Åpen forskning: Bakgrunn, muligheter og utfordringer

Tamara Kalandadze
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Bakgrunn

Vitenskapens troverdighet under krise

PLOS MEDICINE

OPEN ACCESS

ESSAY

Why Most Published Research Findings Are False

John P. A. Ioannidis

Published: August 30, 2005 • https://doi.org/10.1371/journal.pmed.0020124

Article | Authors | Metrics | Comments | M

A Year of Horrors

Eric-Jan Wagenmakers

For social psychologists, the year 2011 can go in the books as a true annus horribilis. First, the flagship journal in the field, the Journal of Personality and Social Psychology, decided to publish an article claiming that people can look into the future. Going from silly to bizarre, this ability was reported to be strongest for extravert women confronted with erotic pictures. The resulting media frenzy centered on questions such as "should JPSP ever have accepted such an article?" and, more to the point, "is there something wrong with the way social psychologists conduct their experiments and analyze their data?". The author of the infamous article, Dr. Daryl Bem, was a guest on the Colbert Report, where the host mocked the effect as "extrasensory pornception". And then, as if the reputation of JPSP had not yet been tarnished quite enough, the journal rejected (without external review) all manuscripts that reported failures to replicate the Bem results. As it turns out, JPSP has a long-standing policy not to publish "mere" replication studies. A terrible policy to espouse, of course – apparently, JPSP believes it can pollute the field and then leave the clean-up effort to the lesser journals.

Second, there was the Stapel saga. For those of you who have been living in a cave, Diederik Stapel is one of social psychology's brightest

For social psychology, the year 2012 has not gone off to a good start either. The influential John Bargh was recently confronted

En rekke uheldige episoder som endret psykologisk forskning for alltid…

Feeling the future: Experimental evidence for anomalous retroactive influences on cognition and affect.

Database: APA PsycArticles Journal Article

Bem, Daryl J.

Citation

Bem, D. J. (2011). Feeling the future: Experimental evidence for anomalous retroactive influences on cognition and affect. *Journal of Personality and Social Psychology, 100*(3), 407–425. https://doi.org/10.1037/a0021524

Abstract

The term psi denotes anomalous processes of information or energy transfer that are currently unexplained in terms of known physical or biological mechanisms. Two variants of psi are *precognition* (conscious cognitive awareness) and premonition (affective

Science. 2011 Apr 8;332(6026):251-3. doi: 10.1126/science.1201068.

Coping with chaos: how disordered contexts promote stereotyping and discrimination

Diederik A Stapel [1], Siegwart Lindenberg

Affiliations + expand

PMID: 21474762 DOI: 10.1126/science.1201068

Retraction in

Retraction.

Stapel DA, Lindenberg S.

I begge tilfeller, problemet handlet om **replikasjoner/etterprøvbarhet** (eller mangel på dem)

Open Science Collaboration (2015):

Forsøk på å etterprøve 100 studier publisert i **tre av de viktigste og mest annerkjente** psykologiske tidsskrifter:

- 36% kunne etterprøves
- i vellykkede replikasjonsstudier ble effektstørrelser redusert til halvparten

Hva med andre fagfelt?

AERA AMERICAN EDUCATIONAL RESEARCH ASSOCIATION

Impact Factor: **6.386** / 5-Year Impact Factor: **7.053**

Available access | Researc

Facts Are More Import

Matthew C. Makel and Jonathan A

Volume 43, Issue 6 | https://doi.org/10.3102/0013189X1454

Content

POLITICS & POLICY

In Medicine, the Science Has Stopped Working

By PASCAL-EMMANUEL GOBRY | November 15, 2017 4:25 PM

economics

Can Reproducibility in Chemical Research be Fixed?

Listen to Post

Sep 25, 2017 Enago Academy

cal cancer research

C. Glenn Begley & Lee M. Ellis

Nature **483**, 531–533 (2012) | Cite this article

229k Accesses | **1810** Citations | **2310** Altmetric | Metrics

A Clarification to this article was published on 02 May 2012

C. Glenn Begley and Lee M. Ellis propose how methods, publications and incentives must change if patients are to benefit.

