Research as an open enterprise: an editor's perspective

Philip Campbell

Editor-in-Chief, Springer Nature

EPFL 50th Anniversary 18 October 2019

Acknowledgements

- Elisa De Ranieri, Chief Ed. Nature Communications
- Stavroula Kousta, Chief Ed. Nature Human Behaviour
- Sowmya Swaminathan, Head of Policy, Nature Research
- Henning Schoenenberger, SN data director

- Other publishers, in collaborations and their own initiatives

My roles

My roles include:

- oversee cross-company editorial policies and standards;
- develop cross-company initiatives directed at the SDGs.

This talk reflects on openness as seen through these lenses

Contents

- OA principles
- Policies for openness: integrity
- Policies for openness: disaggregation
- Multidisciplinary and multi-sector openness
- The rise of the machines
- The moral

Springer Nature and open access models

Springer Nature's OA principles

- Springer Nature is committed to a future of full and immediate open access.
- Green open access is only for the transition stage
- During the transition, SN intends to highlight the benefits of OA prospectively and retrospectively in all its subscription and hybrid journals.

Share

A faster path to an open future

Springer Nature Group
By: Steven Inchcoombe, Wed May 8 2019

At Springer Nature we want to find the fastest and most effective route to immediate open access (OA) for all primary research. This blog describes a potential significant way to progress it and we are asking other interested stakeholders to read, consider and comment on this LinkedIn post so all can see if this would receive widespread support.

Author: Steven Inchcoombe
Chief Publishing Officer at Springer Nature

In February, along with many others, we responded to the consultation request from cOAlition S on its implementation guidance. In our submission, we expressed continued strong support for hybrid journals, given they currently publish most of the world's research and their proven ability to enable growth in OA take-up, particularly as part of transformative read and publish deals where we have seen 73-90% success rates. In light of the evidence we presented, we asked Plan S to think again. Similarly, we explained why Plan S's proposed zero embargo green OA, immediately utilising a CC BY license, would

Promoting open components of research

Open research is not just about published papers

SCIENTIFIC DATA

BMC Research Notes

figshare
credit for all your research

(GIGA)n SCIENCE

DataCite
Helping you to find, access, and reuse data

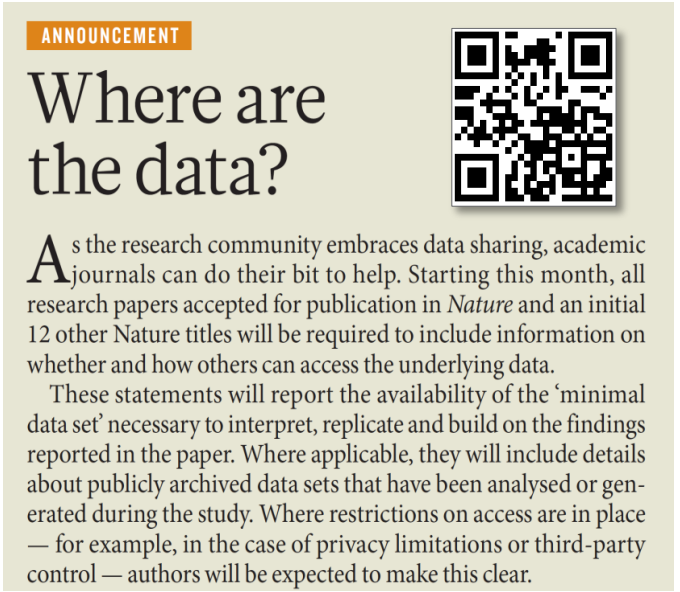
DRYAD
Data available in Dryad

Mandating a data availability statement

Many journals, including Nature and BMC, require all authors to tell readers how they can get hold of their data.

Data availability statement:

- The datasets generated during and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS].
- The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.
- All data generated or analysed during this study are included in this published article (and its supplementary information files).



ANNOUNCEMENT

Where are the data?

As the research community embraces data sharing, academic journals can do their bit to help. Starting this month, all research papers accepted for publication in *Nature* and an initial 12 other Nature titles will be required to include information on whether and how others can access the underlying data.

These statements will report the availability of the 'minimal data set' necessary to interpret, replicate and build on the findings reported in the paper. Where applicable, they will include details about publicly archived data sets that have been analysed or generated during the study. Where restrictions on access are in place — for example, in the case of privacy limitations or third-party control — authors will be expected to make this clear.

Nature **536,** 138 (20016). To learn more go to http://go.nature.com/2bf4vqn

Sharing code and materials is equally important

nature research

"A condition of publication in a Nature journal is that authors are required to make unique materials promptly available to others without undue qualifications."
http://www.nature.com/authors/policies/availability.html

Code share

Papers in Nature journals should make computer code accessible where possible.

A theme in *Nature*'s ongoing campaign for the replicability and reproducibility of our research papers is that key components of publications should be available to peers who wish to validate the techniques and results.

A core element of many papers is the computer code used by authors in models, simulations and data analysis. In an ideal world, this code would always be transportable and easily used by others. In such a world, our editorial policy would be to insist on sharing to allow free use, as we already do (as far as is practicable) with data and research materials. Unfortunately, such an ideal is not easy to attain owing to the amount of extra funding and effort it would require to render some major pieces of code shareable. Nevertheless, we at *Nature* and the Nature research journals want to encourage as much sharing as possible.

