

100 Questions that You Should be Answering about Science and Science Publishing

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ABSTRACT

I am a scientist and it is highly likely that we share a few things in common. It is possible that you are reading this paper because either you are: a) also a scientist; b) a competing publisher; c) an unrelated citizen who has been accidentally linked to this paper on your web search. Whatever the reason, the issues facing plant science affect scientists and society overall since we are all linked in this intricate web. Moreover, these issues affect the broader society we live in by virtue of the fact that almost all things, man-made and natural, that surround us, are based on or are linked to science. The world is in a socio-economic and political crisis where freedoms, religion, values, wealth, power and so many social issues are being radically challenged. Those who do not feel the crisis live in a bubble and those who do not understand it are ignorant and oblivious to the ways in which it does and will continue to affect their every day lives to an even greater extent as we move forwards in the next few years. Scientists, as a sub-set of society, are equally affected by and are in no way immune to these crises. Cuts in budgets, an open access system fraught with problems, and science publishing which has become the tug-of-war of publishing powers, science has now become the last frontier for the power struggle on this planet. Scientists are at a cross-road in their decisions that will and can impact science and the society that surrounds us. This paper lists 100 questions that I believe that each and every one of us should be asking.

Keywords: hypothesis, open access, publishing fees

100 QUESTIONS = 100 POTENTIAL REASONS FOR CONCERN

If the answer to any of these questions – even only one – is YES, then you should read the contents of the special issue in detail. If the answer to 10-20% of questions is YES, then you should be concerned and should heed to the warnings signs between lines within each manuscript of this special issue. And if your answer to more than 50% of this list is YES, then it is time for you to take action within your research niche (laboratory, department, university) and further abroad. In all cases, this is the time to think over what was the original aim of science and publication of new results, i.e. why social development brought science into existence, and if you feel that science and science publishing have now strayed far from this original aim, then it is high time for you to take action. Finally, these question are strictly related to science.

- 1) Do you feel that the world that surrounds you is unfair in the sense that those who work hard are not fairly rewarded while those who do not work hard, who deceive, or who play the system to their advantage get praised and excessively rewarded?
- 2) Do you believe that your destiny (within science or even within society) has been or is being tampered with?
- 3) Do you believe that science is not what you thought it was or what you thought it is meant to be?
- 4) Do you believe that science is being manipulated by forces beyond your control?
- 5) Do you see injustices in your work place (laboratory or department)?
- 6) Do you see corruption, fraud or abuses of power in your laboratory, university, or even ministry of education?
- 7) Do you see the power of corporations dictating the course of science?
- 8) Do you see governments dictating the course of science?
- 9) Do you work like a horse but feel treated like a dog?
- 10) Are you a young undergraduate student who holds high hopes for the future of your career in science?
- 11) Are you an MSc student who is dedicated to the theory within books, but eager to start conducting experiments and put that theory to practice?
- 12) Are you a PhD student who feels like the physical and mental struggle has been so hard for so many years, but that the intellectual rewards have been so fulfilling?
- 13) Are you a recently graduated PhD student who feels disappointed in that diploma you hold in your hand, feel defrauded by a system that has not delivered on its promises, or has become disillusioned by the reality that has awaited you on the other side of graduation?
- 14) Are you a PhD graduate who is unemployed?
- 15) Do you hold a science PhD but are doing some menial job like selling ice-creams, packing boxes or washing toilets?
- 16) Are you a post-doc student drifting from country to country, sometimes with your whole family, seeking for ways to survive in spurts of 1-, 2- or 3-year contracts?
- 17) Are you a 30-40 year old scientist, mid-way through your career (and life), but not sure what or for whom you are fighting?
- 18) Do you feel that you want to climb the ladder of success but that the system in your department or university does not permit it?
- 19) Are you in a subordinate position within a faculty, such as an associate professor, who feels that you deserve much more, who feels that those professors who are above you do not deserve to be in the position they are in, or have the salary that they do, or do you disagree with the ranking system in that department?
- 20) Do you feel (or have proof) that money is being abused or laundered in any way by higher ranking staff or officials in your department or university?

