Gender equality in Altmetric's Top 100

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Over the last seven years, the Altmetric Top 100 has celebrated the articles with the highest attention score. Frequently, these popular research outputs reflect the current zeitgeist, and have featured not only researchers but even a US president. 2019 was no exception, as the Top 100 included articles covering everything from the climate crisis to cosmology, and even the consumption of Lego.

Last year, we analysed the gender balance of these hundred most popular research outputs, to see whether communication is a skill universally possessed by all, or whether some researchers were working even harder to get their work out in the wider consciousness of the general public.

Methodology

This year our data analysis was once again carried out by Dr Hélène Draux, data scientist at Digital Science Consultancy. Data science is constantly evolving and improving, and with it are the available methods of analysis.

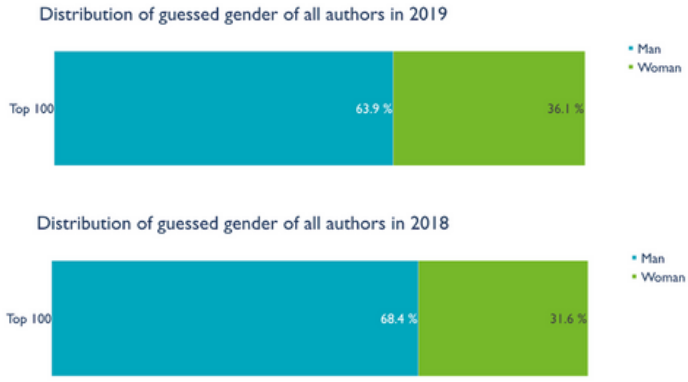
The method used to analyse the data this year was slightly different to last years, and was chosen as it yields more accurate results than before. In order for us to gain any reasonable comparison, we ran last year‘s Top 100 through this same gender guesser tool, to see how much more accurate it was, and to allow us a fair comparison with this year’s results.

Women authors in the Top 100

Last year’s results showed an interesting and encouraging trend, whereby there was a higher percentage of women authors in the Top 100 than there was in research overall.

Encouragingly, that trend seems to have persisted, as we have seen an increase in the number of women authors in the Top 100, from 31.6% up to 36.1%. It is virtually impossible to tell whether this is a consequence of women working harder to share their research, whether women are more accepting of science communication and public engagement as part of their role as a researcher, or

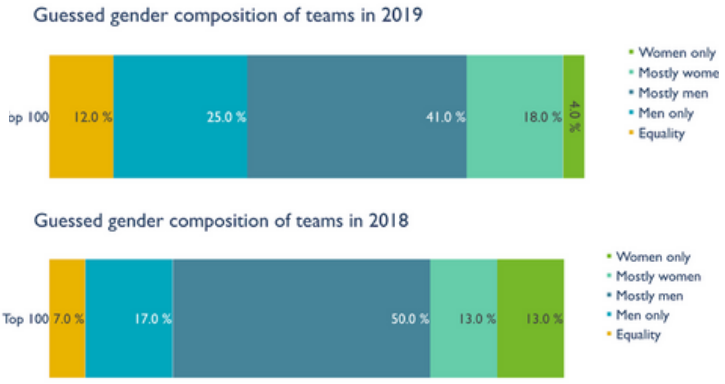
whether the many equality, diversity, and inclusion initiatives are finally paying off. Further research needs to be done in this area in order for us to understand how well this increase in the number of women authors reflects research demographics overall.



Team sizes in the Top 100

Once again reflecting the collaborative nature of research, none of the Top 100 articles were written by one single author. When looking at gender balance within teams, last year's results were very interesting, with 13% of all papers being written by women only teams.This has dropped to 4% this year, possibly owing to the subject matter that featured in this year's top 100. Medicine, health, and life sciences featured heavily in last year's op 100; subjects that often benefit from less of a gender imbalance than some of the physical sciences.

Given that this year's topics included such things as climate change, politics and fake news, it is likely that this swayed the gender balance of many teams of authors to favour men, as per our previous work on gender balance in all subjects.



