

Reviewing Peer Reviewing

Cyril Pernet, PhD

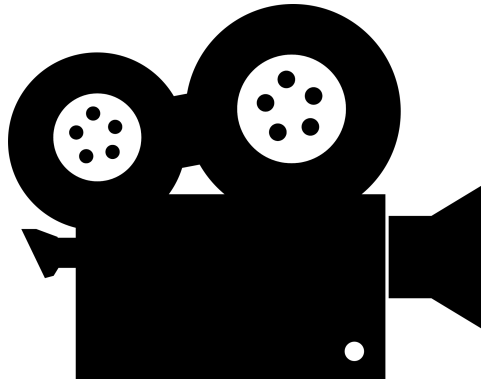
What are scientific articles for?

- communication
- demonstrate productivity (allowing to get grants, jobs, promotions)

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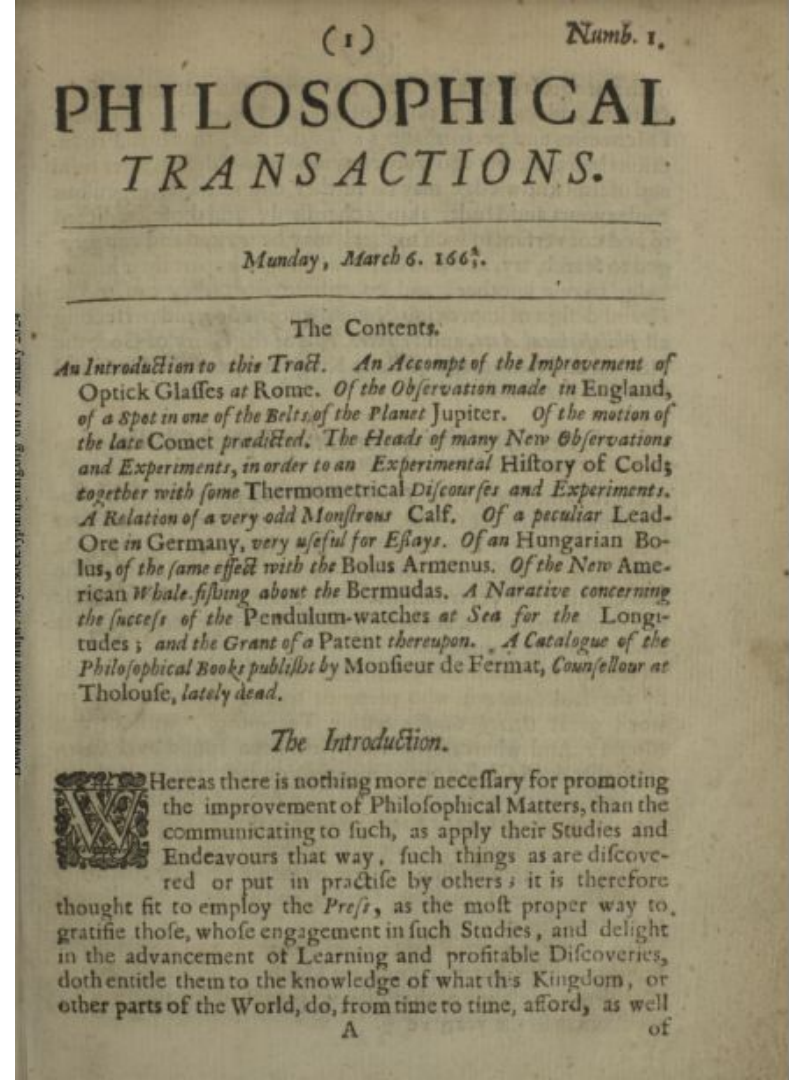
Peer review can be annoying



Peer Review

Supposedly, reviewers have been used when needed (external expert) since day 1, but a formal process appeared only 90 years later.

the aim was generally to protect the reputation of the scientific society that published the journal rather than to assess the merits of articles





CREDIBILITY, PEER REVIEW, AND *NATURE*, 1945–1990

by

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This paper examines the refereeing procedures at the scientific weekly *Nature* during and after World War II. In 1939 former editorial assistants L. J. F. Brimble and A. J. V. Gale assumed a joint editorship of *Nature*. The Brimble–Gale era is now most famous for the editors’ unsystematic approach to external refereeing. Although Brimble and Gale did sometimes consult external referees, papers submitted or recommended by scientists whom the pair trusted were often not sent out for further review. Their successor, John Maddox, would also print papers he admired without external refereeing. It was not until 1973 that editor David Davies made external peer review a requirement for publication in *Nature*. *Nature*’s example shows that as late as the 1960s a journal could be considered scientifically respectable even if its editors were known to eschew systematic external peer review.

equipment, and to Dr. G. E. R. Deacon and the captain and officers of R.R.S. *Discovery II* for their part in making the observations.

¹ Young, F. B., Gerrard, H., and Jevons, W., *Phil. Mag.*, **40**, 149 (1920).

² Longuet-Higgins, M. S., *Mon. Not. Roy. Astro. Soc., Geophys. Supp.*, **5**, 285 (1949).

³ Von Arx, W. S., Woods Hole Papers in Phys. Oceanog. Meteor., **11** (3) (1950).