eLife Home Magazine Community About Searc

Magazine | Feat

Cancer Biology

BY ANDY COCKBURN, PIERRE DRAGICEVIC, LONNI BESANÇON, AND CARL GUTWIN

Repro

for ass

biolog

Timothy M

Center for Op

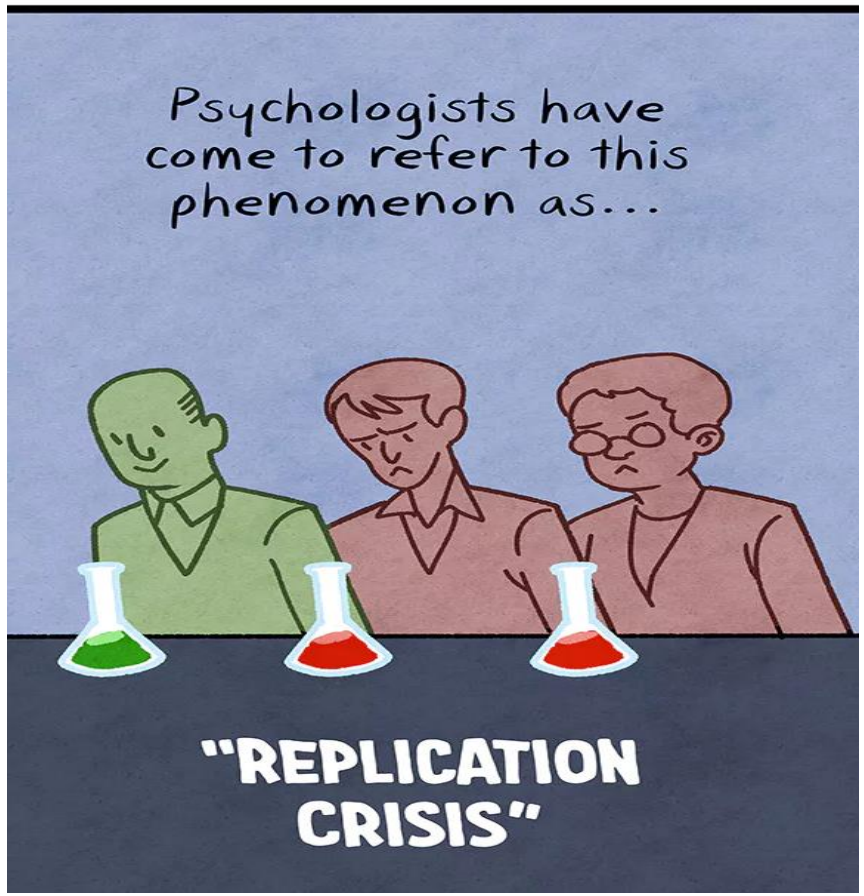
Threats of

Replication

The replication crisis has engulfed economics

November 3, 2015 11.31am AEDT

Crisis in Empirical Computer Science



https://thenib.com/repeat-after-me

Hvorfor er etterprøvbarhet viktig?

- Vi kan kun stole på vitenskapelige funn som gjenspeiler virkelighet
- På mange måter er dette hele poenget med vitenskap
- Hvis funnene ikke kan etterprøves, er det vanskelig å beskrive dem som vitenskapelige

<u>Publiseringsskjevhet ("file drawer effect")</u>: Studier med nye og statistisk signifikante resultater har større sjanse for å publiseres enn de uten

Takk til Julia Strand

aps ASSOCIATION FOR PSYCHOLOGICAL SCIENCE

General Article

Psychological Science
22(11) 1359–1366

DOI: 10.1177/0956797611417632
http://pss.sagepub.com
SAGE

False-Positive Psychology: Undisclosed Flexibility in Data Collection and Analysis Allows Presenting Anything as Significant

Joseph P. Simmons[1], Leif D. Nelson[2], and Uri Simonsohn[1]
[1]The Wharton School, University of Pennsylvania, and [2]Haas School of Business, University of California, Berkeley