Towards a more equal research workforce

When looking at the results from a feminist perspective, i.e. equality for all, it is encouraging to see that the percentage of teams that have a 50/50 male to female ratio within their teams has gone up from 7% in 2018 to 12% in 2019. Again, this is just based on the Altmetric Top 100, and may not be reflective of the overall research demographic.

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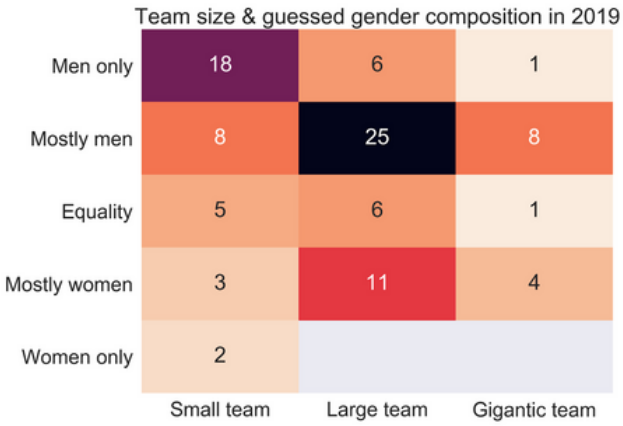

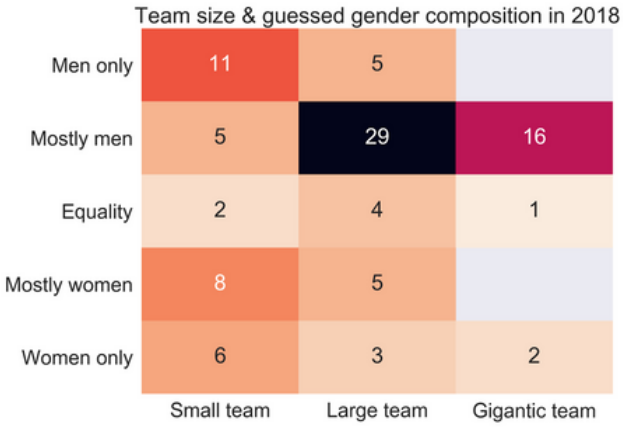

First authorship in the Top 100

In 2018 a third of first authors were women, however in 2019 this has dropped fairly drastically to just one in four women first authors in 2019. This may not necessarily reflect a decline in equality in research, as many subjects do not follow a system whereby the first author is the lead researcher for a paper; computer science, for example, often lists the authors in alphabetical order, a practice that may also exist in other fields of research. By better understanding the different cultures within research, only then are we able to truly understand where progress is being made, and where we need to try harder.

Research culture

Digital Science's mission is to make research more open, collaborative, inclusive, and effective. In order for research to be the best it can possibly be, we need a wide range of viewpoints; firstly to identify the challenges posed by a problem, secondly to approach a problem in a variety of ways to find a solution, and thirdly to understand the people we hope will adopt this new research.

The demographics of research are incredibly skewed, and not representative of society as a whole.Researchers need to better engage the public with the work that they are doing, and provide opportunities for dialogue, hrough which they can better understand the needs of the people that they are trying to help. Science research also needs to diversify

its workforce in order to best tackle the problems of today and tomorrow.

Breaking down barriers to inclusion

We also need to take a hard look at barriers to inclusion that exist within the research landscape, from grant funding to peer review of publications. This is something that Digital Science is fully committed to, as one of the four founding organisations of the Research on Research Institute (RoRI), along with the Wellcome Trust, the University of Sheffield, and the University of Leiden CWTS. RoRI will be taking a scientific, and indeed scientometric, look at the journey that research takes, from grant application all the way through to research outputs, to see what, and indeed who, makes it through the system, and to start to question what isn't being shared with the world and why.

By understanding where barriers exist, we start to identify ways in which we can break down potential points of unconscious bias, and truly make research inclusive, and the best it can possibly be for the benefit of humankind. By implementing these changes, perhaps we will see a more balanced Altmetric Top 100 in years to come, in all aspects of diversity, even beyond gender.

Explore the 2019 edition of the Altmetric Top 100 today at altmetric.com/top100/2019

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