Zen and the Art of Academic Maintenance

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Imperial College

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An Inquiry into Values

“this book will change the way you think and feel about your life”
Why do people become researchers?

To earn a living
To be remembered
To understand the world
To change the world

Easier to achieve these if publishing is open
What does the world expect of them? (Academic world vs the ‘real’ world)

Have those expectations changed?

“Technology manufactures not gadgets, but social change...”
The digital world and the myth of measurement
Measurement has its uses. In sports...

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...and in business...


...but where are the limits?

“How do I love thee? Let me count the ways.”

Sonnet 43, Elizabeth Barrett Browning

Marry

1. Children — (if it Please God)
2. Object to be beloved & played with. — better than a dog anyhow.

Not Marry

1. Conversation of clever men at clubs
2. Not forced to visit relatives, & to bend in every trifle.
3. To have the expense & anxiety of children — perhaps quarrelling
4. Less money for books &c

Charles Darwin
...but where are the limits?

The *Times Higher Education* World University Rankings

**World University Rankings 2013-2014**

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<th>Rank</th>
<th>University Name</th>
<th>Country</th>
<th>Score</th>
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Focusing researcher assessment on publishing is problematic

http://dx.doi.org/10.1016/j.cub.2007.06.014

Impact factor
Impact factor

http://occamstypewriter.org/scurry/2012/08/13/sick-of-impact-factors/

http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1001747

Impact factor
Retraction Index

http://iai.asm.org/content/79/10/3855.full
The Metric Tide (2015): Main conclusions

- **Responsible metrics**
- **Mind your language:** *indicators*, not metrics
- **Metrics inform but do not replace judgement**
- **Institutions need to be transparent about use**
  - Clear statement of principles for assessment
  - Do not delegate measures of excellence to league tables or journals
  - Dialogue with staff
- **Data need to be transparent (challenge to providers)**
- **Builds on DORA/Leiden Manifesto & other initiatives**

[Links to the report and DORA/Leiden Manifesto]
Can we swim against the metric tide?

“In the end, people don’t view their life as merely the average of all its moments – which, after all, is mostly nothing much plus some sleep.

Measurements of people’s minute-by-minute levels of pleasure and pain miss this fundamental aspect of human existence... *We have purposes larger than ourselves.*”

On your deathbed - will your bibliography or h-index be uppermost in your mind?
Can we swim against the metric tide?

“Nothing in life is as important as you think it is when you are thinking about it.”

Halo effects
Anchoring effects
Hindsight bias
Loss aversion – the sunk cost fallacy
The fallacy of What You See Is All There Is
Can we swim against the metric tide?

“As new possibilities of social transformation were opened up... people asked themselves not simply ‘What moral claims are rational given the social structure?’, but also... What kind of society... will best allow human beings to flourish?”

Paraphrasing Viktor Frankl

“Humans find themselves only through creating meaning in the world... They do so by acting upon the world.”

“Don’t aim at success—the more you aim at it and make it a target, the more you are going to miss it. For success, like happiness, cannot be pursued; it must ensue, and it only does so as the unintended side-effect of one’s dedication to a cause greater than oneself...”

https://www.ted.com/talks/viktor_frankl_youth_in_search_of_meaning
Does the mechanisation of assessment turn us into machines?

“The nature of academia is that career advancement is achieved by attending conferences and writing papers for other academics, creating a self-referential bubble where our critical knowledge gets trapped within the university. The separation of thought from action, of university from the social world, is a key way that inequalities are maintained.”

https://www.theguardian.com/commentisfree/2016/oct/24/universities-slave-plantations-racist
Have we lost sight of the things that matter?

“I’ve seen things you people wouldn’t believe.”
The killer question: incentives

Can the benefits (of OA) to researchers be aligned with the benefits to society?

Is that desirable?

If so, how do we go about it?
Can the **openness** of our scientific heritage help us?

Maths, objective observation and controlled experiments paved this path of reason across the western world. Scientists became citizens of their self-proclaimed ‘**republic of letters**’, an intellectual community that transcended national boundaries, religion and language. As their letters zigzagged across Europe and the Atlantic, scientific discoveries and new ideas spread. This ‘republic of letters’ was a country without borders, ruled by reason and not by monarchs.

Is our amateur (and open) ethos still one of the norms of the academy?
Declarations are not enough

We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable rights, that among these are life, liberty and the pursuit of happiness.

Hancock et al. (1776)

“The principle that the results of research that has been publicly funded should be freely accessible in the public domain is a compelling one, and fundamentally unanswerable.”

Dame Janet Finch (2012)

“All scientific papers should be freely available by 2020...”

Commissioner Carlos Moedas (2016)
Policies can help, but need careful handling & communication...

From April 2016: To be eligible for submission to the post-2014 REF, authors’ outputs must have been deposited in an institutional or subject repository.”
Why was anaesthesia adopted more rapidly than antisepsis?

“First, one combatted a visible and immediate problem (pain); the other combatted an invisible problem (germs) whose effects wouldn’t be manifest until well after the operation.

“Second, although both made life better for patients, only one made life better for doctors.”

“People talking to people is still how the world’s standards change.”
Some of the work is technical...

Can openness help to change behaviour?

A simple proposal for the publication of journal citation distributions

by Vincent Lariviere, Veronique Kiermer, Catriona J MacCallum, Marcia McNutt, Mark Patterson, Bernd Pulverer, Sowmya Swaminathan, Stuart Taylor, Stephen Curry
doi: http://dx.doi.org/10.1073/pnas.1522602112
This article is a preprint and has not been peer-reviewed [what does this mean?]