Climate modellers have made some strides in this regard. The journal *Geoscientific Model Development* has a good example of such a policy (see go.nature.com/jv8g1w), and an article in *Nature Geoscience* discusses some of the opportunities presented by code sharing, as well as the obstacles (S. M. Easterbrook *Nature Geosci.* 7, 779–781; 2014).

As a leading example of transparency policies in other disciplines, the data journal *GigaScience* requires code used in its papers to be available, and hosts it in a way that allows others to analyse the data in publications. One point made by Easterbrook is that even if the code is shared, others might often make little or no use of it, but on some occasions the take-up will be large.

Nature and the Nature journals have decided that, given the diversity of practices in the disciplines we cover, we cannot insist on sharing computer code in all cases. But we can go further than we have in the past, by at least indicating when code is available. Accordingly, our policy now mandates that when code is central to reaching a paper's conclusions, we require a statement describing whether that code is available and setting out any restrictions on accessibility. Editors will insist on availability where they consider it appropriate: any practical issues preventing code sharing will be evaluated by the editors, who reserve the right to decline a paper if important code is unavailable. Moreover, we will provide a dedicated section in articles in which any information on computer code can be placed. And we will work with individual communities to put together best-practice guidelines and possibly more-detailed rules.

For full details, see our guide for authors at go.nature.com/o5ykhe. For an archive of our content and initiatives concerning reproducibility, see http://www.nature.com/nature/focus/reproducibility. ■

NATURE.COM
To comment online, click on Editorials at:
go.nature.com/xhunqv

Open research components: Supporting reproducibility

COMMENT

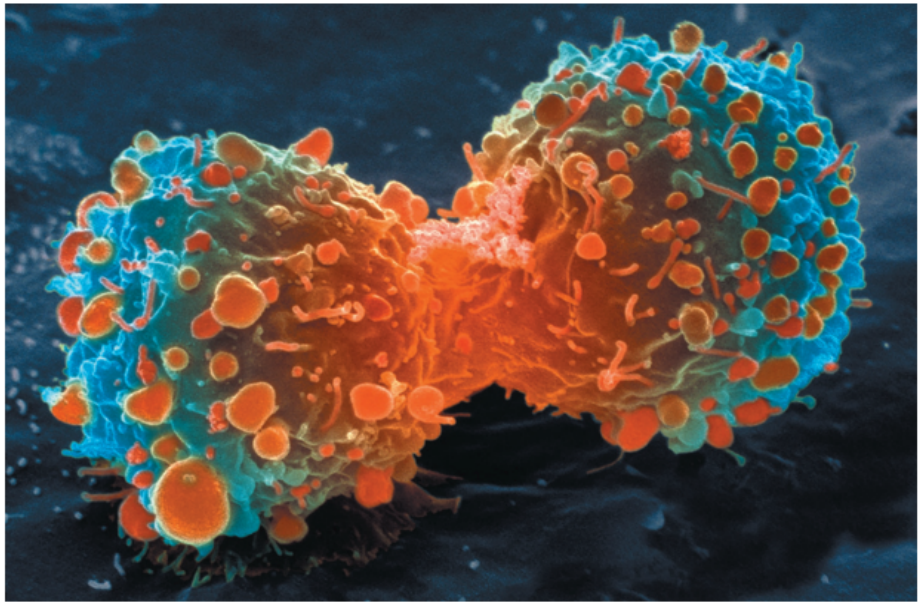
AVIAN INFLUENZA Shift expertise to track mutations where they emerge **p.534**

EARTH SYSTEMS Past climates give valuable clues to future warming **p.537**

HISTORY OF SCIENCE Descartes' lost letter tracked using Google **p.540**

OBITUARY Wylie Vale and an elusive stress hormone **p.542**

S. GSCHMEISSNER/SPL



Many landmark findings in preclinical oncology research are not reproducible, in part because of inadequate cell lines and animal models.

Raise standards for preclinical cancer research

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

Efforts over the past decade to characterize the genetic alterations in human cancers have led to a better understanding of molecular drivers of this complex set of diseases. Although we in the cancer field hoped that this would lead to more effective drugs, historically, our ability to translate cancer research to clinical success has been remarkably low[1]. Sadly, clinical trials in oncology have the highest failure rate compared with other therapeutic areas. Given the high unmet need in oncology, it is understandable that barriers to clinical development may be lower than for other disease areas, and a larger number of drugs with suboptimal preclinical validation will enter oncology trials. However, this low success rate is not sustainable or acceptable, and investigators must reassess their approach to translating discovery research into greater clinical success and impact.

Many factors are responsible for the high failure rate, notwithstanding the inherently difficult nature of this disease. Certainly, the limitations of preclinical tools such as inadequate cancer-cell-line and mouse models[2] make it difficult for even ▶

© 2012 Macmillan Publishers Limited. All rights reserved

Raising reporting standards in life sciences

nature research

Corresponding author(s):

Initial submission Revised version Final submission

Life Sciences Reporting Summary

Nature Research wishes to improve the reproducibility of the work that we publish. This form is intended for publication with all accepted life science papers and provides structure for consistency and transparency in reporting. Every life science submission will use this form; some list items might not apply to an individual manuscript, but all fields must be completed for clarity.

For further information on the points included in this form, see Reporting Life Sciences Research. For further information on Nature Research policies, including our data availability policy, see Authors & Referees and the Editorial Policy Checklist.

Experimental design

1. Sample size

   Describe how sample size was determined.

