

Unleashing the potential of preprints: A new publishing model for a digital age

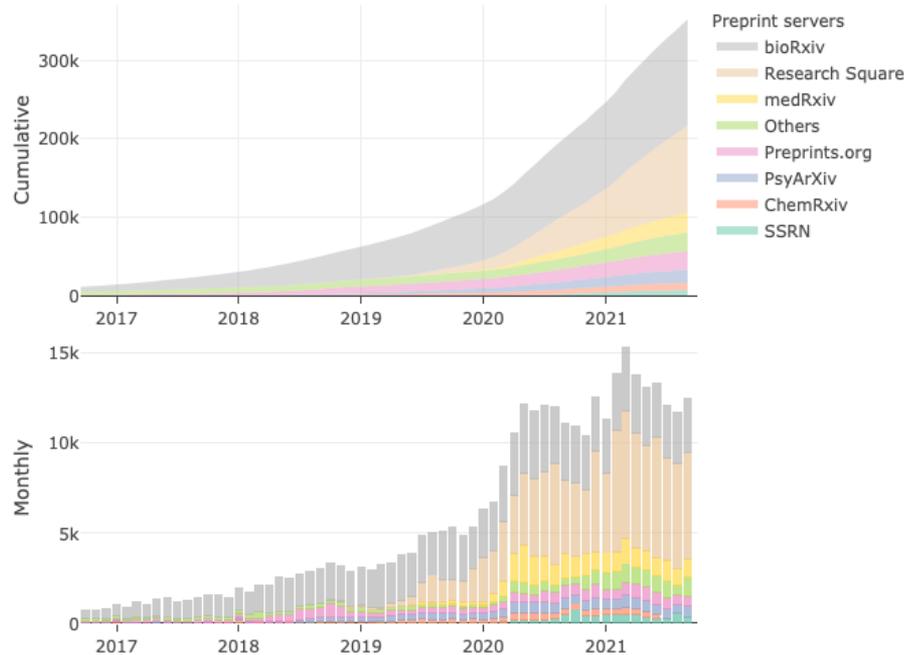
Damian Pattinson

17th November 2021



The rise of preprints

Preprints in Europe PMC



<https://europepmc.org/preprints>

Preprints are:

- Open
- Immediate
- Equitable

Preprints are not:

- Trustworthy
- Curated

Early posting, late reviews

CSH Cold Spring Harbor Laboratory
bioRxiv
THE PREPRINT SERVER FOR BIOLOGY

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bioRxiv posts many COVID19-related papers. A reminder: they have not been formally peer-reviewed and should not guide health-related behavior or be reported in the press as conclusive.

New Results [Follow this preprint](#)

Adaptation supports short-term memory in a visual change detection task

Brian Hu, Marina E. Garrett, Peter A. Groblewski, Douglas R. Ollerenshaw, Jiaqi Shang, Kate Roll, Sahar Manavi, Christof Koch, Shawn R. Olsen, Stefan Mihalas
doi: <https://doi.org/10.1101/2020.03.06.977512>
Now published in *PLOS Computational Biology* doi: [10.1371/journal.pcbi.1009246](https://doi.org/10.1371/journal.pcbi.1009246)

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COVID-19 SARS-CoV-2 preprint on medRxiv and bioRxiv

Subject Area: Neuroscience

Subject Areas: All Articles, Animal Behavior and Cognition, Biochemistry, Biomechanics

Posted August 31, 2020.

