

PROFILES IN OPEN: MICHIEL VAN ELK



MICHIEL VAN ELK studied philosophy, biological psychology and the psychology of religion in Utrecht, Amsterdam and Nijmegen. He pursued his PhD in Cognitive Neuroscience at the Donders Institute in Nijmegen, followed by a post-doc position at the EPFL in Switzerland. Currently he is working as a researcher at the University of Amsterdam. His main interest is the cognitive science of religion and he focuses on topics such as absorption, agency detection and magical thinking.

Tell us a bit about your research interests.

I am interested in the psychology of religion and spirituality. Why is it that spiritual experiences come easy to some but not to others? How can it be that despite an increasing trend for secularization, still so many people endorse supernatural beliefs? How did religion evolve in the first place? We use a variety of techniques involving self-reporting measures, brain imaging tools, and field studies to answer these questions.

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

As part of the Templeton-funded Religious Replication Project, we pre-register all our hypotheses and analysis plans prior to the study on the Open Science Framework (see, for instance, <https://osf.io/qzkmh/>). We also make all our experimental materials and datasets publicly available.

How did you feel about that?

We happily embraced the open science policy. In fact, the notion of "open science" is at the heart of the research project that we embarked on. Especially in the psychology of religion and spirituality the credibility of the research in the field is sometimes questioned. The field is accused to be marginal compared to mainstream psychology, to be funded by private foundations that have an interest in the outcomes of the study, and to have an old-fashioned approach to conducting research. Therefore, the use of open science in this area is highly important to increase transparency, reproducibility, and credibility.

How did you make your research outputs available?

We try to publish open access if the journal offers this option. We make our data available on the Open Science Framework and we post preprint versions of manuscripts on discipline-specific servers like PsyArXiv.

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

The religious replication project is still in its infancy. But we already have received wide attention and recognition for this initiative in the field. For instance, for a cross-cultural replication study we set up a large-scale collaboration with 20 labs around the world, who also committed to the protocol that was pre-registered on the Open Science Framework. Setting this up was laborious but rewarding. Ultimately coordinating this project made us realize the joy of cooperation. Many colleagues in very different countries and cultures were more than happy to help out with data collection and had valuable input on the design of the studies. Doing the preregistration for this study was complex and lengthy, but we think we learned a lot through the process and this would definitely facilitate a similar project in the future.

Did making your work more open lead to subsequent analysis and debate about your findings? If so, how does this experience impact your attitude toward open sharing?

As far as I am aware, though some of the datasets that I used have been included in meta-analyses, no one conducted an in-depth analysis of our data. Still, the policy of sharing your own data provides an extra incentive to double-check all the details of your dataset

and the analysis pipeline. It is as if the mere awareness that the data will be viewed by others provides an additional pair of eyes. You don't want to run the risk that someone else finds out a flaw in the coding of your data or the analysis script. Of course, a careful check of one's data should be natural. But we all know too well that time and resources are often limited and that so many other tasks ask our attention, that a speed-accuracy trade-off easily slips in.

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

I am especially enthusiastic about the use of registered reports, in which methods and proposed analyses get reviewed prior to the research actually getting conducted. The benefits are enormous. You profit from feedback on your research ideas at an early stage of the study, rather than after the data has been collected. One can clearly distinguish confirmatory from exploratory analyses. And it counters the file-drawer problem, by also publishing null-results. I would advice early-career researchers to use registered reports as much as possible. The workload shifts from the late phase to the early phase of the project. But it pays off!

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

Please make the use of open science a prerequisite for all grant applications. Also, I hope that more and more funders will see the value and importance of replication studies. First replicate, then extend! Too many grant proposals focus on the next big step forward instead of doing solid and rigorous scientific work.

Do you have anything else to add on this topic?

I expect that in the years to come we will see an increasing discussion on the quality control of open science. What makes a good preregistration? How much detail should be added? When does a confirmatory analysis indeed qualify as confirmatory? These are all questions that are still open for debate. People will make mistakes in the process. But overall, these are exciting times for doing scientific research – and I'm glad to be part of it!

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