

Writing for Impact

What makes a “great” paper?

What makes a paper “great”? Great science!

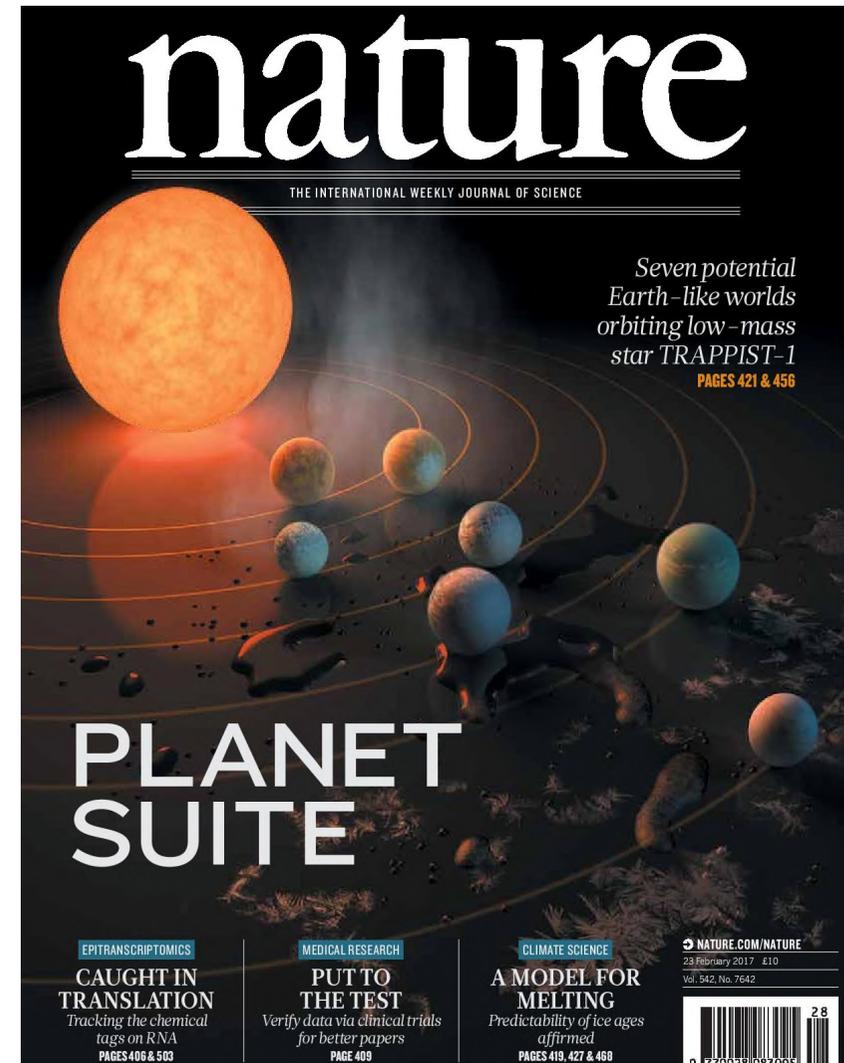
Blockbuster science

The ‘breakthrough’ results that make the headlines

Great science

Any worthwhile science undertaken with rigour and passion is ‘great’ science

Any great science (addressing questions big or small) can form the basis of a great paper...



Turning your great science into a GREAT paper

A GREAT paper should:

- be the culmination/celebration of a project, big or small
- be written with the same attention to detail – and passion – as the research underlying it
- be read, used and (maybe) even enjoyed

A GREAT paper won't:

- be written and published solely for the purpose of bolstering a CV. Just because a paper can be written doesn't necessarily mean that it should be written, at least at this point in time
- be seen as a chore to write – if you do not feel any passion for the paper, it is most unlikely that others will too!



Know your audience



Hold their attention



Lay foundations

Know your audience #1

Think about who might be interested in the work

- Your immediate community (hopefully!)
- Others in the same or closely-related disciplines (possibly)
- The scientific community at large (rarely)
- ... and the general public (who knows?!?)

Context is key, regardless of audience

- Motivation: What was the question I was tackling, and why?
- Result: What did I find, and how does this relate to the motivation?
- Implication: Where do we go from here?