Abstract

The maintenance of short-term memories is critical for survival in a dynamically changing world. Previous studies suggest that this memory can be stored in the form of persistent neural activity or using a synaptic mechanism, such as with short-term plasticity. Here, we compare the predictions of these two mechanisms to neural and behavioral measurements in a visual change detection task. Mice were trained to respond to changes in a repeated sequence of natural images while neural activity was recorded using two-photon calcium imaging. We also

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Article	Authors	Metrics	Comments	Media Coverage	Peer Review
Abstract	Author summary	Introduction	Methods	Results	Discussion
Supporting information	Acknowledgments				

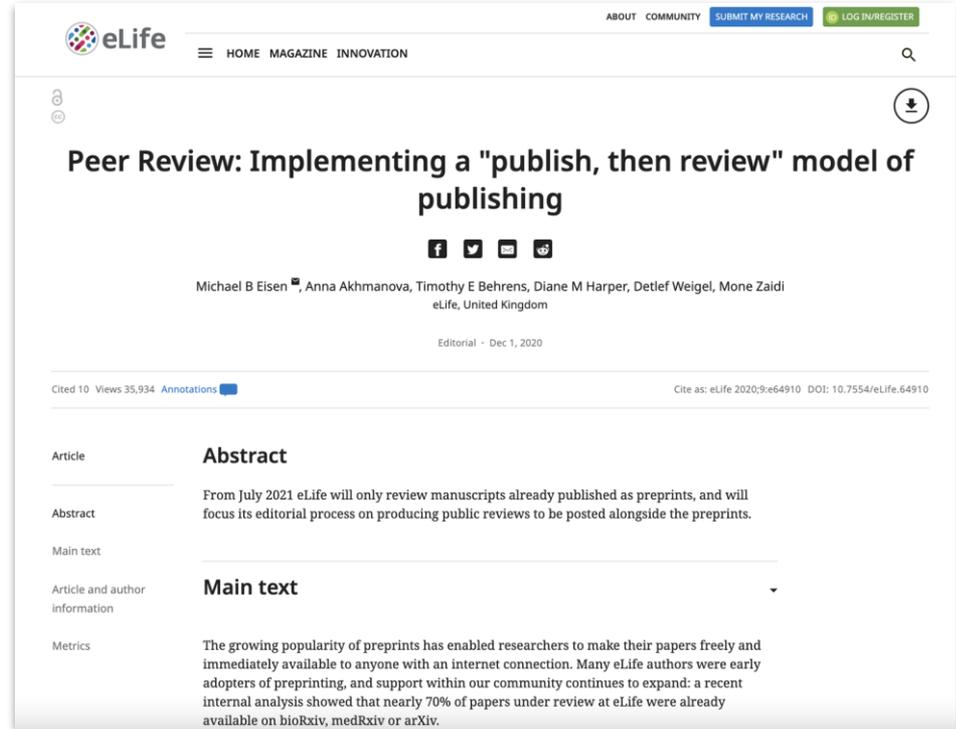
Abstract

The maintenance of short-term memories is critical for survival in a dynamically changing world. Previous studies suggest that this memory can be stored in the form of persistent neural activity or using a synaptic mechanism, such as with short-term plasticity. Here, we compare the predictions of these two mechanisms to neural and behavioral measurements in a visual change detection task. Mice were trained to respond to changes in a repeated sequence of natural images while neural activity was recorded using two-photon calcium imaging. We also trained two types of artificial neural networks on the same change detection task as the mice. Following fixed pre-processing using a pretrained convolutional neural network, either a recurrent neural network (RNN) or a feedforward neural network with short-term synaptic depression (STPNet) was trained to the same level of performance as the mice. While both

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eLife's new editorial model

- All papers invited for review posted as a preprint
- Reviews are consolidated and delivered to authors
- Public reviews are posted alongside the preprint
- Authors choose when to post their reviews