Abstract

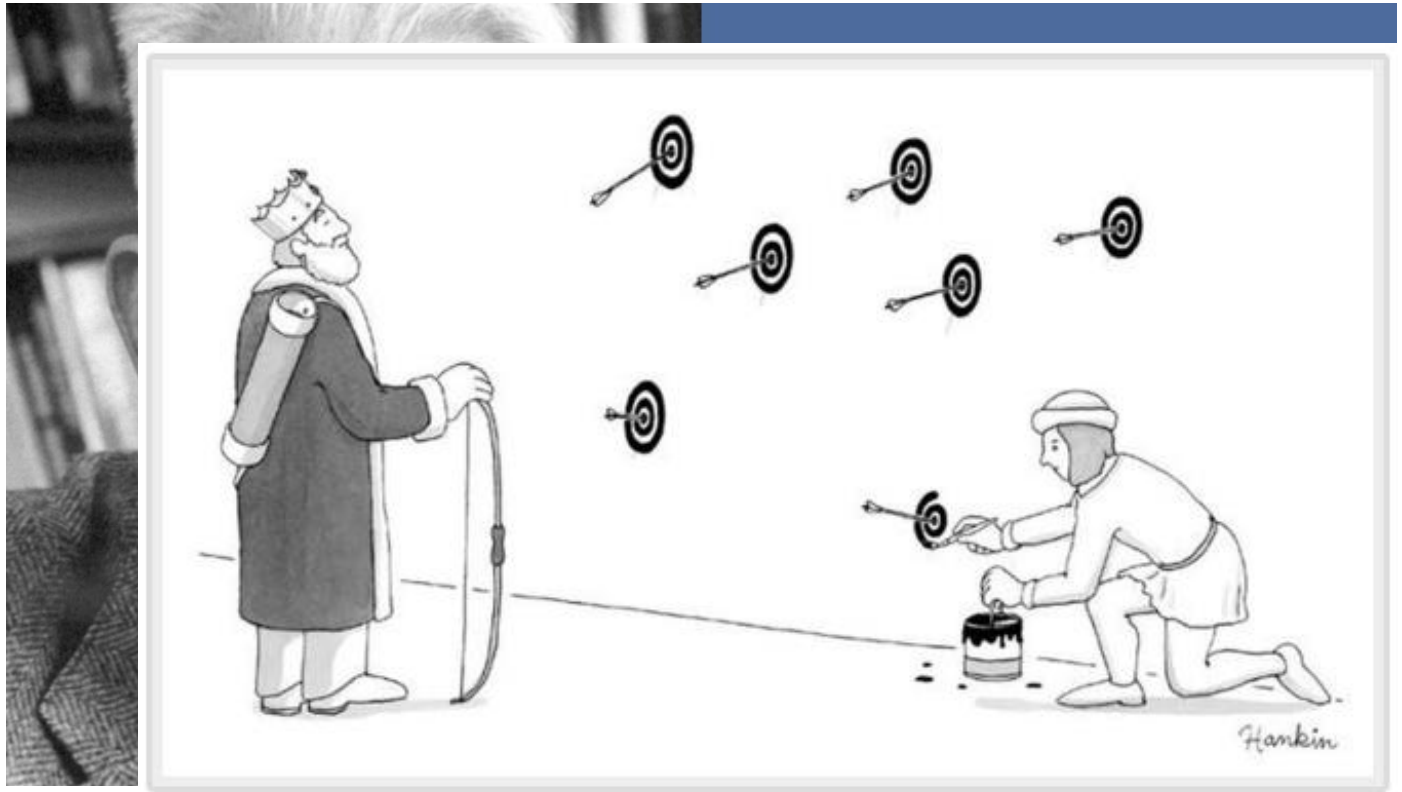
In this article, we accomplish two things. First, we show that despite empirical psychologists' nominal endorsement of a low rate of false-positive findings (≤ .05), flexibility in data collection, analysis, and reporting dramatically increases actual false-positive rates. In many cases, a researcher is more likely to falsely find evidence that an effect exists than to correctly find evidence that it does not. We present computer simulations and a pair of actual experiments that demonstrate how unacceptably easy it is to accumulate (and report) statistically significant evidence for a false hypothesis. Second, we suggest a simple, low-cost, and straightforwardly effective disclosure-based solution to this problem. The solution involves six concrete requirements for authors and four guidelines for reviewers, all of which impose a minimal burden on the publication process.

Keywords

methodology, motivated reasoning, publication, disclosure

Hvor kommer falske positive funn fra?

- p-hacking: forsøke mange mulige analyser inntil du får ønsket resultat
- *HARK*ing



Measuring the Prevalence of Questionable Research Practices With Incentives for Truth Telling

Psychological Science
23(5) 524–532

DOI: 10.1177/0956797611430953
http://pss.sagepub.com
SAGE

Leslie K. John[1], George Loewenstein[2], and Drazen Prelec[3]
[1]Marketing Unit, Harvard Business School; [2]Department of Social & Decision Sciences, Carnegie Mellon University; and [3]Sloan School of Management and Departments of Economics and Brain & Cognitive Sciences, Massachusetts Institute of Technology

Abstract

Cases of clear scientific misconduct have received significant media attention recently, but less flagrantly questionable research practices may be more prevalent and, ultimately, more damaging to the academic enterprise. Using an anonymous elicitation format supplemented by incentives for honest reporting, we surveyed over 2,000 psychologists about their involvement in questionable research practices. The impact of truth-telling incentives on self-admissions of questionable research practices was positive, and this impact was greater for practices that respondents judged to be less defensible. Combining three different estimation methods, we found that the percentage of respondents who have engaged in questionable practices was surprisingly high. This finding suggests that some questionable practices may constitute the prevailing research norm.

Keywords

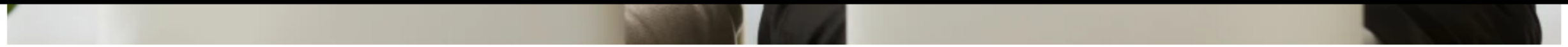
professional standards, judgment, disclosure, methodology

Received 5/20/11; Revision accepted 10/20/11

Although cases of overt scientific misconduct have received significant media attention recently (Altman, 2006; Deer, 2011; Steneck, 2002, 2006), exploitation of the gray area of Martinson, Anderson, & de Vries, 2005; Swazey, Anderson, & Louis, 1993). In the study reported here, we measured the percentage of psychologists who have engaged in QRPs.

- 72% har samlet inn mer data etter at de hadde sett om resultatene var statistisk signifikante..
- 67% har rapportert studier som 'virket'
- og listen fortsetter…

"The results are remarkable, and, if true, one would not allow researchers anywhere near their data"



Tvilsomme praksiser blant forskere kan spenne fra direkte fusk og fabrikasjon av data, til plagiat og tildeling av det som kalles gaveforfatterskap. (Illustrasjonsfoto: fizkes / Shutterstock / NTB scanpix)

Fire av ti forskere i Norge har deltatt i diskutable forskningspraksiser

Hvor stor andel av forskerne har begått mindre overtramp, og hvor mange har vært med på regelrett fusk? Det gir to undersøkelser oss nå svar på.

