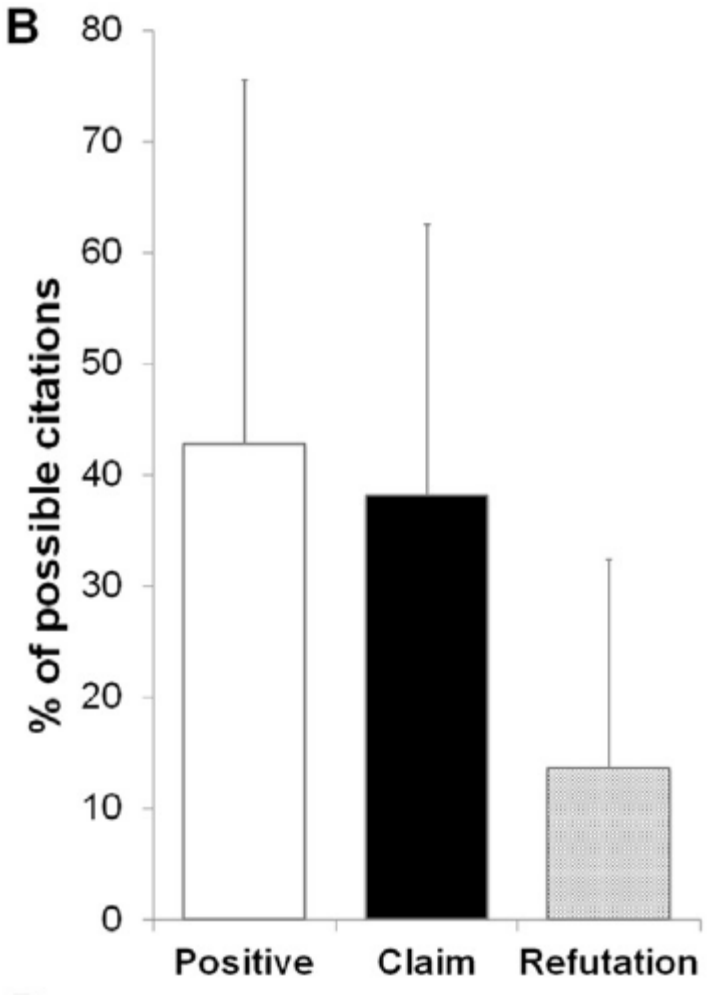

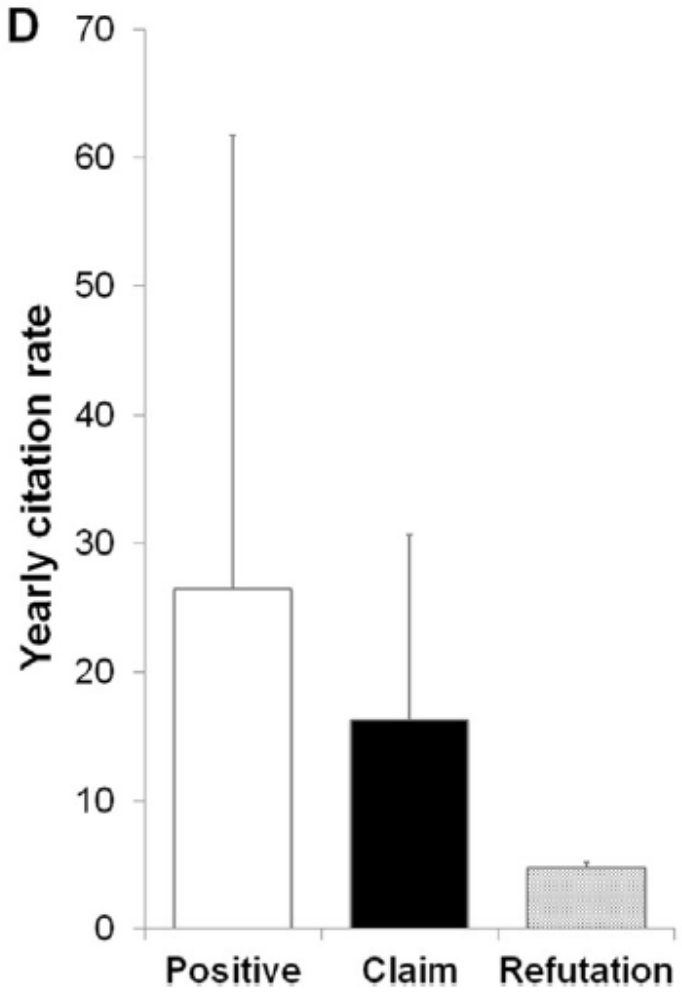

Thornley 2015
Why chosing a specific reference?


The role of trust and author
researchers

Clare Thornley, Anthony Watkinson,
Newbury, UK.
Rachel Volentine, University of Tenn
Information, 1345 Circle Park Drive,
7911
Hamid R. Jamali, Eti Herman, CIBE
Suzie Allard, Kenneth J. Levine and

223 was interviewed	
Author known	24 %
Original seminal work in the field	15%
Journal or conference known	10 %
Known institution or research group	8 %
Sound method	8%
Researcher (author) wrote it	5%
Known database or source	4%
Lots of cites to paper	3%
Theoretical approach	3%
m.v.	

Perino 2014

Original Article

Association Between Success Rate and Citation Count of Studies of Radiofrequency Catheter Ablati for Atrial Fibrillation

Possible Evidence of Citation Bias

Alexander C. Perino, MD; Donald D. Hoang, BA, Tyson H. Holmes, PhD; Pasquale Santang
Paul A. Heidenreich, MD, MS; Marco V. Perez, MD; Paul J. Wang, MD; Mintu P. Turakhia, M

Background—The preferential citation of studies with the highest success rates could exaggerate perceived ef particularly for treatments with widely varying published success rates such as radiofrequency catheter ablati fibrillation.

Methods and Results—We systematically identified observational studies and clinical trials of radiofrequen

The way earlier studies were used lead the reader to think that a treatment was more effective than it actually was according to a systematic review.

Fiorentino 2011

British Journal of Cancer (2011) 104, 1085–
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www.bjcancer.com

Clinical reports of pulmonary metastasectomy for colo
cancer: a citation network analysis

F Fiorentino[1], C Vasilakis[1] and T Treasure[1,*]
[1]Clinical Operational Research Unit, University College London, London WC1H 0BT, UK

INTRODUCTION: Pulmonary metastasectomy for colorectal cancer is a commonly performed and well-establishe
years standing. However, there have been no controlled studies, randomised or otherwise. We sought to inves

An analysis of 344 studies within a specific area showed that **"landmark" papers was cited again and again.** Papers refuting the landmark studies was rarely cited.

But as the authors say: it’s like a snow ball – it becomes bigger and bigger, but it is still just snow!

The evidence.

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In short:

Authors are not systematic in the way they use earlier research

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Researchers are NOT scientific in the way they refer to earlier studies, but choose based upon preferences and strategic considerations!