The screenshot displays the eLife website interface. At the top, the eLife logo is on the left, and navigation links for 'ABOUT', 'COMMUNITY', 'SUBMIT MY RESEARCH', and 'LOG IN/REGISTER' are on the right. Below the logo, there are links for 'HOME', 'MAGAZINE', and 'INNOVATION'. The main content area features the article title 'Peer Review: Implementing a "publish, then review" model of publishing' in a large, bold font. Below the title are social media sharing icons for Facebook, Twitter, Email, and Print. The authors listed are Michael B Eisen, Anna Akhmanova, Timothy E Behrens, Diane M Harper, Detlef Weigel, and Mone Zaidi, with their affiliation as eLife, United Kingdom. The article is dated 'Editorial - Dec 1, 2020'. Below the title and authors, there are statistics: 'Cited 10', 'Views 35,934', and 'Annotations'. The article is categorized under 'Article' and 'Abstract'. The abstract text reads: 'From July 2021 eLife will only review manuscripts already published as preprints, and will focus its editorial process on producing public reviews to be posted alongside the preprints.' The 'Main text' section begins with: 'The growing popularity of preprints has enabled researchers to make their papers freely and immediately available to anyone with an internet connection. Many eLife authors were early adopters of preprinting, and support within our community continues to expand: a recent internal analysis showed that nearly 70% of papers under review at eLife were already available on bioRxiv, medRxiv or arXiv.'

Preprint review in action

Reviews posted on the preprint

Evaluation Summaries provide a brief overview of the review findings

The image shows a bioRxiv preprint page for the article "The crystal structure of the Ca²⁺-ATPase I from *Listeria monocytogenes* reveals a pump primed for dephosphorylation". The page includes the Cold Spring Harbor Laboratory logo, the bioRxiv title, a yellow warning banner about COVID-19 papers, and a list of authors: Sara Basse Hansen, Mateusz Dyla, Caroline Neumann, Jacob Lauwring Andersen, Magnus Kjaergaard, and Poul Nissen. The article is noted as published in *Journal of Molecular Biology* with DOI: 10.1016/j.jmb.2021.1167015. Below the article title are social media sharing icons and tabs for Abstract, Full Text, Info/History, and Metrics.

Overlaid on the right is the "Evaluation/discussion of this paper" section. It features a green "TRIIP" (TRIP) status, indicating that the preprint has been reviewed by eLife's Preprint Review service. The text explains that bioRxiv partners with journals and review services to enable posting of peer reviews and editorial decisions related to preprints they are evaluating. A summary of the review states: "This preprint was reviewed using eLife's Preprint Review service, which provides public peer reviews of manuscripts posted on bioRxiv for the benefit of the authors, readers, potential readers, and others interested in our assessment of the work. This review applies only to version 1 of the manuscript." The summary also notes that all reviewers agreed that the LMCA1 complex structures are an important piece of previous work, suggesting that the crystal structure is further refined to include Ca²⁺ and H⁺ ions.

A tweet from Magnus Kjaergaard (@ProteinMagnus) is overlaid on the bottom right. The tweet reads: "This paper previously went through the @eLife 'Open Peer review' and was rejected! This confirms that public rejections do not prevent you from subsequently publishing the paper in a good journal!". The tweet is dated 7:30 am - 10 Jun 2021 and has 1 Retweet and 10 Likes.

Society.org: a platform for aggregating preprint evaluations

The screenshot shows the Society.org website homepage. On the left is a dark navigation sidebar with the Society logo and menu items: Home, Society feed, Groups, Blog, About, and Contact us. The main content area features a header with social media icons and 'Log in' and 'Subscribe' buttons. The main heading is 'Society: the home of public preprint evaluation', followed by a sub-headline: 'Open evaluation and curation together in one place. Let Society help you navigate the preprint landscape.' Below this is a link to 'our blog'. Statistics are displayed: '44 user curated lists', '20k evaluations', and '15k evaluated articles'. A 'What's happening on Society?' button is present. A search bar contains the text 'Search for a topic of interest' and a 'Search' button. Search examples are listed as 'COVID-19, C. elegans'. An illustration on the right shows a person with a backpack walking along a winding path that leads to a sailboat and mountains. At the bottom, a section is titled 'Most actively curated lists'. The footer contains the copyright notice: '© 2021 eLife Sciences Publications Ltd.'



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