⁴ Ekman, V. W., *Arkiv. Mat. Astron. Fysik. (Stockholm)*, **2** (11) (1905).

MOLECULAR STRUCTURE OF NUCLEIC ACIDS

A Structure for Deoxyribose Nucleic Acid

WE wish to suggest a structure for the salt of deoxyribose nucleic acid (D.N.A.). This structure has novel features which are of biological interest.

A structure for nucleic acid has already been proposed by Pauling and Corey¹. They kindly made their manuscript available to us in advance of publication. Their model consists of two intertwined chains, with the phosphates near the axis, and the bases on the outside. In our structure the bases are on the inside and the phosphates on the outside. (1) We believe that the material which gives the X-ray diagrams is the salt, not the free acid

is a residue on each chain every 3.4 Å. in the z-direction. We have assumed an angle of 36° between adjacent residues in the same chain, so that the structure repeats after 10 residues on each chain, that is, after 34 Å. The distance of a phosphorus atom from the fibre axis is 10 Å. As the phosphates are on the outside, cations have easy access to them.

The structure is an open one, and its water content is rather high. At lower water contents we would expect the bases to tilt so that the structure could become more compact.

The novel feature of the structure is the manner in which the two chains are held together by the purine and pyrimidine bases. The planes of the bases are perpendicular to the fibre axis. They are joined together in pairs, a single base from one chain being hydrogen-bonded to a single base from the other chain, so that the two lie side by side with identical z-co-ordinates. One of the pair must be a purine and

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NATURE

April 25, 1953 VOL. 171

King's College, London. One of us (J. D. W.) has been aided by a fellowship from the National Foundation for Infantile Paralysis.

J. D. WATSON
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Medical Research Council Unit for the
Study of the Molecular Structure of
Biological Systems,
Cavendish Laboratory, Cambridge.
April 2.

¹ Pauling, L., and Corey, R. B., *Nature*, **171**, 346 (1953); *Proc. U.S. Nat. Acad. Sci.*, **39**, 84 (1953).

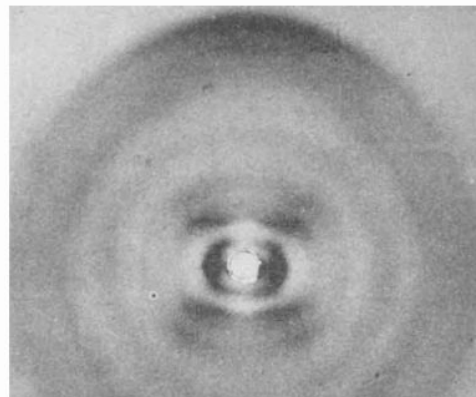
² Furberg, S., *Acta Chem. Scand.*, **6**, 634 (1952).

³ Chargaff, E., for references see Zamenhof, S., Brawerman, G., and Chargaff, E., *Biochim. et Biophys. Acta*, **9**, 402 (1952).

⁴ Wyatt, G. R., *J. Gen. Physiol.*, **36**, 201 (1952).

⁵ Astbury, W. T., *Symp. Soc. Exp. Biol.*, **1**, Nucleic Acid, 66 (Camb. Univ. Press, 1947).

⁶ Wilkins, M. H. F., and Randall, J. E., *Biochim. et Biophys. Acta*, **9**, 402 (1952).



How dare you peer review me!

Well into the twentieth century, many renowned scientists went their entire careers without having a paper refereed—and were not always enthusiastic when introduced to the practice. In 1936, for instance, Albert Einstein was extremely offended when he learned that the editor of *Physical Review* had sent his submitted paper to an external referee. In a terse note to the editor, John Tate, Einstein wrote that he and his co-author

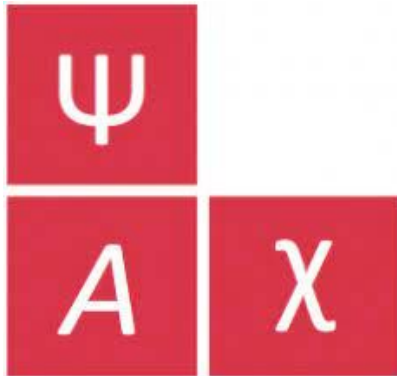
had not authorized you to show [our manuscript] to specialists before it is printed. I see no reason to address the—in any case erroneous—comments of your anonymous expert. On the basis of this incident I prefer to publish the paper elsewhere.⁹

D. Kennefick, 'Controversies in the history of the radiation reaction problem in general relativity', in *The expanding worlds of general relativity* (H. Goenner et al.), pp. 207–234 (Springer, New York, 1999), at pp. 207–209

Preprints (1st filter for appropriate, sci. sound)



arXiv server, set up in 1991



Psyarchiv in 2016



bioarchive in 2013, chemarchive, 2017,
medarchive in 2019

You review all the time, it's called Journal club

Post-online? <https://pubpeer.com/>

Peer reviewer Oath: <https://f1000research.com/articles/3-271/v2>

Pros and Cons

- **Anonymous reviews**
- **Signed Reviews**
- **Publish reviews and responses**
- **Publish then review --**

<https://elifesciences.org/about/peer-review>