- 21) Do you feel that people who have been awarded a certain position or funding have achieved it unfairly or without merit?
- 22) Do you feel that remuneration in your workplace is biased, i.e., do you see staff in your workplace who do no or minimum work, but who still get a salary that is larger than yours?
- 23) Are you tired of always having to answer to someone else and to always ask for permission to exercise your own actions and freedom of thought?
- 24) Are you a tenured full professor who is trying to ride through the system and seek a peaceful path to retirement?
- 25) Are you running a business and also holding a faculty position at the same time for ensuring your livelihood and/or that of your family?
- 26) Do you believe that all research results should be patented?
- 27) Are you always anxiously waiting for that tea or lunch break?
- 28) Are you always feeling tired in the morning and have to drag yourself out of bed to get to the lab?
- 29) Are you happy with your 9-5 position?
- 30) Are you one of those who works all day and all night, weekends and holidays even, but never seems to find enough time to finish all the experiments and papers that you have to do in your head?
- 31) Do you see racial, sexual, professional or any other form of personal or professional profiling or discrimination in your work-place, but decide to keep silent, out of fear, or because you have been forced to stay silent (intimidated or otherwise)?
- 32) Are you in science because the position is secure and the contract is long?
- 33) Are you tired of always seeing cut-backs in research funding and benefits as a result of the economic recession?
- 34) Has your career been compromised because of the economic down-turn or due to social or political upheaval?
- 35) Are you using research funding for travel?
- 36) Do you travel to international symposia and congresses and deliver only one oral presentation or put up a single poster?
- 37) Do you use any research funds inappropriately, including for fees related to transport, food, or leisure?
- 38) Do you only publish one paper a year?
- 39) Does your employer such as a university impose a minimum number of manuscripts that need to be published for you to retain your position?
- 40) Do you get direct financial rewards (e.g., salary, research grants) or a better position based on the Impact Factor of your published papers?
- 41) Do you support the Impact Factor but have never questioned who the parent company, Thomson Reuters, is?
- 42) Do you publish with a publisher because it is famous?
- 43) Do you publish papers in journals based exclusively on their Impact Factor?
- 44) Have you ever published your paper with a publisher without checking the quality of papers published in it, only because the publisher promised rapid publication?
- 45) Have you ever published your paper with a publisher only because you were under this imposed pressure by your workplace officials?
- 46) Have you ever run a background check on a publisher, or questioned its structure or management?
- 47) Do you automatically accept and respect what an editor or publisher tells you?
- 48) Are you happy with your profile having been created by publishers (or other web-sites) without your permission or even without asking you or informing you of its existence?
- 49) Do you publish in a journal because your colleague publishes there too or because your faculty or university requested you to publish there?
- 50) Are you a scientist who has joined an editor board because you want your CV to look good and padded?
- 51) Do you send out your CV *en masse* to many journals with the hope of getting onto multiple editor boards?
- 52) Are you a “peer” reviewer who rushes through the review or who makes a decision based only on a quick skim or by just reading the abstract?
- 53) Are you someone who fabricates data?
- 54) Are you someone who copies text *verbatim* from other sources because you do not know how to express an idea in your own words?
- 55) Do you copy text because it is easy to do so?
- 56) Do you feel that plagiarism or self-plagiarism is legitimate in select situations?
- 57) Do you pay fees for checking against plagiarism?
- 58) Are you a non-native English speaker who is tired of always being second tier in a world where English was dictated (by someone) as being the world’s choice language for science?
- 59) Do you believe that multiple languages are essential for science publishing?
- 60) Do you pay for publishing fees from your own pocket and feel that you could become bankrupt because some of them are so high?
- 61) Does your laboratory, research grant, or university pay your publishing fees?
- 62) Do you feel criminalized (or accused of being dishonest or unethical) for doing something which you truly perceive to be honest or ethical?
- 63) Do you feel that ethics and values, and their implementation, have become monetized?
- 64) Are you an editor who works for a commercial publisher and gets a salary for doing this work?
- 65) Are you an editor who is bound to silence by a contract?
- 66) Are you an editor who wants to be more flexible, or fair, but is bound by contractual rules of engagement imposed by a publisher?
- 67) Are you an editor of a board but do nothing?
- 68) Are you an editor but your sole function is to send out invitation e-mails?
- 69) Are you an editor who is defending the interests of a publisher against the interests of an author?
- 70) Are you an editor-in-chief who believes that your rejection decision is final?
- 71) Are you an author who feels the right to challenge a decision (by an editor, editor-in-chief or journal/publisher)?
- 72) Are you an author who has been handed an unfair or incorrect decision?
- 73) Are you an author who has challenged a decision, or a situation that you have perceived to be unfair, but whose challenge has been denied by the editor or publisher?
- 74) Are you an author who feels that you should never pay for publishing your work?
- 75) Are you a hard-working and productive reviewer and feel that you should be an editor, but have never been provided a fair opportunity to become one, even after applying for such a position?
- 76) Are you a hard-working and productive reviewer and feel that you should be remunerated for your efforts, especially when the publisher is reaping profits off of your free work?
- 77) Are you a person who feels that it is outrageous that your intellectual work and effort be used by publishers to make profits?
- 78) Are you happy to receive only a single PDF file (published in your journal of choice) in return for spending weeks or months in the lab or field to generate one good data set?
- 79) Do you feel that you are entitled to royalties for your intellectual contribution and based on profits made by a commercial publisher?
- 80) Do you truly understand what is a copyright?