   Describe the statistical methods that were used to predetermine sample size OR if no sample-size calculation was performed, describe how sample sizes were chosen and provide a rationale for why these sample sizes are sufficient.

2. Data exclusions

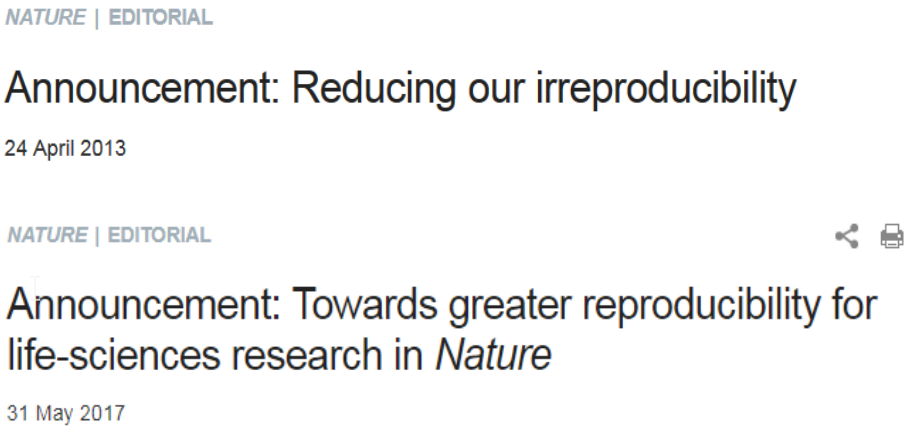
   Describe any data exclusions.

   If no data were excluded from the analyses, state so OR if data were excluded, describe the exclusions and the rationale behind them, indicating whether exclusion criteria were pre-established.

3. Replication

   Describe whether the experimental findings were reliably reproduced.

   For each experiment, note whether any attempts at replication failed OR state that all attempts at replication were successful.



NATURE | EDITORIAL

Announcement: Reducing our irreproducibility

24 April 2013

NATURE | EDITORIAL

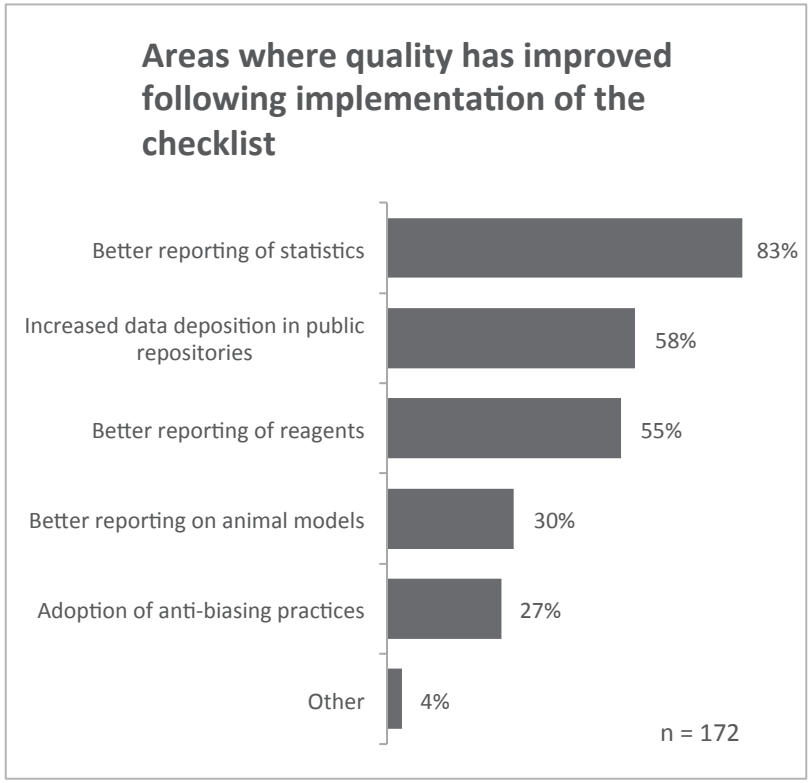
Announcement: Towards greater reproducibility for life-sciences research in *Nature*

