

# PROFILES IN OPEN: RUSS POLDRACK



**RUSS POLDRACK** is a professor of Psychology at Stanford University, member of the Stanford Neuroscience Institute and director of the Stanford Center for Reproducible Neuroscience. His work focuses on cognitive neuroscience, or, in lay terms, how the brain gives rise to the mind. His lab uses neuroimaging (particularly functional magnetic resonance imaging) to image human brain function. He is particularly interested in how self-control is exerted in the context of action and decision making. The Poldrack lab also develops infrastructure for the analysis and sharing of neuroimaging data.

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

In general the data and resource sharing requirements of our research funders (primarily NIH and NSF) have been relatively minimal. However, for the last decade we have gone well beyond these requirements in sharing of our data and code, and have received funding from both NSF and NIH explicitly to develop and support these data sharing resources.

## How did you feel about that?

I feel strongly that the products of federally funded research, including the raw data and code, should be made available in as open a manner as possible. In addition to helping encourage reproducibility, this also maximizes the potential benefit of our research subjects' contributions, which is a requirement of the Belmont Principles that govern human subject research in the US.

## How did you make your research outputs available?

We initially developed a project called OpenfMRI that distributed complete raw functional magnetic resonance imaging (fMRI) datasets. With support from the Laura and John Arnold Foundation, we subsequently developed this into a new project called OpenNeuro (<https://openneuro.org>), which allows the automated sharing of many different types of raw data from neuroimaging research.

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

Others have taken our shared data and used them in many different types of analysis, as well as in educational courses.

## 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?

The re-analyses of our data have spurred some debate. For example, a paper by Joshua Carp (2012) took one of our datasets and re-analyzed it using almost 7,000 different analysis workflows. It showed that the results differed substantially across workflows, though overall the results of most workflows were consistent with the results that we had published. In general, the reaction has been appreciation by other researchers who can use the data to ask new research questions without the time and expense of collecting their own new data.

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

There are many fears about sharing data that can stop researchers from doing it. However, in the field of neuroimaging, very few of these feared outcomes have actually come to pass. Shared data have made major impact, and researchers involved in data sharing have benefitted through citations and greater exposure for their research. As the political scientist Gary King says, "The thing that matters the least is being scooped. The thing that matters the most is being ignored." And sharing a useful dataset is an important way to help ensure that you won't be ignored!

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

The requirements for data sharing and other open science principles need teeth if they are going to be effective. Currently, the sharing of data is required

in principle for larger NIH grants, but there are no consequences to failing/refusing to share.

#### Do you have anything else to add on this topic?

The momentum behind open science has grown at an astounding rate in the last ten years, but there are still impediments. In particular, the incentive structures

around hiring and promotion are still stuck in a world where what matters is how many publications one has, not how reproducible the work is. I hope that senior researchers can help change this to ensure that junior researchers doing open science can have a fighting chance for a successful academic career.

#### 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](http://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