Bård Amundsen
JOURNALIST

Hvordan har vi kommet hit?

Fordi vi legger altfor stor vekt på **resultater** fra forskningen og ikke tilstrekkelig vekt på **prosessen** som produserer dem

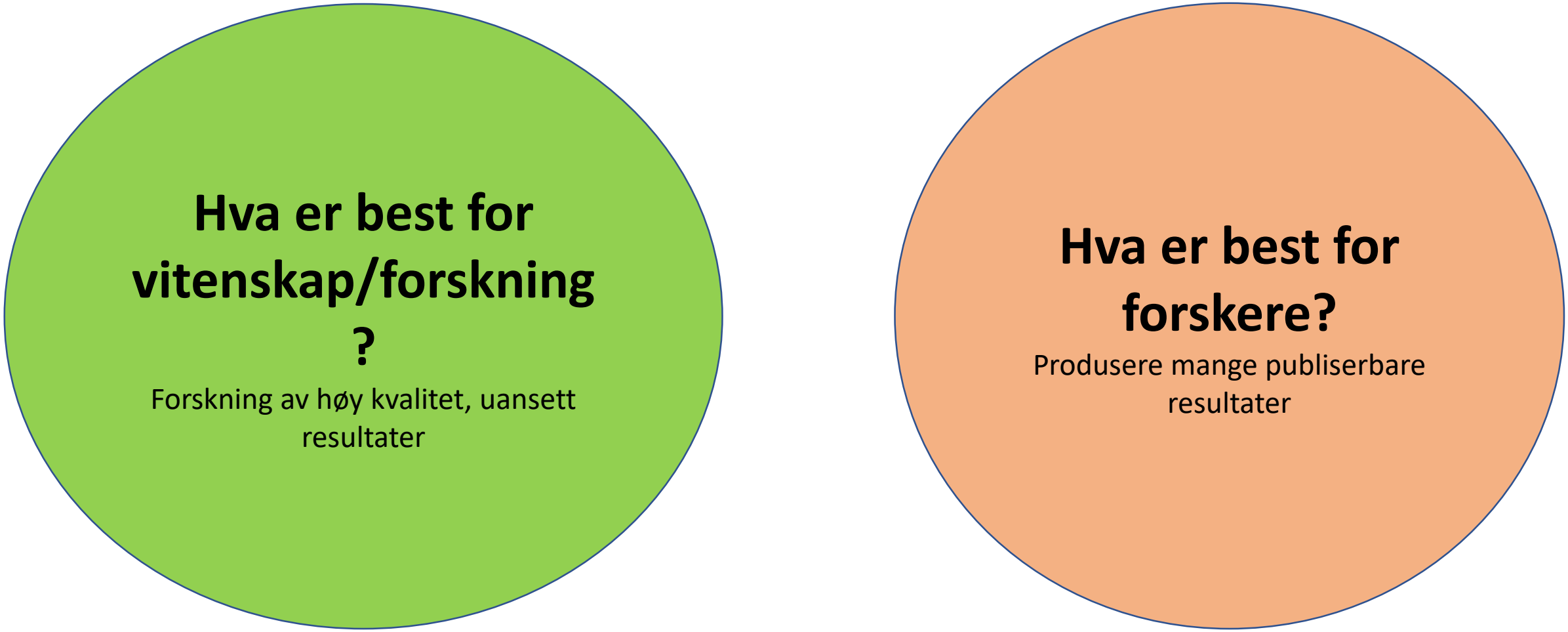
Hvilken del av forskningen må være utenfor din kontroll?

Resultatene

Hvilken del av forskningen er viktigst for å publisere i 'top journals' & for karrieren din?