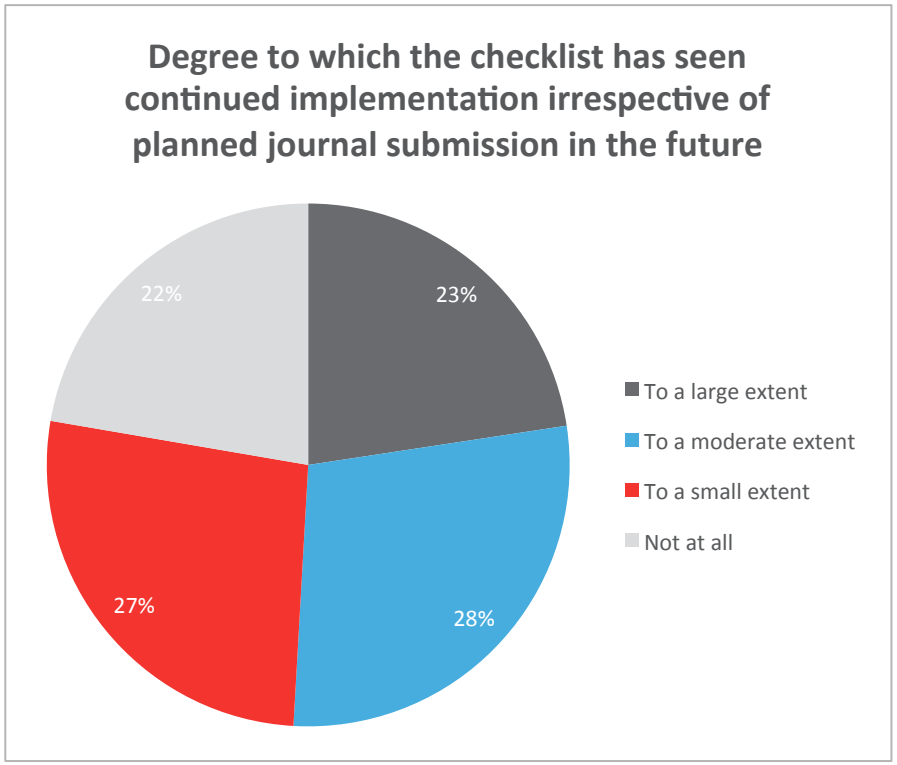
31 May 2017

- 18-point checklist of reporting standards for life science papers, key methodological and analytical parameters including statistics, statement of in-lab replication, mandatory reporting on blinding, randomisation, sample size estimation
- Raise standards on reporting of statistics, and scrutiny during peer review
- Eliminate length restrictions for methods sections
- Encourage linked step-by-step protocols

Impact of checklist on papers and research practise

(2017 survey of published Nature journal authors)





83% of surveyed Nature authors felt that the checklist

had significantly improved reporting of statistics within

papers published in *Nature* journals

78% of surveyed *Nature* journal authors continue to use the checklist at least to a small extent with their continued work

Roughly a quarter stating they were using it to a large extent.

Minimum standards working group

- Multi-publisher collaboration: Group of journal editors and experts in reproducibility and transparent reporting (December 2017)
- Nature Research (Springer Nature), PLOS, Science (AAAS), Cell Press (Elsevier), eLIFE, Wiley, Malcolm MacLeod (Univ of Edinburgh); David Mellor (Centre for Open Science)

Minimum standards working group

- New draft framework and checklist, and encouraging results of pilot tests to be communicated this month, for further consultation.
- Final publication in early 2020.

Minimum standards working group

- New draft framework and checklist, and encouraging results of pilot tests to be communicated this month, for further consultation.
- Final publication in early 2020.

Reproducibility takes time spent by researchers and by editors.

COLLECTION | 16 MAY 2018

How to grow a healthy lab

A healthy research environment is fundamental to good science. But it is an aspect that is rarely discussed. That's partly because a lab's 'health' is complex and difficult to assess — it is the product of a whole host of factors, such as inclusivity, communication,... show more

Special

NEWS FEATURE
16 MAY 2018
Nature

Some hard numbers on science's leadership problems

A Nature survey of 3,200 scientists reveals the tensions bubbling in research groups around the world.

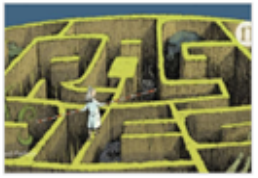
Richard Van Noorden

COMMENT
16 MAY 2018
Nature

Nine pitfalls of research misconduct

Academic leaders must audit departments for flaws and strengths, then tailor practices to build good behaviour, say C. K. Gunsalus and Aaron D. Robinson.

C. K. Gunsalus & Aaron D. Robinson



COMMENT
16 MAY 2018
Nature

Go beyond bias training

Ambiguity in expectations and evaluations harms progress, say Rodolfo Mendoza-Denton and colleagues.

Rodolfo Mendoza-Denton, Colette Patt & Mark Richards

COMMENT
16 MAY 2018
Nature

Health tips for research groups

Nature asked scientists to recommend one thing that institutional and laboratory leaders could do to make science more productive, rigorous and happy.

David Norris, Ulrich Dirnagl ··· Tracy T. Chow

Lab culture matters more!

Funders and universities need to be proactive and transparent about how they foster a healthy research culture

Disaggregation of the research publishing process

Recognising the value of preprints

http://www.nature.com/authors/policies/preprints.html

"Nature Research journals **support posting of primary research manuscripts on community preprint servers** such as arXiv and bioRxiv. Preprint posting is not considered prior publication and **will not jeopardize consideration** at Nature Research journals. Preprints will not be considered when determining the conceptual advance provided by a study under consideration at Nature Research."

Editorial | OPEN

Preprints under peer review

nature COMMUNICATIONS

"We are now offering authors whose submitted manuscript has been deposited in a preprint server, and is selected for peer review, the option of **including their paper on a public list of articles under review** at *Nature Communications*. The list, which will appear on our dedicated website and will be freely accessible to all without registration, will **provide a link to the preprint** on the recognized preprint server. We hope that by offering additional visibility to preprints that are under consideration in our journal, we will not only be able to **accelerate the dissemination of potentially exciting science**, but also complement our peer review process by promoting wider scrutiny of preprints and thus a more holistic review procedure."

In Review

From Springer Nature and Research Square

See your manuscript's review progress with our first-of-its-kind In Review service

Our commitment to research in progress and openness inspires us to think about how to help our authors in new ways. So, together with our partners at Research Square, we've added a new option for you when you submit to select Springer Nature journals. This new option, called In Review, gives you insight over your manuscript's editorial progress; even while it's out for review.

How can you participate?

It's simple! Just select the In Review option when you submit your next article to one of the participating journals.

