

**Correspondence to Ioannidis J, Klavans R, Boyack KW. The scientists who publish a paper every five days. Nat 2018;561;167-169. (<https://www.nature.com/articles/d41586-018-06185-8>)**

George Davey Smith<sup>1</sup>, Marcus Munafo<sup>1</sup>, Mika Kivimäki<sup>2</sup>

<sup>1</sup> Medical Research Council Integrative Epidemiology Unit, University of Bristol, Bristol, BS8 2BN.  
KZ.Davey-Smith@bristol.ac.uk/Marcus.Munafo@bristol.ac.uk

<sup>2</sup> Department of Epidemiology and Public Health, University College London, London, WC1E 6BT.  
M.Kivimaki@UCL.ac.uk

Corresponding author:

Professor George Davey Smith

Medical Research Council Integrative Epidemiology Unit

Bristol Medical School

University of Bristol

Bristol

BS8 2BN

Email: KZ.Davey-Smith@bristol.ac.uk

Tel: 0117 3310099

## Correspondence

Ioannidis and colleagues identified thousands of authors who had published more than 72 papers in a year and suggest that such high publication records challenge conceptions of what authorship means (1). Two of us were among those so identified, and we agree – what Ioannidis et al highlight (perhaps inadvertently) is how outdated the notion of authorship is in the 21<sup>st</sup> century.

Science is currently experiencing a healthy period of introspection, and there are many suggestions of ways to modernise and improve incentive structures. Clearly, those aspects of credit embodied in authorship practices are central to this. A move from an authorship to a “contributorship” model could play a major role in this regard, as we have previously proposed (2). This reflects the many and varied contributions to large, complex, long-term and management-intensive scientific projects in modern science. An analogy is to another large and complex activity – the credits that roll at the end of a film: many people contribute, some in more central or prominent roles than others, but each has played a role and deserves recognition for this. In the papers we have been “authors” on, this has ranged from the equivalent of director, script supervisor, second assistant camera, casting, lead, extra, production accountant, to gaffer and best boy. Only the contributorship approach can make the exact role clear. The role of data generators, hypothesis-constructors, analysts, literature reviewers, and evidence-synthesisers would all be made clear.

It is notable that physicists were excluded from the analysis of “hyper-prolific authors” because they often work in large teams. Yet in the context of ongoing discussions about the reproducibility of much scientific research, physics is often held up as an example of a mature science that regularly produces high quality, robust findings. The closest to this model in the biomedical sciences is consortia of genome-wide association studies, which have transformed the robustness of reported genetic associations, and where nearly all resulting publications have extensive authorship lists due to the highly collaborative and multi-disciplinary nature of these consortia. Team science and contributorship are the future; “authorship” for such team efforts should be consigned to the past.

George Davey Smith is an epidemiologist with the MRC Integrative Epidemiology Unit (IEU), University of Bristol; Mika Kivimäki is an epidemiologist at University College London, UK. Marcus Munafò is a psychologist at the MRC IEU, University of Bristol, UK.

## References:

1. Ioannidis J, Klavans R, Boyack KW. The scientists who publish a paper every five days. *Nat* 2018;561:167-169. (<https://www.nature.com/articles/d41586-018-06185-8>)
2. Munafò M, Davey Smith G. Repeating experiments is not enough. *Nat* 2018;553:400-401.