Abstract

Although the Journal Impact Factor (JIF) is widely acknowledged to be a poor indicator of the quality of individual papers, it is used routinely to evaluate research and researchers. Here, we present a simple method for generating the citation distributions that underlie JIFs. Application of this straightforward protocol reveals the full extent of the skew of these distributions and the variation in citations received by published papers that is characteristic of all scientific journals. Although there are differences among journals across the spectrum of JIFs, the citation distributions overlap extensively, demonstrating that the citation performance of individual papers cannot be inferred from the JIF. We propose that this methodology be adopted by all journals as a move to greater transparency, one that should help to refocus attention on individual pieces of work and counter the inappropriate usage of JIFs during the process of research assessment.
Brave souls in the next generation can help...

Open Pledge

Version presented at OpenCon 2015:

My pledge to be open:

- I will not edit, review, or work for closed access journals.
- I will blog my work and post preprints, when possible.
- I will publish only in open access journals.
- I will not publish in Cell, Nature, or Science.
- I will pull my name off a paper if coauthors refuse to be open.
- I will share my code, when possible.
- I will share my raw and processed data, when possible.
- I will practice open notebook science, when possible.
- I will ask my professional society to support open access.
- I will speak out about my choices.

https://emckiernan.wordpress.com/pledge/

Alexandra Elbakyan
Leaders and institutions have to do their bit...

**Evaluating how we evaluate**

Ronald D. Vale
Department of Cellular and Molecular Pharmacology and the Howard Hughes Medical Institute, University of California, San Francisco, San Francisco, CA 94158

**ABSTRACT** Evaluation of scientific work underlies the process of career advancement in academic science, with publications being a fundamental metric. Many aspects of the evaluation


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**Researcher assessment at UMC Utrecht**

1. Research, publications, grants
2. Managerial responsibilities & academic duties
3. Mentoring & teaching
4. Clinical work (if applicable)
5. Entrepreneurship & community outreach

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Fewer numbers, better science

Scientific quality is hard to define, and numbers are easy to look at. But bibliometrics are warping science — encouraging quantity over quality. Leaders at two research institutions describe how they do things differently.
Feedback and rewards can help

Don’t forget the little steps
We need to talk about open access as a good in itself

Preprints: faster, better...
Worldwide access
Largest possible audience (sharing & scrutiny)
Focus on the content, not the container
Open peer review

Peer review, preprints and the speed of science

Peer review is often claimed to be the guarantor of the trustworthiness of scientific papers, but it is a troubled process. Preprints offer a way out.

A few weeks ago my collaborators and I submitted our latest paper to a scientific journal. We have been investigating how noroviruses subvert the molecular machinery of infected cells and have some interesting results. If it passes peer review, our paper could be published in three or four months’ time. If it’s rejected, we may have to re-work the manuscript before trying our luck with another journal. That will delay publication even further— it’s not unheard of for papers to take a year or more to get out of the lab and into the world, even in the digital age.
We need to talk about open access as a good in itself

Data sharing (re-use & scrutiny benefits)
Better for changing the world

In response to the rapid spread of Zika virus across Central and South America, now declared to be an international public health emergency by the World Health Organisation, a consortium of research funders, institutions and publishers has committed to sharing data and results relevant to the crisis “as rapidly and openly as possible.”

Zika virus initiative reveals deeper malady in scientific publishing

Stephen Curry

Moves to speed up the release of Zika virus research in response to the public health crisis highlight a systemic failure in scientific publishing. Help could be at hand at the ASAPbio meeting today in the USA
We need to talk about open access as a good in itself

Scientific communication is broken. Scientific literature is growing at a rate of more than 2 new articles every single minute. It is impossible for scientists to consume and understand the rapidly expanding ocean of biomedical literature. You can help biomedical researchers find the information they need to discover cures faster.

YOU can fix it and help find cures.

Citizen science teaches researchers about:
new (non-traditional) audiences & scientists

Communication + Participation = Public Trust
We have to go public. We have to be open.

“People in this country have had enough of experts.”
Michael Gove, MP

Personally, never thought of academics as 'experts'. No experience of the real world.

Glyn Davies
@gjmdaviesmp
We have to go public. We have to be open.

“Trump’s victory appears to be a defeat for almost everything that universities hold dear: their respect for truth and evidence, their belief in the value of rational debate, their commitment to the transformative powers of knowledge and understanding, their valuing of individuals....

...we should be yet more articulate about why universities, and the Enlightenment values they embody, are so important. In a world of bewildering and threatening change, we have to do more to show how, and why, universities are one of society’s great achievements and best hopes.”

Chris Husbands
Vice-Chancellor, Sheffield-Hallam University
We have to go public. We have to be open.

“too often [public engagement initiatives] fail to build meaningful relationships between science and the public, preferring instead to act as fluffy PR agents for the scientific establishment. We badly need more projects [...] that shares the benefits of expertise and lets people feel part of driving science and engineering.”

Alice Bell
“People talking to people is still how the world’s standards change.”

OA is not the answer to everything but is an opportunity to show:

- that openness is integral to the noble calling to be an academic

- that open science can be better science
  - faster
  - more transparent
  - more rigorous
  - more widely read and used

- that the academy is relevant to people’s lives

Keep the faith. Keep talking.
Being open will change the way you think and feel about your life in research.
Tusen takk!