Know your audience #2

Have I assumed too much prior knowledge?

- Even specialists can struggle to follow arguments in highly technical fields – help them!
- Be succinct, but don't be obtuse – and don't write in 'code'!
- Explaining is not the same as 'dumbing down'

Be realistic

- Not every result will 'cure cancer' or 'disprove Einstein' – yet many results have the potential to motivate and inspire outside the immediate community
- Don't exaggerate – you want to attract expert readers, not put them off
- Feel free to speculate – but clearly label it as such
- Choose your journal with the target audience in mind

Everyone is busy

Authors, referees, editors and readers are all busy people – time is precious

To maximise the impact of your work, you first need to ensure that it gets read, which in turn requires an investment of time on the part of the reader

Focus on getting the key information across as efficiently and as usefully as possible



Be mindful of your readers' time #1

A lesson from journalism

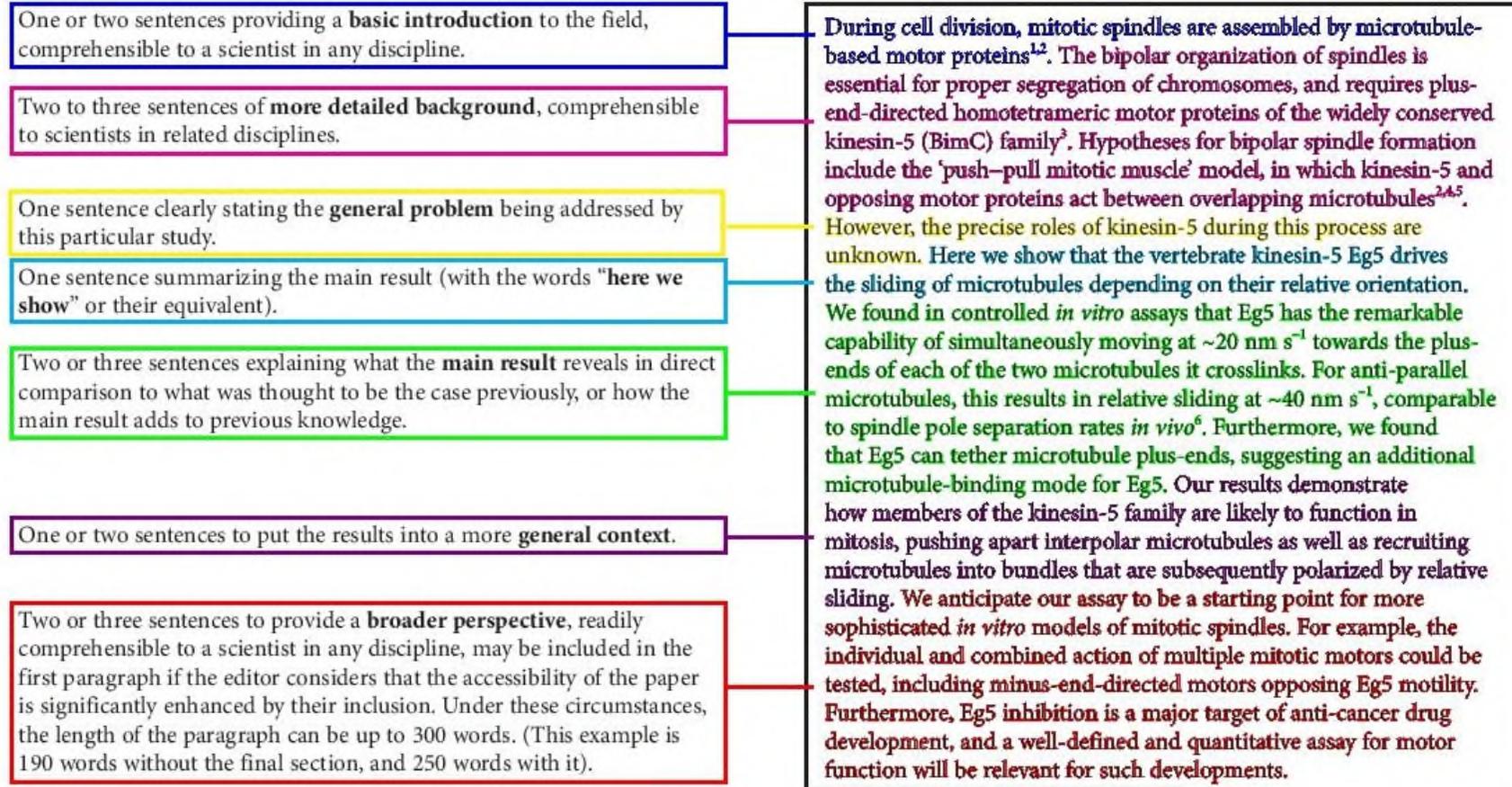
- You are competing for readers' time, so capture their attention from the outset. The best news items always start with the news
- Titles: Avoid open-ended titles and state the main finding of the work
- Abstract: Don't just summarize your findings – place them in context and mention the implications. A casual reader will be wondering whether it is worth their while reading on, so give them the information that they need to make an informed decision
- Avoid exaggeration – remember your core readers! (*i.e.* fellow academics)
- Be mindful of terminology, acronyms and paradigm-shifts