See the articles that are In Review—now including every BMC Series journal

Hundreds of articles are undergoing peer review on the In Review platform—now including almost every journal in the BMC Series!

With In Review you can:

- ✓ **Track the status of your manuscript**, including when reviews have been received
- ✓ **Share your work** with funders and others in a citeable way while it is under review, and engage the wider community in discussion to help make your article even better including through the Hypothes.is open annotation tool. And social sharing is easy—every article page has social media buttons at the top
- ✓ **Demonstrate the integrity** of your work with a transparent editorial checklist
- ✓ **Benefit from early sharing,** such as more collaboration opportunities and earlier citations.

Your peers will be able to:

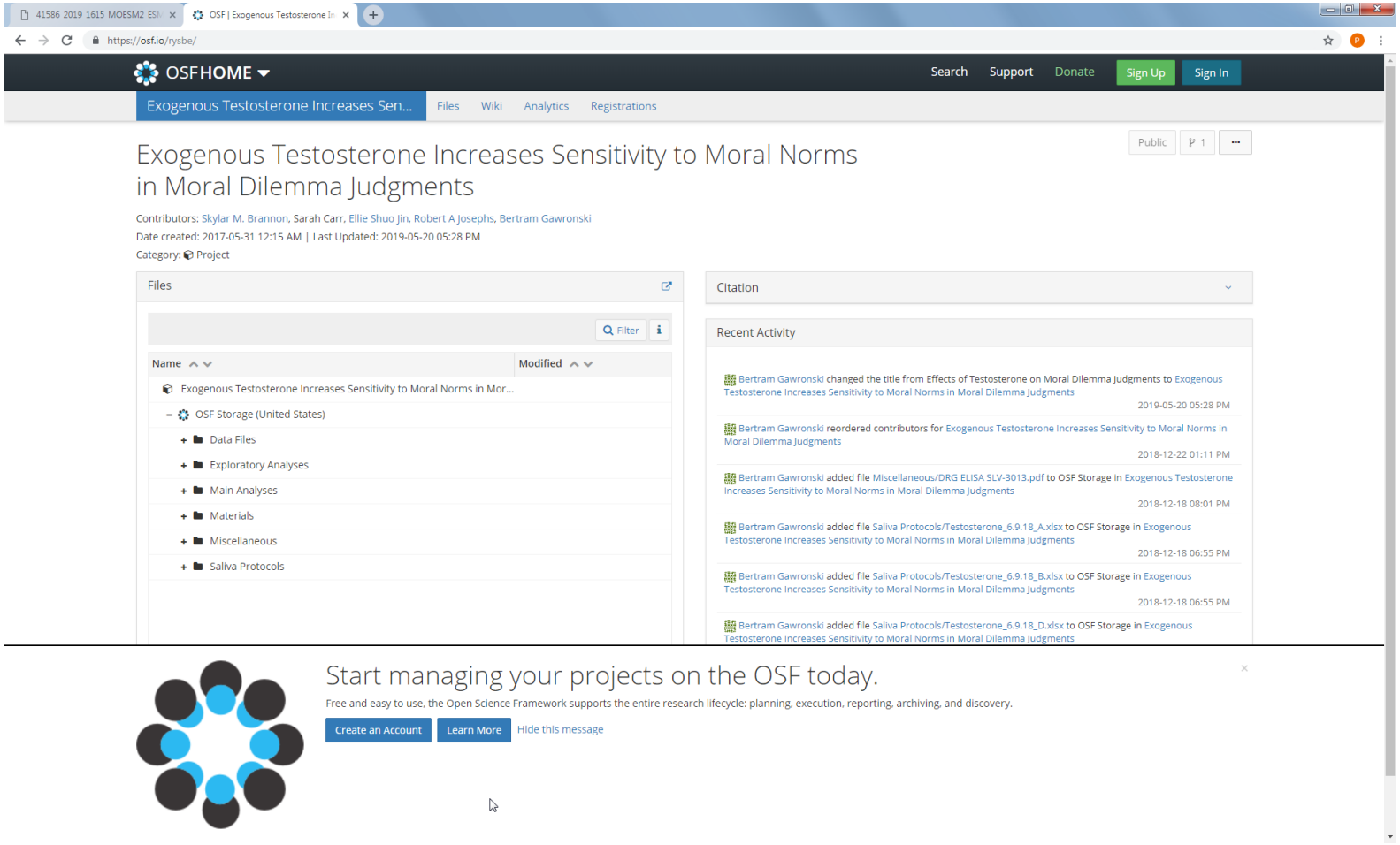
- ✓ **Comment on/see emerging** science in full HTML format
- ✓ **Find new discoveries** with fully-indexed search
- ✓ **Note which editorial checks** the manuscript has already passed
- ✓ **Gain insight into the peer review pipeline** of particular manuscripts at the given journals.