- 81) Do you disagree with transferring your intellectual rights to a publisher in the form of a copyright?
- 82) Do you feel outraged that you are forced to transfer copyright before submission or before your manuscript is accepted?
- 83) Do you feel you like the concept of open access, but do not truly understand the concept of retaining your publishing rights?
- 84) Do you feel that the journal content you are reading (i.e., not your own) should never have been published because it contains serious flaws?
- 85) Have you ever reported serious flaws in a manuscript to an editor, journal or publisher?
- 86) Has a publisher to whom you have reported serious flaws ignored your requests?
- 87) Have you been tricked by a publisher into believing that it is something it is not (i.e., do you feel that the image and/or services “sold” to you as an author were originally misleading)?
- 88) Do you receive publishing-related spam which is always addressed to “Dear colleague” but never to you?
- 89) Do you see predatory publishing but feel no power to deal with it?
- 90) Do you spam?
- 91) Do you recommend a journal or book to a library because the publisher requested you to?
- 92) Are you a librarian who is not a topical specialist but are convinced by publisher sales-persons who convince you to buy their services, products, books or journals?
- 93) Are you a librarian who receives kickbacks, gifts, or sponsorship from the publishing industry, even if small?
- 94) Do you spend your day on the internet, always accessing your e-mails on multiple occasions each day?
- 95) Do you fear that the internet could one day disappear, reach a limit, or stop functioning?
- 96) Have you encountered problems with a publisher’s web-site access, online submission systems or overall editorial process?
- 97) Are you afraid of Big Brother and the intrusion of your privacy and rights, online and otherwise?
- 98) Do you feel that you are not free to speak your mind, that you are criticized for doing so, or that your tone of voice is criticized but that the underlying issues are ultimately ignored?
- 99) Should an ethical body receive money for preaching ethics?
- 100) Do you feel free to take charge of your own destiny?

You may be asking yourself, what is the relevance of some or most of these questions? Indeed, I am convinced that, depending on the stage of career development a scientist is in, that the number of questions to which the answer will be YES, will differ. Without a doubt that an author, a laboratory technician, a full professor, an editor, a Thai vs a US scientist, a peer reviewer, a policy maker, a librarian, an open access publisher, a traditional print medium publisher, or a politician would view these questions in a completely different way, and would interpret several of them in potentially radically different ways. This is perfectly understandable. Ultimately, it is the interaction of all of these parties and many more, that affects science and thus the science we conduct is not isolated, and is extremely strongly influenced by many factors, many of which are encompassed within these questions. This special issue is only the launching pad for what promises to be a revealing future of case studies that will begin to explore real situations in the world of science publishing, related primarily to plant science, that should serve a point of critique and education aimed at improving a system (science and science publishing) that has, in my opinion, started to go seriously off-track. There is the perception that the balance within science has been distorted (**Fig. 1**) and that the boundaries that should separate the powers within society have now started to overlap

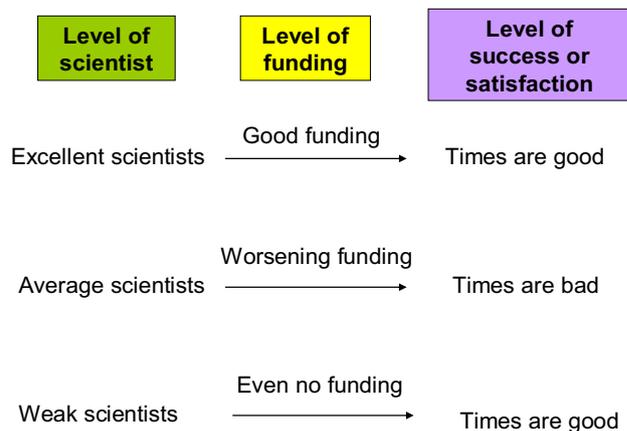


Fig. 1 The basal presumption that the quality of a scientist (as assessed by peers) will directly affect the eventual outcome of happiness or satisfaction is, at present, false. That new assumption is based on the fact that a scientist would answer yes to the majority of the 100 questions above.