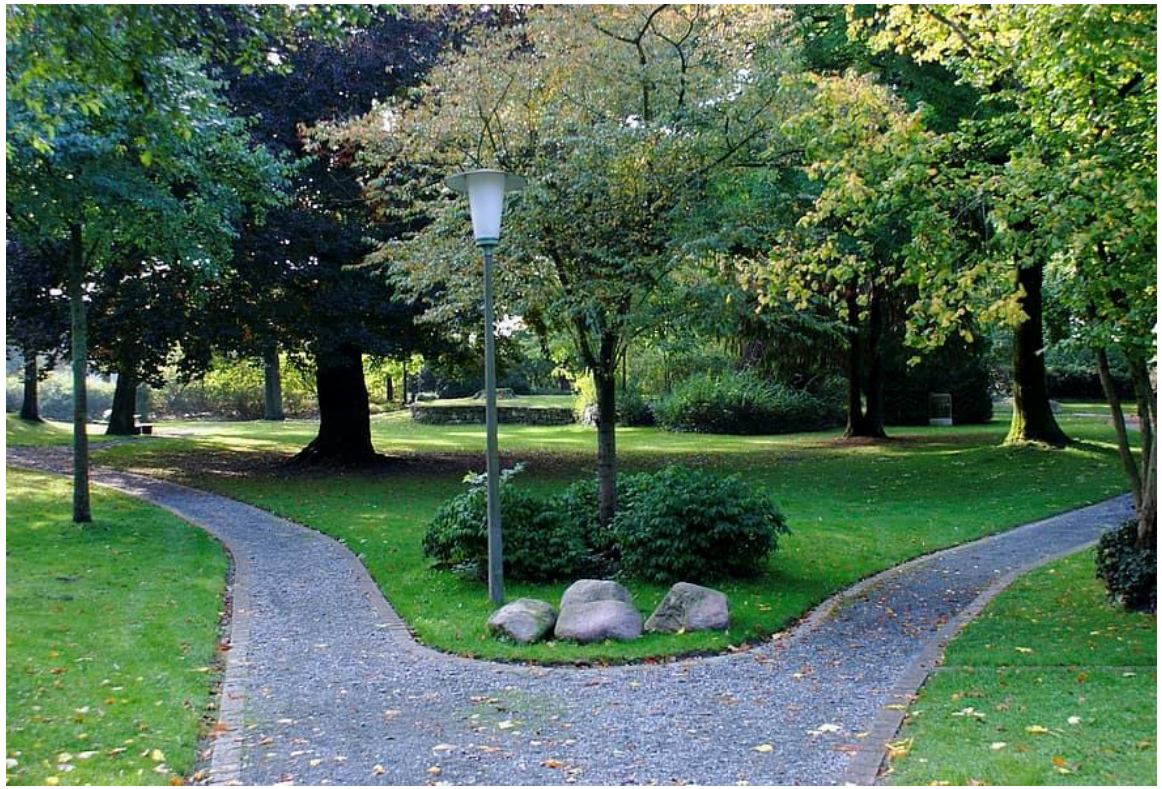
Resultatene

Vitenskap/forskning har et problem med insentiver



see Nosek, Spies & Motyl (2012). Perspectives on Psychological Science, 7(6): 615–631

"Researcher degrees of freedom"



- Hvilke avhengige variabler fokuserer du på?
- Hvilke deltakere ekskluderer du?
- Når stopper du å samle inn data?
- Hvilke analyser gjør du?
- Hvilke funn rapporterer du?

Åpen forskning?

CCO: https://www.pexels.com/photo/abstract-bright-colorful-cover-268941/

Open Access

Open Educational Resources

Open Peer Review

Open Data

Open Material

Open Community

Open Source Code

Open Publishing

Reproduciblity

… and more!

https://osf.io/254t7/

Open science

Open research

Open scholarship

Adapted from: https://www.meetup.com/Berlin-Open-Science-Meetup/

Robin Champieux and Danielle Robinson

En bevegelse

Et epistomologisk perspektiv

Et etisk rammeverk

Et vitenskapelig økosystem

Et politisk mål

Et sett av forskningspraksiser

Et kultuskifte

Både en vitenskapsfilosofisk tilnærming/**prinsipper** og **praksiser**

Eks: preregistrering, registered reports, preprints..

(Corker, 2018; Crüwell et al., 2019; Kalandadze & Hart, 2022)

Tennant, Jon (2018): Open Science is just good science. figshare. Presentation.
https://doi.org/10.6084/m9.figshare.7097738.v1

Preregistrering

- Spesifisere alle hypoteser & metodologiske valg skriftlig i forkant av datainnsamlingen

Reduserer RDoF, publiseringsskjevhet og rapporteringsskjevhet

Experiment 2

Method

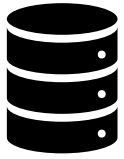
Participants

Ninety-six participants, ages 18–28 years, from the Carleton College community participated in Experiment 2. This sample size was predetermined using power analysis, and this experiment was preregistered via the Open Science Framework (https://osf.io/b94yx/).

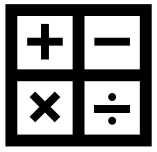
Registered Reports

Generate hypothesis

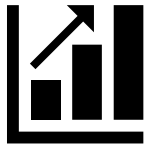
Design study



Run study

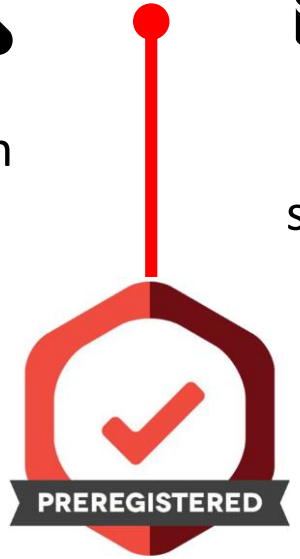


Analyse (test hypothesis)