Disaggregation that opposes post-hoc bias:

pre-registered reports

Pre-registered reports workflow

Stage 1


https://osf.io/rysbe/
OSF HOME
Search
Support
Donate
Sign Up
Sign In
Exogenous Testosterone Increases Sen...
Files
Wiki
Analytics
Registrations
Exogenous Testosterone Increases Sensitivity to Moral Norms in Moral Dilemma Judgments
Public
Contributors: Skylar M. Brannon, Sarah Carr, Ellie Shuo Jin, Robert A Josephs, Bertram Gawronski
Date created: 2017-05-31 12:15 AM | Last Updated: 2019-05-20 05:28 PM
Category: Project
Files
Filter
Name
Modified
Exogenous Testosterone Increases Sensitivity to Moral Norms in Mor...
OSF Storage (United States)
Data Files
Exploratory Analyses
Main Analyses
Materials
Miscellaneous
Saliva Protocols
Citation
Recent Activity
Bertram Gawronski changed the title from Effects of Testosterone on Moral Dilemma Judgments to Exogenous Testosterone Increases Sensitivity to Moral Norms in Moral Dilemma Judgments
2019-05-20 05:28 PM
Bertram Gawronski reordered contributors for Exogenous Testosterone Increases Sensitivity to Moral Norms in Moral Dilemma Judgments
2018-12-22 01:11 PM
Bertram Gawronski added file Miscellaneous/DRG ELISA SLV-3013.pdf to OSF Storage in Exogenous Testosterone Increases Sensitivity to Moral Norms in Moral Dilemma Judgments
2018-12-18 08:01 PM
Bertram Gawronski added file Saliva Protocols/Testosterone_6.9.18_A.xlsx to OSF Storage in Exogenous Testosterone Increases Sensitivity to Moral Norms in Moral Dilemma Judgments
2018-12-18 06:55 PM
Bertram Gawronski added file Saliva Protocols/Testosterone_6.9.18_B.xlsx to OSF Storage in Exogenous Testosterone Increases Sensitivity to Moral Norms in Moral Dilemma Judgments
2018-12-18 06:55 PM
Bertram Gawronski added file Saliva Protocols/Testosterone_6.9.18_D.xlsx to OSF Storage in Exogenous Testosterone Increases Sensitivity to Moral Norms in Moral Dilemma Judgments
Start managing your projects on the OSF today.
Free and easy to use, the Open Science Framework supports the entire research lifecycle: planning, execution, reporting, archiving, and discovery.
Create an Account
Learn More
Hide this message

Exogenous testosterone increases sensitivity to moral norms in moral dilemma judgements

Skylar M. Brannon, Sarah Carr, Ellie Shuo Jin, Robert A. Josephs & Bertram Gawronski

Nature Human Behaviour **3**, 856–866 (2019) | Download Citation

860 Accesses | **2** Citations | **348** Altmetric | Metrics »

Abstract

Moral dilemma judgements frequently involve decisions where moral norms and the greater good are in conflict. The current preregistered study tested the effect of the steroid hormone testosterone on moral dilemma judgements using a double-blind administration of testosterone or placebo. Counter to predictions, testosterone administration led to increased inaction in moral dilemmas where harmful actions prohibited by moral norms increase overall well-being. Using a mathematical model to disentangle sensitivity to consequences, sensitivity to moral norms and general preference for inaction versus action, analyses further revealed that testosterone administration influenced judgements by increasing sensitivity to moral norms. Exploratory analyses suggested the opposite pattern for endogenous testosterone measured at baseline, in that higher levels of endogenous testosterone were associated with lower sensitivity to moral norms. The results indicate that the role of testosterone in moral judgements is more complex than suggested by previous findings.

Protocol registration

The stage 1 protocol for this Registered Report was accepted in principle on 13 November 2017. The protocol, as accepted by the journal, can be found at https://osf.io/rysbe/[1].

Access provided by Nature Publishing Group

Download PDF

Associated Content

Collection

Registered Reports

Nature Human Behaviour | Editorial

What science looks like

Nature Human Behaviour | Registered Report

Self-insight into emotional and cognitive abilities is not related to higher adjustment

Joyce C. He & Stéphane Côté

Sections | Figures | References

Main

Moral dilemma judgements

Psychological effects of testosterone

Results

Discussion

Methods

Data availability

Code availability

References

Acknowledgements

Author information

Ethics declarations

Additional information

Supplementary information

From Stavroula Kousta, NHB:

"We have received more than 130 Stage 1 submissions since the journal launched in January 2017. Although our initial submissions were mostly in psychology and neuroscience, we are now receiving submissions from a number of different fields, including genetics, economics, and political science. This suggests that their appeal is increasingly spreading beyond the disciplines where the format originated."

Multidisciplinary, multi-sector benefits of openness

UN Sustainable Development Goals

Growing Better:

Ten Critical Transitions to Transform Food and Land Use

The Global Consultation Report
of the Food and Land Use Coalition

September 2019

Cover image:
Tilahun Gelaye grows a number of crops including mangoes, coffee, and papaya at a watershed restoration and homestead development project in Bahir Dar, the Amhara Region of Ethiopia. He says: "The difference with being involved in the project is huge. Now we are living cleanly and safely. We don't have to go to the market to buy fruits to feed our children, and we feel very healthy."

The **Food and Land Use** Coalition

Growing Better: Ten Critical Transitions to Transform Food and Land Use

Economic Prize

$5.7 trillion economic prize by 2030 and $10.5 by 2050 based on avoided hidden costs

Investment Requirements

$300-$350 billion required each year for the transformation of food and land use systems to 2030

Business Opportunity

$4.5 trillion annual opportunity for businesses associated with the ten critical transitions by 2030

Cross Cutting Reforms to Transform Food and Land Use

Government: Establish targets; break down governmental silos; put a price on carbon; land use planning; repurpose agricultural support and public procurement; massively increase R&D and target it on healthy, natural solutions.

