MetaMelb – a new research initiative

Metascience, metaresearch, MetaMelb.

[insert picture of the metascience team in Washington, tagged to the MetaMelb twitter]

A new research initiative run through the University of Melbourne, MetaMelb (https://www.metamelb.org/people/) is leading the charge on improving science from the inside out. Where other branches of the philosophy of science are take an external look at the discipline, taking note of the achievements and failures of science after the work has already been completed, metascience research aims to get in at the ground floor and improve science as it is happening.

For MetaMelb, this focus is currently on improvement research in social and behaviour sciences through a post-publication analysis run by the repliCATS (https://replicats.research.unimelb.edu.au/) team. The team is looking at over 3000 published papers in an effort to glean the significant data needed to make their analysis. The outcomes of this analysis should highlight the areas most in need of improvement, which then allows scientists to fill these gaps, creating a more trustworthy science.

The team at MetaMelb draws from as wide a range of disciplines as possible, allowing them to see the problem from as many points of view as possible. The team is headed up by Fiona Fidler, a philosopher of science with a background in psychology and founder of Association for Interdisciplinary Meta-research & Open Science (AIMOS) (https://aimos.community/); and Simine Vazire, a current professor of psychology with an interest in metaresearch, and co-founder of the Society for the improvement of Psychological Science (SIPS) (https://improvingpsych.org/). The rest of the team draws from a wide variety of

areas of expertise, and include both philosophers of scientists and the scientists themselves, from both the University of Melbourne and further afield.

MetaMelb recognises the importance of collaboration between philosophers of science and working scientists in order to create the best research team. Current scientists will have a better idea of the day-to-day activities involved in scientific research, providing crucial information about how research is operating. Philosophers of science will often make observations that people inside the community simply don't pick up on, because it has become par for the course for them. Interdisciplinary collaboration provides the clearest and most nuanced overall picture, allowing the best analysis for improvement.

> "The "meta" in MetaMelb stands for either metascience *or* meta-research. The terms are commonly used interchangeably, and as an interdisciplinary research group we happily embrace this plurality. What we *do* doesn't change." (this will be an inset quote)

Earlier this year, the MetaMelb team travelled to the National Academy of Science in Washington DC to take part in the Metascience conference (https://metascience.info/). The conference featured talks from a variety of researchers interested in the improvement of science through metaresearch. The Metascience conference is important as it provides an opportunity for these researchers to talk about our metascience research, and for publishers and funders to hear about how the incentives that are baked into their operations affect the practice of science. We can discuss with them new models for resource allocation, the dissemination of research, and research evaluation, including peer review.

One of the MetaMelb team, Fallon Mody ran a discussion session on the importance of working towards geographical diversity (https://metascience.info/events/metasciences-geographical-diversity-its-a-problem-lets-talk-about-what-we-can-do/) in Metascience. Having senior people in

publishing at a session like that is useful, because it means a greater chance on institutional follow through on ideas like, for example, increasing diversity in the peer review pool.

Other MetaMelb presentations included a paper by Simine Vazire on *Who's afraid of open science? Transparency as a threat to unearned prestige*, Tom Hardwicke about *How should journals handle scientific criticism?* (https://metascience.info/events/how-should-journals-handle-scientific-criticism/), Beth Clarke on *The Prevalence of Replications in Psychology* (https://metascience.info/events/the-prevalence-of-replications-in-psychology/), and Dan Hamilton on *Frequency of data and code sharing in medicine: Final results of an individual participant data meta-analysis of meta-research studies* (https://metascience.info/events/frequency-of-data-and-code-sharing-in-medicine/).

The group also attended a preconference special event celebrating the 10th anniversary of the Center for Open Science, where Fiona Fidler and Elliot Gould talked about new models for Adaptive Pre-registration and how the Open Science Framework supported our work on repliCATS.

To learn more about MetaMelb and their work, check out their website here: https://www.metamelb.org/; or their twitter here: https://twitter.com/metamelb.