

Research parasites are beneficial for the organism as a whole: competition between researchers creates a symbiotic relationship

Fecher, Benedikt; Wagner, Gert G.

Veröffentlichungsversion / Published Version

Arbeitspapier / working paper

Empfohlene Zitierung / Suggested Citation:

Fecher, B., & Wagner, G. G. (2016). *Research parasites are beneficial for the organism as a whole: competition between researchers creates a symbiotic relationship*. (RatSWD Working Paper Series, 256). Berlin: Rat für Sozial- und Wirtschaftsdaten (RatSWD). <https://doi.org/10.17620/02671.20>

Nutzungsbedingungen:

Dieser Text wird unter einer Deposit-Lizenz (Keine Weiterverbreitung - keine Bearbeitung) zur Verfügung gestellt. Gewährt wird ein nicht exklusives, nicht übertragbares, persönliches und beschränktes Recht auf Nutzung dieses Dokuments. Dieses Dokument ist ausschließlich für den persönlichen, nicht-kommerziellen Gebrauch bestimmt. Auf sämtlichen Kopien dieses Dokuments müssen alle Urheberrechtshinweise und sonstigen Hinweise auf gesetzlichen Schutz beibehalten werden. Sie dürfen dieses Dokument nicht in irgendeiner Weise abändern, noch dürfen Sie dieses Dokument für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, aufführen, vertreiben oder anderweitig nutzen.

Mit der Verwendung dieses Dokuments erkennen Sie die Nutzungsbedingungen an.

Terms of use:

This document is made available under Deposit Licence (No Redistribution - no modifications). We grant a non-exclusive, non-transferable, individual and limited right to using this document. This document is solely intended for your personal, non-commercial use. All of the copies of this documents must retain all copyright information and other information regarding legal protection. You are not allowed to alter this document in any way, to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public.

By using this particular document, you accept the above-stated conditions of use.

RatSWD Working Paper Series

www.ratswd.de

RatSWD ■
German Data Forum

256

Research parasites are beneficial
for the organism as a whole:
competition between researchers
creates a symbiotic relationship

Benedikt Fecher and Gert G. Wagner

April 2016

SPONSORED BY THE



Federal Ministry
of Education
and Research

Working Paper Series of the German Data Forum (RatSWD)

The *RatSWD Working Papers* series was launched at the end of 2007. Since 2009, the series has been publishing exclusively conceptual and historical works dealing with the organization of the German statistical infrastructure and research infrastructure in the social, behavioral, and economic sciences. Papers that have appeared in the series deal primarily with the organization of Germany's official statistical system, government agency research, and academic research infrastructure, as well as directly with the work of the RatSWD. Papers addressing the aforementioned topics in other countries as well as supranational aspects are particularly welcome.

RatSWD Working Papers are non-exclusive, which means that there is nothing to prevent you from publishing your work in another venue as well: all papers can and should also appear in professionally, institutionally, and locally specialized journals. The *RatSWD Working Papers* are not available in bookstores but can be ordered online through the RatSWD.

In order to make the series more accessible to readers not fluent in German, the English section of the *RatSWD Working Papers* website presents only those papers published in English, while the German section lists the complete contents of all issues in the series in chronological order.

The views expressed in the *RatSWD Working Papers* are exclusively the opinions of their authors and not those of the RatSWD or of the Federal Ministry of Education and Research.

The RatSWD Working Paper Series is edited by:

Chair of the RatSWD

(since 2014 Regina T. Riphahn; 2009-2014 Gert G. Wagner; 2007-2008 Heike Solga)

**Research parasites are beneficial
for the organism as a whole:
competition between researchers creates
a symbiotic relationship***

Benedikt Fecher^{1, 2, 3} and Gert G. Wagner^{1, 4, 5}

¹ German Institute for Economic Research, Berlin, Germany

² Alexander von Humboldt Institute for Internet und Society, Berlin, Germany

³ Leibniz Association, Berlin, Germany

⁴ Max Planck Institute for Human Development, Berlin,
and Berlin University of Technology, Germany

⁵ Institute for the Study of Labor, Bonn, Germany

April 2016

doi: [10.17620/02671.20](https://doi.org/10.17620/02671.20)

* A shorter version of this note was published as a letter under the title “A research symbiont” in *Science*, Vol. 351, Issue 6280, pp. 1405–1406. We thank *Jennifer Sills* and *Roisin Cronin* for their skillful edits of the published and the present version.

