

PROFILES IN OPEN: ROGIER KIEVIT



ROGIER KIEVIT is a Sir Henry Wellcome fellow on the Medical Research Council (MRC) Programme Leader Track at the Cognition and Brain Sciences Unit and a Bye-Fellow at Fitzwilliam College, University of Cambridge. His research focuses on lifespan changes in fluid cognitive abilities such as problem solving and reasoning. Dr. Kievit is especially interested in periods of rapid change such as childhood and old age, as well as the neural mechanisms underlying these changes.

What did your funder ask of you with respect making your research open?

I am funded by different streams, most importantly the Medical Research Council (MRC) and the Wellcome Trust. Both of those mandate open access of the final manuscripts, and they are both very supportive of other open science activities. For instance, when we founded our Open Science Committee at the MRC Cognition and Brain Sciences Unit (CBU), the MRC included this initiative in its “best practices” section, and invited representatives from our institute to discuss how we are working on making research materials as available as possible. The Wellcome Trust has long been a supporter of open science innovations, including its support of new publication models such as eLife and Wellcome Open Research that are really moving things forward.

How did you feel about being asked to make your work more open?

I think funders are stepping up – but they could do so even more quickly. For instance, many will suggest you include (open) data management plans, especially in large projects, to make data available to the community. However, unlike making publications open access, to the best of my knowledge this is not always enforced. If this finally changes, resources could be used far more efficiently. For instance, our large aging cohort has led to approximately 50 publications by our group (<http://www.cam-can.org/index.php?content=publications>). However, within the last few years we have made portions of the data available for the purpose of scientific investigation via a managed access system. This has already led to 600 groups from all over the world making use of our anonymized dataset, increasing the scientific value yielded from our study well beyond our own team.

How did you make your research outputs available?

I try to make as much of my work available within the boundaries of informed consent and responsible sharing. This includes sharing stimuli, slides, code, data and papers on resources such as figshare, the Open Science Framework, GitHub, and preprint servers such as BiorXiv and PsyArXiv.

How did making your research outputs available impact further exploration of this topic?

Sharing a particular paper (with open access code and data) on cognitive development led to a colleague from Oxford realizing she had very similar data pertinent to a claim I was making. She sent me the data, which led to us writing an exciting follow up paper together where we observed new interesting patterns. Moreover, as I had publicly deposited the analysis code before receiving the new data, I could demonstrate this new sample was a fully independent replication of our findings. That would have been a less compelling in the absence of a public paper trail.

Did making your work more open lead to subsequent analysis and debate about your findings? If so, does this experience make you more wary of open sharing?

We’ve had some amazing responses to preprints, especially to the two tutorial papers I’ve been involved in. The first was a methods paper, and it has been downloaded more than 6,000 times as a preprint. I received feedback from all over the world with small and larger suggestions, even on the most detailed aspects of the code, which helped improve our manuscript quite a bit. Similarly, we wrote a recent paper on how to make useful plots with three different software packages. We received feedback on our preprint on everything from

the code and tutorial all the way to one of the earliest creators of these plots reaching out to point us to a paper from 1993 that was highly relevant. All in all, I have had nothing but good experiences with sharing, and can highly recommend it.

What advice would you give to other researchers who are contemplating making their work more open?

Do it, to the greatest extent possible. First and foremost, opening up science is the right thing to do. Secondly, it will increase your reach. I work at a very privileged institution, yet I do not have access to all subscription journals I would like to read, let alone less well-resourced institutes or scientists without formal affiliations. I find it genuinely incomprehensible that other scientists don't post preprints to public archives or even their own website. They are missing out on readers (and probably citations). Moreover, in terms of analysis and code documentation, sharing code, data and preprints will force you to be even more careful with every step

you take. You'll soon find that the extra care you took comes in handy down the line when you have to revisit old projects. Ultimately, I hope such practices lead us towards a scientific ecosystem where making mistakes is acceptable, and correcting them as swiftly and publicly as possible is the right thing to do, rather than being treated as a possible public relations challenge.

What would you like to tell funders who are thinking about embedding open science principles into their grants?

That they should all do so, but also think of a mechanism of enforcing whatever principles they mandate. Currently, some groups and projects spend a lot of extra time, effort and resources in making things available, whereas other projects, including those with enthusiastic data sharing proposals, do not. Funders should work to ensure that all of the research they support is shared in a manner consistent with data management plans submitted at the grant application stage.

Additional Resources

Profiles in Open are a service of the Open Research Funders Group (ORFG). The ORFG is a partnership of funding organizations committed to the open sharing of research outputs. Visit our website (www.orfg.org) for more resources including:

- **"Open 101" Tip Sheets**, designed to help specific audiences understand the benefits of open science
- The **"HowOpenIsIt?" Guide to Research Funder Policies**, created to help philanthropic organizations develop open policies consistent with their values
- **The ORFG Curated Reading List**, containing a wealth of scholarly research and real-world case studies that demonstrate the myriad ways in which open access and open data benefit researchers and society alike