Business & Farmers: Organise pre-competitively to support government reform agendas and set internal standards for specific sectors; establish true cost accounting for food and land use.

Investors & Financial Institutions: Build on the Task Force on Climate-related Financial Disclosures to cover nature; develop a set of financing principles for food and land use; develop innovative finance instruments, including blended finance, to manage risks and leverage opportunities.

Participants in multilateral processes and multi-stakeholder partnerships: Raise ambition in the United Nations Framework Convention on Climate Change 2020 stock-take and ensure an ambitious outcome in the 2020 Convention on Biological Diversity in Kunming, China.

Civil Society: Drive information campaigns for food and land use reform and direct campaigns against serial offenders (public and private).

Solutions-oriented content types, which deserve more support and prestige

Case studies

nature climate change

REVIEW ARTICLE

https://doi.org/10.1038/s41558-019-0440-x

Learning about urban climate solutions from case studies

William F. Lamb[1,2*], Felix Creutzig[1,3], Max W. Callaghan[1,2] and Jan C. Minx[1,2]

Climate mitigation research puts increasing emphasis on cities, but much more could be learned from urban case studies. The overall size, geographic scope and topic content of cases remains unknown, resulting in few attempts to synthesise the bottom-up evidence. Here, we use scientometric and machine-learning methods to produce a comprehensive map of the literature. Our database of approximately 4,000 case studies provides a wealth of evidence to search, compare and review. We find that cities in world regions with the highest future mitigation relevance are systematically underrepresented. A map of the evidence allows case studies to be matched with urban typologies in new and more ambitious forms of synthesis, bringing together traditionally separate strands of qualitative and quantitative urban research.

City-scale reforms in transportation, building design and urban form have substantial potential for reducing energy demand and achieving sustainability co-benefits. But when it comes to learning about appropriate policies, the key questions are: what works, for whom, under what conditions, and why? With no consistent epistemology, enormous variety in boundaries of analysis and a lack of formal research synthesis, urban mitigation solutions remain diffuse and poorly understood[1–3].

Systematic learning hinges on aggregating information about individual cities. Recent work emphasises a quantitative direction to this work, using 'big data' and typologies to identify structural

Overall we identify a large and varied case literature, albeit one with regional and topic biases. To bring the policy relevance of cases to the forefront, we discuss the different opportunities they present for learning. We argue for more ambition in comparative studies, the need for systematic reviews of cases, and the potential to organise case study insights using quantitative typologies of cities.

As a starting point to our analysis, we obtain a sample of urban mitigation articles using a search query that combines synonyms for 'urban' and 'mitigation' in the Web of Science and Scopus literature databases (see Methods). Our interpretation of case study research is straightforward: if an article mentions a city name in the abstract

Expert elicitations

ANALYSIS

https://doi.org/10.1038/s41586-019-1300-6

Climate as a risk factor for armed conflict

Katharine J. Mach[1]*, Caroline M. Kraan[2], W. Neil Adger[3], Halvard Buhaug[4,5], Marshall Burke[1,6], James D. Fearon[7], Christopher B. Field[2], Cullen S. Hendrix[8,9], Jean-Francois Maystadt[10,11], John O'Loughlin[12], Philip Roessler[13], Jürgen Scheffran[14], Kenneth A. Schultz[7] & Nina von Uexkull[4,15]

Research findings on the relationship between climate and conflict are diverse and contested. Here we assess the current understanding of the relationship between climate and conflict, based on the structured judgments of experts from diverse disciplines. These experts agree that climate has affected organized armed conflict within countries. However, other drivers, such as low socioeconomic development and low capabilities of the state, are judged to be substantially more influential, and the mechanisms of climate–conflict linkages remain a key uncertainty. Intensifying climate change is estimated to increase future risks of conflict.

Research over the past decade has established that climate variability and climate change may influence the risk of violent conflict, including organized armed conflict[1,2]. However, use of different research designs, datasets and methods has resulted in divergent findings and stark questions about legitimate approaches to scientific inference[1,3–9]. Previous analyses, many from authors of this paper, have both asserted and refuted a substantial role for climate in conflicts to date and have repeatedly triggered dissenting perspectives[1,3–6,9–22]. Even syntheses have failed to clarify areas of agreement and reasons for disagreement[2,4,5,8,9,12,13,23–26]. There are important uncertainties about when and how climate has caused conflict to date, and under future scenarios[8,23,27,28]. The lack of clarity on current knowledge limits informed management of the risks of conflict to states and human security, and of the risks of continuing greenhouse gas emissions.

We assess the current understanding of the relationship between climate and conflict, based on the structured judgments of experts from diverse disciplines. We define climate as the average weather conditions in a region over a period of time, and conflict as a contested incompatibility that concerns the government and/or territory where the use of armed force between two parties, at least one of which is the government of a state, results in at least 25 battle-related deaths in a year[29]. Thus, the effects of climate, climate-related variability, hazards, trends and change are all included (for example, related to temperature, precipitation, modes of variability, such as the El Niño Southern Oscillation, and extreme events, such as droughts and floods).