In the *New England Journal of Medicine*, Longo and Drazen (1) critically assessed the concept of data sharing (in medicine). Their main concern is that a “*new class of research person will emerge*” that uses data, which were gathered by other researchers, for their own original research questions. The authors, although indirectly, later referred to this class of researcher as “*research parasites*”.

The label “*research parasites*” certainly does not reflect the zeitgeist of an increasingly collaborative research era and initiatives towards openness and transparency. But even more importantly, Longo and Drazen (1) miss the very point of scientific research when they write, that the researchers may “*even use the data to try to disprove what the original investigators had posited*”. However, the notion that researchers should take nothing as final truth is at the core of the scientific paradigm. This is what Popper (2) proposed with his *critical rationalism* and Merton (3) with his conceptualization of *skepticism*. Longo’s and Drazen’s (1) proposition to “*start with a novel idea, one that is not an obvious extension of the reported work*” is misleading. Medical research is particularly likely to derive great benefit from old ideas through meta-analyses and replication studies (4) that use original datasets.

Longo and Drazen make the valid point that researchers might misinterpret data. However, misinterpretation is common in science, and the only measure that can fight misinterpretation is transparency and competition between researchers. Besides, misinterpretations might be a matter of insufficient data documentation by the principal investigator. Thus, a culture of data sharing and re-analysis most likely would help to improve the quality of data documentations

And, in fact, the creators of the term “research parasite”, Longo and Drazen, miss the core of the scientific paradigm when they write that researchers may “even use the [open] data to try to disprove what the original investigators had posited.” Using research data to try to disprove a result is good scientific practice, especially in light of the replication crisis (5–7). Thus it is perfectly understandable when McNutt (8) declares in an editorial in *Science* that she is proud of being a “research parasite.”

Longo and Drazen are right when they note that scientific data sharing deserves more recognition. However, they indicate that the most adequate form of recognition for data sharing is co-authorship. They suggest to work “*symbiotically, rather than parasitically, with the investigators holding the data, moving the field forward in a way that neither group could*

have done on its own.” (1) Although this is true in particular cases, co-authorship as the sole instrument of credit will unnecessarily restrict the potential of data sharing and could be a detriment to the original researcher, for instance, if the resulting publications lack quality (9). In the case of replication studies and meta-analyses, co-authorship makes no scientific sense.

More suitable instruments for giving credit where credit is due (10, 11) would be a much greater appreciation of data sharing by research communities by introducing citations of data sets, bestowing awards for good datasets, and considering data “production” when assessing scientists’ career prospects, funding applications, and research outputs.

In other words: it is indeed time to develop new metrics for crediting "data production" and “replication efforts”. With this end in mind, research parasites are beneficial for the organism as a whole. Competition between researchers and a formalized incentive structure for data producers (and reusers) would create a symbiotic relation between researchers and research parasites.

References

1. D. L. Longo, J. M. Drazen, Data Sharing. *New England Journal of Medicine*. **374**, 276–277 (2016).
2. K. R. Popper, *The logic of scientific discovery* (Routledge, London; New York, 2002).
3. R. K. Merton, *The sociology of science: theoretical and empirical investigations* (University of Chicago Press, Chicago, 1973).
4. R. Jones, D. Reeves, C. Martinez, Overview of Electronic Data Sharing: Why, How, and Impact. *Current Oncology Reports*. **14**, 486–493 (2012).
5. C. F. Camerer *et al.*, Evaluating replicability of laboratory experiments in economics. *Science*. **351**, 1433–1436 (2016).
6. C. J. Anderson *et al.*, Response to Comment on “Estimating the reproducibility of psychological science.” *Science*. **351**, 1037–1037 (2016).
7. Open Science Collaboration, Estimating the reproducibility of psychological science. *Science*. **349**, aac4716–aac4716 (2015).
8. M. McNutt, #IAmAResearchParasite. *Science*. **351**, 1005–1005 (2016).
9. T. Rohlfing, J.-B. Poline, Why shared data should not be acknowledged on the author byline. *NeuroImage*. **59**, 4189–4195 (2012).
10. German Data Forum (RatSWD), *Building on Progress. Expanding the Research Infrastructure for the Social, Economic, and Behavioral Sciences* (Budrich UniPress, Opladen & Farmington Hills) (2011).
11. Credit where credit is due. *Nature Cell Biology*. **11**, 1–1 (2009).