Interpret data

Publish findings

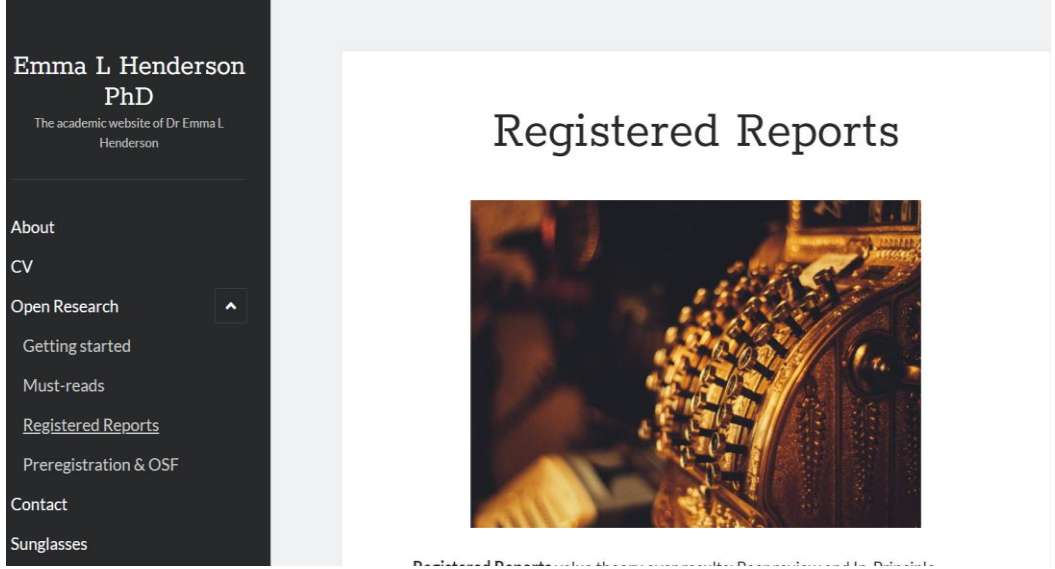


Manuscript

Stage 1 Peer review

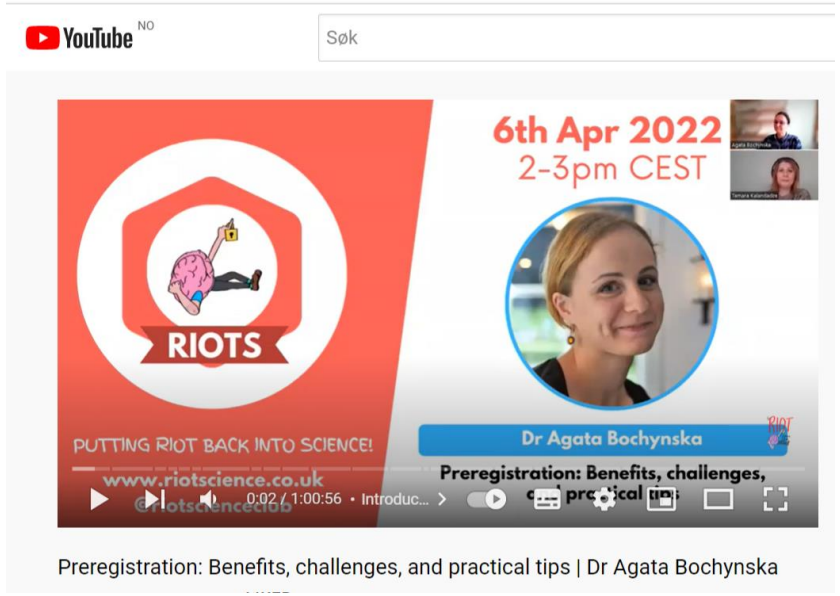
Stage 2 Peer review

Takk til Emma Henderson

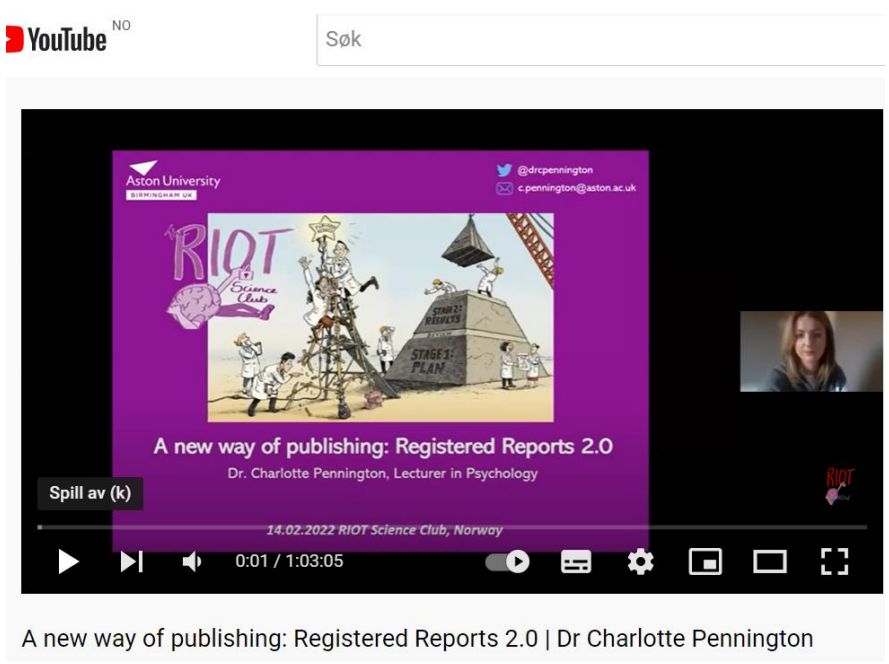


https://emmalhenderson.com/registered-reports/

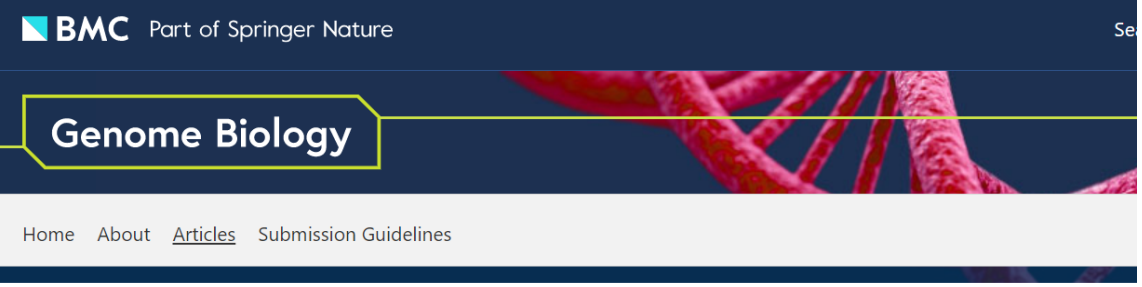
https://www.youtube.com/watch?v=cEu7oGWnUKM



https://www.youtube.com/watch?v=SqF6fQhPURY



https://www.youtube.com/watch?v=6tTuKfUutzY&t=2243s



Comment | Open Access | Published: 08 December 2015

Five selfish reasons to work reproducibly

Florian Markowetz

Genome Biology **16**, Article number: 274 (2015) | Cite this article

Open Science Saves Lives: Lessons from the COVID-19 Pandemic

Lonni Besançon, Nathan Peiffer-Smadja, Corentin Segalas, Haiting Jiang, Paola Masuz