The *Nature*-style summary paragraph:

- http://www.nature.com/nature/authors/gta/2c_Summary_para.pdf

How to construct a *Nature*-style summary paragraph

Annotated example taken from *Nature* 435, 114–118 (5 May 2005).



Be mindful of your readers' time #2

Organise your thoughts

- Strip down to the elements essential to conveying the results – you are not writing a novel
- Bullet-point your message and arguments, and build the paper around that
- Short sentences!
- Do not pad the main paper out with superfluous information...
- ...but don't leave out anything important or gloss over problematic issues

Signposting as you go

- Title your figures and tables!
- Guide the reader by starting each section with a brief statement of what is to follow (*e.g.* “We will now calculate the conditions under which XX leads to YY”)
- A time-pressured reader should be able to quickly navigate through the paper, section-by-section, to follow the gist (if not the detail) of the argument

Think of the users

A paper is not simply the announcement of your own research achievements – it should be much more than something to be read once and filed away

A paper is very rarely the final word on the matter – it is a stepping stone on the way to future scientific achievements

A GREAT paper offers no barriers or obstruction to others building on the work - indeed, it should be a resource that actively facilitates replication and extension



Laying foundations for future work

Removing barriers

- **Science is messy:** By all means be selective for the purposes of clarity, but be specific about any such selection – if an experiment is tricky to realise and/or has a high failure rate, this is valuable information for others attempting to build on the work
- **Don't hide problems:** do not leave out problematic information that appears to detract from the message of the paper – it should be part of that message
- **Clearly distinguish between information that is central to the paper's claims, secondary to the claims (*i.e.* required only by fellow practitioners), and provided mainly for completion**
- **Archive the full information behind a paper – and if the journal platform permits, include the background data for any figures/tables displayed in the paper itself**
- **Be alert to changing community standards – and champion those standards!**