The authors of this manuscript consist of 3 assessment facilitators and a group of 11 climate and conflict experts. The group of 11 experts is a sample of the most experienced and highly cited scholars on the topic, spanning relevant social science disciplines (especially political science, economics, geography and environmental sciences), epistemological approaches and diverse previous conclusions about climate and conflict (Methods). The selection of the expert group was done based on expertise necessary to resolve scientific disagreement about the contribution of climate to conflict risks globally and in conflict-prone regions, which requires consideration of comparative and crosscutting

Systematic reviews

Social Systems Evidence | Monthly update

Content for August 2019

During the past month, the systematic reviews listed below were added to Social Systems Evidence, which is the world's most comprehensive, free access point for evidence about strengthening 16 government sectors and program areas, and achieving the Sustainable Development Goals. Note that this page serves as a temporary placeholder to highlight monthly update content until the email service functionality is added to Social Systems Evidence.

We have identified the following 'hot docs' as being of interest to a broad array of social-system policymakers and stakeholders:

- Community-based supplementary feeding for food insecure, vulnerable and malnourished populations - An overview of systematic reviews
- Developing young men's wellbeing through community and school-based programs: A systematic review
- Effectiveness of home fire safety interventions. A systematic review and meta-analysis
- Help-seeking by male victims of domestic violence and abuse (DVA): A systematic review and qualitative evidence synthesis
- The role of academic partnership in disaster risk management: A systematic review
- What factors are associated with resilient outcomes in children exposed to social adversity? A systematic review

Children and youth services

- A critical review of qualitative research into the experiences of young adults leaving foster care services

Harvesting the literatures in depth: Rise of the machines

About us

» History

» Media

Press contacts

Press releases

Research News

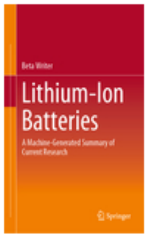
Statements

» Social media

Springer Nature publishes its first machine-generated book

Innovative book prototype provides a compelling machine-generated overview about the latest research on lithium-ion batteries, automatically compiled by an algorithm developed in collaboration with the Applied Computational Linguistics lab of Goethe University Frankfurt/Main (Germany)

London | Heidelberg, 02 April 2019



Springer Nature published its first machine-generated book in chemistry. The book prototype provides an overview of the latest research in the rapidly growing field of lithium-ion batteries. The content is a cross-corpus auto-summarization of a large number of current research articles in this discipline. Serving as a structured excerpt from a huge set of papers, the innovative pipeline architecture aims at helping researchers to manage the information overload in this discipline efficiently.

In close collaboration between Springer Nature and researchers from Goethe University Frankfurt/Main, a state-of-the-art algorithm, the so-called *Beta Writer*, was developed to select, consume and process relevant publications in this field from Springer Nature's content platform *SpringerLink*. Based on this peer-reviewed and published content, the Beta Writer uses a similarity-based clustering routine to arrange the source documents into coherent chapters and sections. It then creates succinct summaries of the articles. The extracted quotes are referenced by hyperlinks which allow readers to further explore the original source documents. Automatically created introductions, table of contents and references facilitate the orientation within the book.

Niels Peter Thomas, Managing Director Books at Springer Nature, said: "Looking back to a long tradition and expertise in academic book publishing, Springer Nature is aiming at shaping the future of book publishing and reading. New technologies around Natural Language Processing and Artificial Intelligence offer promising opportunities for us to explore the generation of scientific content with the help of algorithms. As a global publisher, it is our responsibility to take potential implications and limitations of machine-generated content into consideration, and to provide a reasonable framework for this new type of content for the future."

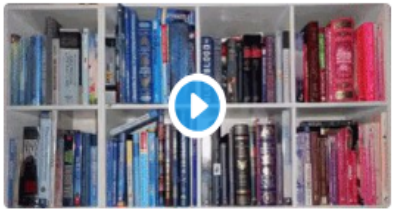
Henning Schoenenberger, Director Product Data & Metadata Management at Springer Nature, added: "We are thrilled to finally publish this new type of research content and make it available for the global research community. While research articles and books written by researchers and authors will continue to play a crucial role in scientific publishing, we foresee many different content types in academic publishing in the future: from yet entirely human-created content creation to a variety of blended man-machine text generation to entirely machine-generated text. This prototype is a first important milestone we reached, and it will hopefully also initiate a public debate on the opportunities, implications, challenges and potential risks of machine-generated content in scholarly publishing."

Tweets by @SpringerNature

Springer Nature Retweeted

TRR 181
@TRREnergy

We are excited to present our TRR book @Book_Fair in Frankfurt on Saturday, Oct 19! Come to our panel discussion "Mit Mathematik das Klima besser verstehen" 2-2.30 pm or visit us at @SpringerNature booth and "Ask the TRR Experts" Carsten, Armin, Stephan and Rebecca! @CENunihh



19m

Springer Nature
@SpringerNature

Low appeal of General Practice and primary care as career option is a recurrent difficulty for healthcare systems in Europe. The European

Embed View on Twitter

Machine-based search of scholarly and other literatures

- Search will be fast, broad and deep
- Excludes human bias
- Great for multidisciplinary themes

The moral of all this is:

The moral of all this is:

Making the literature trustworthy and useful takes more effort and investment by researchers, funders, institutions and publishers than is currently happening, with results that are less easy to measure and celebrate than hiring yet more postdocs and publishing yet more (too often shoddy) papers.

The moral of all this is:

Making the literature trustworthy and useful takes more effort and investment by researchers, funders, institutions and publishers than is currently happening, with results that are less easy to measure and celebrate than hiring yet more postdocs and publishing yet more (too often shoddy) papers.

These are major challenges, and we are all in this together!

Happy birthday to EPFL (50)

Happy birthday to EPFL (50) and Nature (150)

p.campbell@nature.com