

Sharing valid research: Case study of an open-access publisher

Gearóid Ó Faoleán
Senior Manager, Research Integrity

WCRI, 2019



Purpose of today's presentation

Purpose of today's presentation

What is
valid
research

Purpose of today's presentation

What is
valid
research

What are the
issues we
face

Purpose of today's presentation

What is
valid
research

What are the
issues we
face

How does
Frontiers
address these

Who we are

Frontiers is
a scholarly
publisher

Launched in
2007 with a
mission to make
science open

All of
our journals
are fully
open-access

We
collaborate with
many industry
partners

...and what we publish



67

Online
Journals

563

Online
Specialties

Some of our collaborators and partners



chronos



What is **valid**
research?

What is valid research?

Poses a **valid**
research
question and
hypothesis

What is valid research?

Poses a **valid**
research
question and
hypothesis

Applies
correct and
transparent
methodology

What is valid research?

Poses a **valid**
research
question and
hypothesis

Applies
correct and
transparent
methodology

Grounded
in existing
literature

How do
we **share** it?

How do we share it?

**Article-types
focused on
reproducibility**

How do we share it?

**Article-types
focused on
reproducibility**

**Data-sharing,
and sharing
of negative
results**

How do we share it?

Article-types
focused on
reproducibility

Data-sharing,
and sharing
of **negative**
results

Open
Access

Ongoing crises in reproducibility

Ongoing crises in reproducibility

- A recent analysis of 21 prominent social science papers in *Nature* and *Science* found that only 13 could be replicated
- In another study, replication attempts failed in 14 of 28 papers

Ongoing crises in reproducibility

- No longer solely an issue in the social sciences
- Publish or perish landscape in academia
- Novelty as a prerequisite of publishing validity
- The boiler room push for more,

Ongoing crises in reproducibility

- No longer solely an issue in the social sciences
- Publish or perish landscape in academia
- Novelty as a prerequisite of publishing validity
- The boiler room push for more, better

Ongoing crises in reproducibility

- No longer solely an issue in the social sciences
- Publish or perish landscape in academia
- Novelty as a prerequisite of publishing validity
- The boiler room push for more, better and more significant results

Ongoing crises in reproducibility



How **Frontiers**
addresses this

How **Frontiers** addresses this: **Article Types**

How Frontiers addresses this: Article Types

- Many journals publish a small range of article types
e.g. research, review, perspective, clinical trials
- Common additions, depending on
the publisher e.g. letters and opinions
- And occasional niche article types
e.g. registered reports

How Frontiers addresses

- Many journals publish a narrow range of article types e.g. research, review, perspective
- Common additions, depending on the publisher e.g. letters and opinion pieces
- And occasional niche article types e.g. registered reports.

- Technology & Code
- **Methods**
- Classification
- **Data Report**
- Study Protocol

Technology and Code article type

- Technology & Code articles present new technology, code and/or software or a new application of a known technology or software

(...)

Technology & Code articles related to innovative software solutions and/or design should be novel, presented in a well-documented, human-readable format and should be placed online in a repository, with an associated DOI/URL for retrieval.

Technology and Code article type

CODE ARTICLE

Front. Robot. AI, 12 February 2018 | <https://doi.org/10.3389/frobt.2018.00010>



Speech Recognition for the iCub Platform

 **Bertrand Higy**^{1,2},  **Alessio Mereta**³,  **Giorgio Metta**¹ and  **Leonardo Badino**^{4*}

¹iCub Facility, Istituto Italiano di Tecnologia, Genoa, Italy

²Università di Genova, Genoa, Italy

³Advanced Concepts Team, European Space Agency, Noordwijk, Netherlands

⁴Center for Translational Neurophysiology of Speech and Communication, Istituto Italiano di Tecnologia, Ferrara, Italy

This paper describes open source software (available at <https://github.com/robotology/natural-speech>) to build automatic speech recognition (ASR) systems and run them within the YARP platform. The toolkit is designed (i) to allow non-ASR experts to easily create their own ASR system and run it on iCub and (ii) to build deep learning-based models specifically addressing the main challenges an ASR system faces in the context of verbal human–iCub interactions. The

Data Report article type

- Data Report articles present a description of research datasets. Datasets must be deposited in a **public repository** and must be fixed and made publicly available upon publication of the report.

(...)

The protocols and methodology used to collect the data can also be submitted as **Methods articles**.

Methods article type

- Methods articles present either a new or established method, protocol, or technique that is of significant interest in the field.
(...) Results must be replicable .

Methods article type

METHODS ARTICLE

Front. Immunol., 12 September 2011 | <https://doi.org/10.3389/fimmu.2011.00035>

Reproducible isolation of lymph node stromal cells reveals site-dependent differences in fibroblastic reticular cells

Anne L. Fletcher¹, Deepali Malhotra^{1,2}, Sophie E. Acton¹, Veronika Lukacs-Kornek¹, Angelique Bellemare-Pelletier¹, Mark Curry³, Myriam Armant⁴ and Shannon J. Turley^{1,5*}

¹ Department of Cancer Immunology and AIDS, Dana–Farber Cancer Institute, Boston, MA, USA

² Division of Medical Sciences, Harvard Medical School, Boston, MA, USA

³ Flow Cytometry Core Facility, Dana–Farber Cancer Institute, Boston, MA, USA

⁴ Center for Human Cell Therapy, Immune Disease Institute, Boston, MA, USA

⁵ Department of Microbiology and Immunobiology, Harvard Medical School, Boston, MA, USA