Cooper Smout, Maxime Deforet, Clémence Leyrat

doi: https://doi.org/10.1101/2020.08.13.249847

This article is a preprint and has not been certified by peer review [what does this mean?].

Abstract | Full Text | Info/History | Metrics

Abstract

In the last decade Open Science principles, such as Open Access, study preregistration, use of preprints, making available data and code, and open pe

Muligheter: hvorfor engasjere seg?

«Unselfish»

- Formidler reliabel informasjon/øke tillitt til forskning
- Gjør det mulig for forskere å bygge på andres arbeid istedenfor å gjenoppfinne hjulet
- Andre kan evaluere forskning
- Forskere fra hele verden kan ha tilgang til dine studier (også "selfish")
- Mange, mange flere….

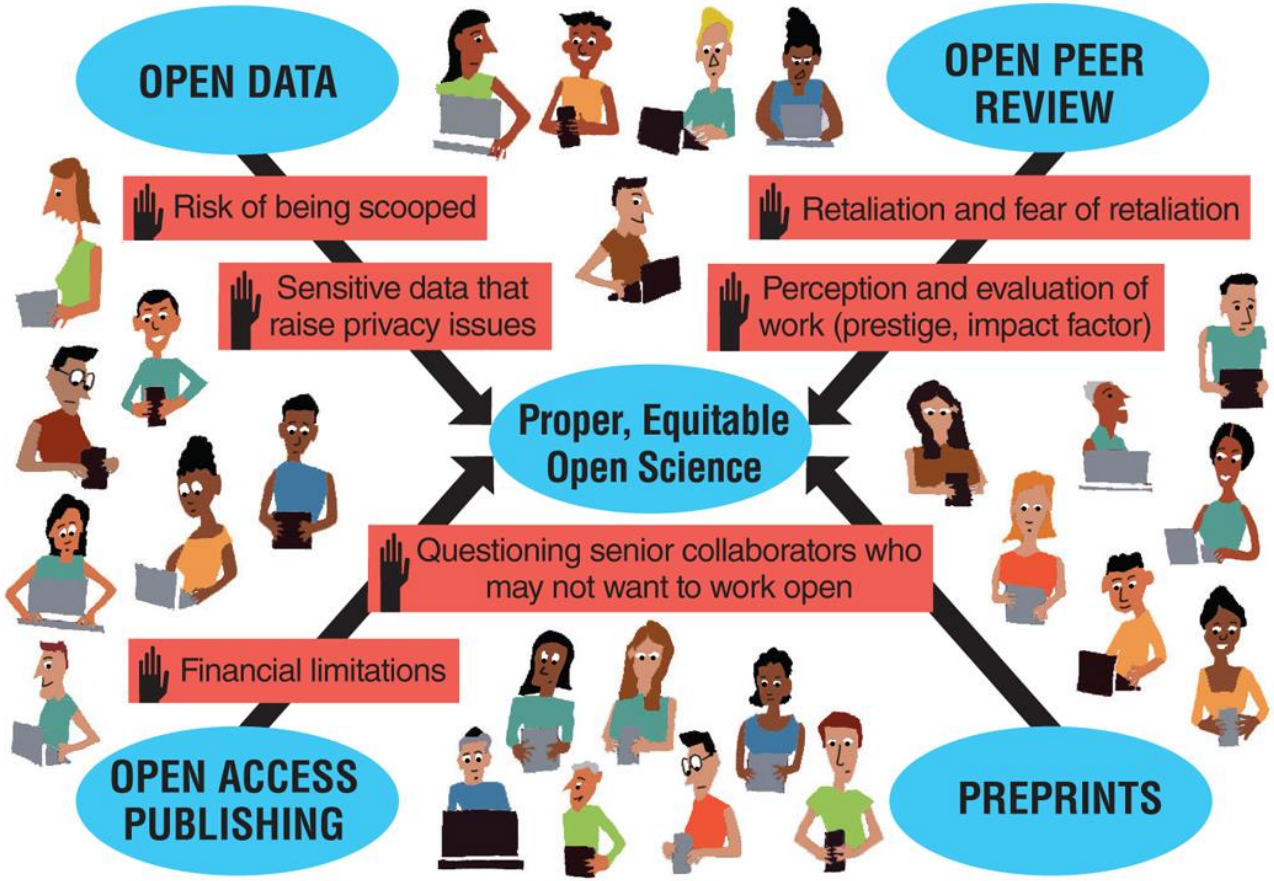
«Selfish»