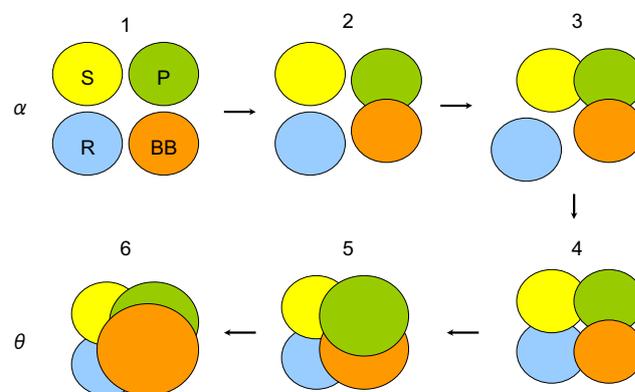


Fig. 2 A sector of society can be represented by a colour. The perception and/or understanding that science (S), politics (P), religion (R) and business and banking (BB) should be distinctly separated (1) has now evolved into this hazy overlapping of frontiers (4, 5), with an ever-increasing disproportionate displacement of one area or aspect of society being overwhelmed by another (6). In the ideal situation, free of conflicts, and within pure science, a respondent would not answer YES to most questions above. However, as these four societal aspects become intermingled, the number of questions to which a respondent would answer YES will undoubtedly increase. An overlap of one colour of another reflects a dominance of that colour over the overlapped colour. Of course, this is just a theory, but sufficient anecdotal evidence suggests that this is the trend taking place.

and become blurred (**Fig. 2**). In **Fig. 1**, for example, those researchers who use hi-tech equipment, for example, are almost not hindered as to the level of journal to which they can publish in, therefore, they are not concerned with or affected by predatory journals, have almost unlimited funding which can then be fed to purchase better equipment and the cycle of success repeats itself indefinitely, irrespective of the global economic downturn. The “middle class” of scientists, who work hard, long hours, earn moderate salaries and have relatively limited research funding, are finding science publishing to be most difficult. On the top end of the scale, they struggle to get their work published in top level journals because of the excessively high level of peer review, while at the lower end of the publishing spectrum, they are not interested in publish “instantly” journals. The number of journals that account for a middle level (academically, peer review, etc.) is decreasing. Scientists who are from developing countries or even those from developed countries with limited or no research funds are the ones now seeing the greatest boom. Incidentally, this group also includes scientists who conduct experiments that are

scientifically fundamentally flawed (poor experimental design, insufficient repetitions, etc.) or even scientists who are unethical (false data sets, plagiarized text, etc.). The publishing bubble for them has begun in which the chances of publishing in high level journals is impossible, but the exponential increase in predatory publishers, particularly open access publishers, gives them a wealth of choices in which to allocate their data sets. Those from developing countries are unfairly exempt from paying publishing fees. Consequently the three levels of scientists are out of sync with what is available in terms of journal quality.

In 2011, I started to suggest that a new movement was required in science to beat corruption and fraud. That movement, termed “Liberate Science” has its primary objectives, to raise awareness in science, among scientists, about the issues that scientists should be reflecting on. This movement should go one step further: taking pro-active steps to call out those who are perpetrating fraud, those who are supporting fraudulent organizations, and those who are sitting silent. Broadly, I have suggested that those who feel indignant about the current situation in science and

science publishing should be termed the science *indignados*, and that we have, each and every scientist, the responsibility towards science, to defend its original values that we learnt to believe constituted the basal pillar of science from an early age. I am of the belief that by reading these 100 questions, even though slightly time consuming, that we may activate some inner conscience about what we have become or how we have failed science. By creating consciousness, we can initiate change. With change, radical or gentle, there may still be the possibility to right an increasing number of wrongs.

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