Within lymph nodes, non-hematopoietic stromal cells organize and interact with leukocytes in an immunologically important manner. In addition to organizing T and B cell segregation and expressing lymphocyte survival factors, several recent studies have shown that lymph node stromal cells shape the naïve T cell repertoire, expressing self-antigens which delete self-reactive T cells in a unique and non-redundant fashion. A fundamental role in peripheral tolerance, in addition to an otherwise extensive functional portfolio,



Download Article



Export citation

25,364

TOTAL VIEWS



View Article Impact

**Encouraging
negative results**

Encouraging negative results

Author Guidelines

While Frontiers evaluates articles using objective criteria, rather than impact or novelty, your statement should frame the question(s) you have addressed in your work in the context of the current body of knowledge, providing evidence that the findings - whether positive or negative - contribute to progress in your research discipline.

Encouraging negative results

Author Guidelines

While Frontiers evaluates articles using objective criteria, rather than impact or novelty, your statement should frame the question(s) you have addressed in your work in the context of the current body of knowledge, providing evidence that the findings - whether **positive or negative** - contribute to progress in your research discipline.



Encouraging negative results

Research Topic

Non-Invasive Brain Stimulation Effects on Cognition and Brain Activity: Positive Lessons from Negative Findings

The aim of this Frontiers Research Topic is to highlight the value of negative findings for the TBS community, e.g., to guide the choice of stimulation parameters (by means of avoiding unsuccessful designs) and to work towards a more realistic picture of the robustness and reproducibility of TBS effects (by gauging the number of successful relative to unsuccessful attempts). Motivated by many reports of unpublished null results accumulating in file drawers (personal communications, own research), we welcome the submission of high quality studies involving the application of any TBS technique (focusing on either behavioural or neural outcome measures, or both), regardless of statistical significance of the outcome ('negative' or 'positive' findings), provided studies were appropriately designed and supported by a strong rationale. In particular, we welcome submissions of studies in the domain of cognition, e.g., on perception, attention, language, memory, etc., or those looking at resting state electrophysiological (e.g., EEG) measures in healthy participants.

Encouraging negative results

60 articles

276 authors

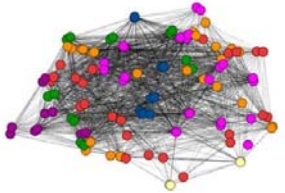
100,458 views

Research Topic

Non-Invasive Brain Stimulation Effects on Cognition and Brain Activity: Positive Lessons from Negative Findings

The aim of this Frontiers Research Topic is to highlight the value of negative findings for the TBS community, e.g., to guide the choice of stimulation parameters (by means of avoiding unsuccessful designs) and to work towards a more realistic picture of the robustness and reproducibility of TBS effects (by gauging the number of successful relative to unsuccessful attempts). Motivated by many reports of unpublished null results accumulating in file drawers (personal communications, own research), we welcome the submission of high quality studies involving the application of any TBS technique (focusing on either behavioural or neural outcome measures, or both), regardless of statistical significance of the outcome ('negative' or 'positive' findings), provided studies were appropriately designed and supported by a strong rationale. In particular, we welcome submissions of studies in the domain of cognition, e.g., on perception, attention, language, memory, etc., or those looking at resting state electrophysiological (e.g., EEG) measures in healthy participants.

Article collections on reproducibility



Research Topic

**Reliability and Reproducibility
in Functional Connectomics**



Research Topic

**Reproducibility and Rigour in
Computational Neuroscience**

Research Topic

**Replication Attempts of Important Results in
the Study of Cognition.**

Research Topic

Data Integration and Reproducibility

Research Topic

**Assessing and Promoting Reproducibility in
Perception and Consciousness Research**

**Our commitment
to Open Data**

Our commitment to Open Data

**Signatory to
TOP Guidelines:**

Our policies on data availability are informed by community-driven standards, which Frontiers endorses, such as the Transparency and Openness Promotion (TOP) guidelines

Our commitment to Open Data



HOME ABOUT

The authors declare a conflict of interest.

Has a version of this manuscript been submitted previously to a Frontiers journal? * 

☒ No

☐ Yes

Ethics statements * 

Does the study presented in the manuscript involve human or animal subjects?

☒ No

☐ Yes

Data availability statement * 

Please fill the following data availability statement detailing where the data supporting the conclusions of the manuscript can be found.

Start

- This manuscript is not currently under consideration for publication elsewhere and has not been previously published by any other journal or publication forum.

MY FRONTIERS

Gearóid Ó Faoleán



- This manuscript adheres to Frontiers [materials and data policies](#) in its reporting requirements and data availability standards.
- I have obtained all necessary consents to permit Frontiers to publish this article, including any third-party materials, on CC-BY terms.
- I have read, understood and hereby accept the [Frontiers Terms & Conditions](#).

© Copyright 2007-2018 Frontiers Media S.A. All rights reserved



Our commitment to Open Data

Collaboration with **Figshare**:

- All supplementary files deposited in FigShare and receive a DOI

Conclusion

- The promotion of varied **article types** and the encouragement of publishing **negative results** and papers addressing **reproducibility** can help alleviate the current crisis in research
- This can all be **scaled** if approached correctly
- **Open Access** is in a unique position in this regard

Thank you.