Know your audience



Hold their attention

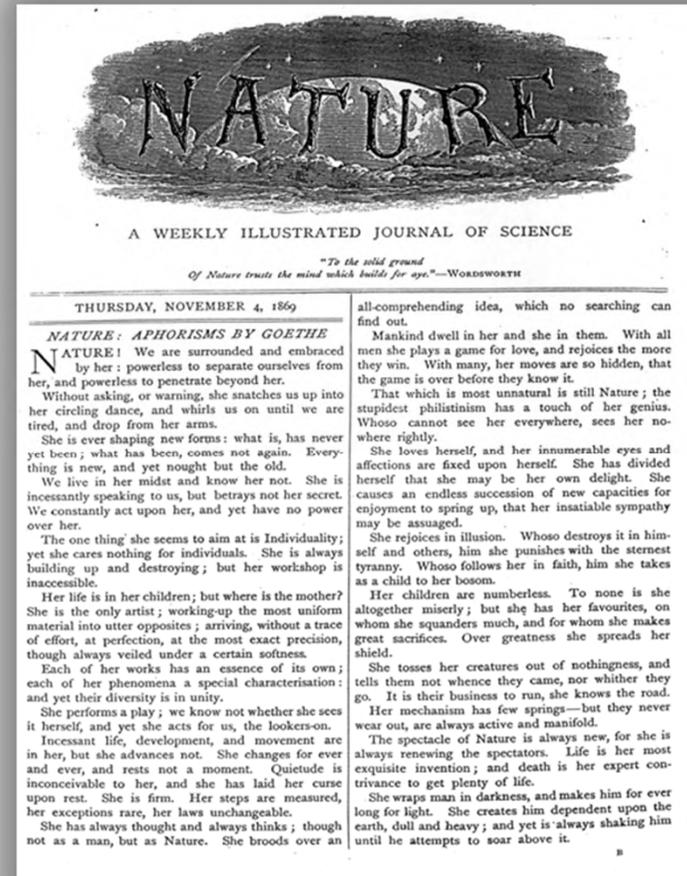


Lay foundations

Nature was launched in 1869...

Nature's Original Mission:

FIRST, to place before the general public the grand results of Scientific Work and Scientific Discovery; and to urge the claims of Science to a more general recognition in Education and in Daily Life; And, SECONDLY, to aid Scientific men themselves, by giving early information of all advances made in any branch of Natural knowledge throughout the world, and by affording them an opportunity of discussing the various Scientific questions which arise from time to time.



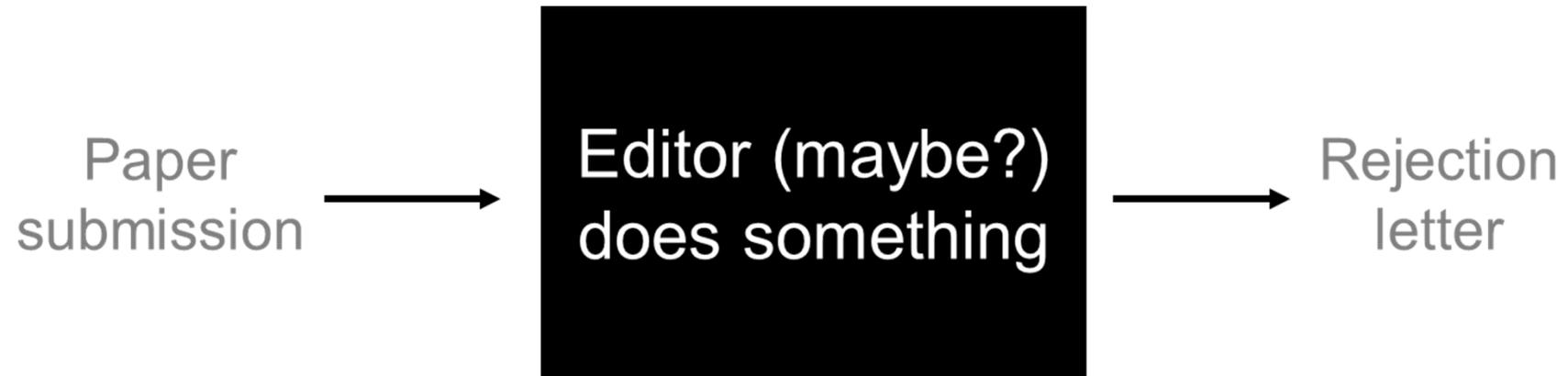
...and a lot has changed since then

Nature's Revised Mission (2000):

First, to serve scientists through prompt publication of significant advances in any branch of science, and to provide a forum for the reporting and discussion of news and issues concerning science. Second, to ensure that the results of science are rapidly disseminated to the public throughout the world, in a fashion that conveys their significance for knowledge, culture and daily life.



The Editorial Process?



Editorial Selection Criteria

Editors are trying to select those papers that, within their respective fields, are likely to have the greatest impact going forward. Key selection criteria are:

- Significant step towards a key disciplinary goal?
- Provides new and important directions for research?
- Clear impact in the field... and beyond?
- Addressing a question with broad societal relevance?
- Novelty/elegance; the 'cleverness' factor?

The judgement about which papers are reporting results that are in principle suitable for publication in *Nature* is made by *Nature's* editors, not its referees.

Only ~20% of submitted papers are sent out for peer review

Only ~7-8% of submitted papers make it through to publication



Thank you

Feedback & questions always welcome

k.ziemelis@nature.com