- Flere siteringer & media dekning
- Kreves av mer og mer tidsskrifter og finansiører
- Ansettelsesprosesser
  - https://osf.io/7jbnt/
- Blir ansett som en god forsker, en som deler osv.
- Mange, mange flere…

(e.g., Kathewala et al., 2019; Markowetz, 2015)

Utfordringer og løsninger

“Open science is built on the same foundation as science itself, and inherits many systematic barriers that already exist in mainstream science.”



AMERICAN Scientist

Open Science Isn't Always Open to All Scientists

BY CHRISTIE BAHLAI, LEWIS J. BARTLETT, KEVIN R. BURGIO, AURIEL M. V. FOURNIER, CARL N. KEISER, TIMOTHÉE POISOT, KAITLIN STACK WHITNEY

Current efforts to make research more accessible and transparent can reinforce inequality within STEM professions.

AMERICAN Scientist

The barriers that make open science unequally accessible fall under two categories: financial and social. The financial barriers are often impassible for some scientists, especially those who are earlier in their career, lack job security (as is common among scientists doing consecutive-term positions such as postdocs), or are at institutions that lack the financial resources to pay for these fees (such as many smaller or public institutions without big endowments). Although there are

It is an unfortunate irony that open-science practices are not equally accessible to all scientists.

Qualitative Methods, Quantitative Methods, Research Ethics

#bropenscience is broken science

Kirstie Whitaker and Olivia Guest ask how open 'open science' really is.

28 September 2020

Utfordringer/barrierer

-strukturelle barrierer/insentiver

-spesielt viktig for sårbare grupper som yngre forskere

F.eks en phd-student som har en veileder som praktiserer åpen forskning vs. en annen som har en veileder som ikke gjør det og kanskje er skeptisk

-Tid og ressurser

Utfordringer/barrierer

- Overveldende
- Man er mer eksponert fordi når alt deles blir det lettere å oppdage feil og hvordan påvirker dette (yngre) forskere?
- Åpen fagfellevurdering: kan du tenke deg hva reaksjonen til en senior forsker kan være hvis en phd-student kritiserer arbeidet til vekdommende
- Deling av sensitive data

Hva kan vi gjøre?

- Ikke gi opp!
- Bekymringer bør diskuteres
- Dette er et personlig valg (positiv holdning)
- Åpen forskning er ikke en “all or nothing”
- “Baby steps” er fint!
- Bedre å gjøre noe enn ingenting!
- Det finnes ressurser!

https://www.norrn.no/

RIOT Science Club

Putting RIOT back into Science

www.riotscience.co.uk | @riots_norway

Ta kontakt hvis du er interessert:
tamara.kalandadze@hiof.no
@t_kalandadze

Open music research between art and science

27th October 13:00-14:00 BST

- Challenges to concert data collection & FAIRifying data
- Privacy and copyright issues in music research.
- Benefits of open music research
- Open Q & A

RIOTS

Prof Alexander Refsum Jensenius

Organised by RIOTS

FREE SEMINAR

Supervisors' role modeling of responsible research practices

16th November 14:00-15:00 GMT

- Supervisors role in fostering open research in PhD students
- Do pro-open research supervisors lead to more reproducible research practices in PhD students?
- Open Q & A

RIOTS

Dr Tamarinde Haven

Organised by RIOTS

Takk for oppmerksomheten! ☺

Tamara Kalandadze
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@t_kalandadze