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GOOD FOR CAREER-BAD FOR SCIENCE: ADVICE, HOW TO OPTIMIZE YOUR CAREER. OBSERVATIONS AND EXPERIENCES IN SCIENCE FACTORY BY A LAST CENTURY SCIENTIST

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INTRODUCTION

The number of scientists and correspondingly the flood of publications explode. **"***Between 2008 and 2014, the number of scientific articles catalogued in the Science Citation Index of Thomson Reuters' Web of Science grew by 23%, from 1.029,471 to 1.270,425.------There were 7.8 million full-time equivalent researchers in 2013, representing growth of 21% since 2007"* (UNESCO science report: towards2030,2015,http://uis.unesco.org/sites/default/files/documents/unesco-science-report-towards-2030-ex-sum-en.pdf). This has consequences to the rules of science production in the science factories. Publications are products that need marketing and the cash paid is a long list of publications and citations in journals of high impact factors that foster the career of authors.

I have observed this during the last ten years and found that the following rules should be observed to support a successful career. All of the rules that I give below rest on true examples. The reader may judge whether these rules support the quality of science. My personal opinion is, they do not. Discussion in the community is urgently needed, but it will need display of courage.

RULES OF MARKETING

1. Do not engage in innovative topics that have a high risk of failing. It is much more favorable to conduct main stream research topics as these may result in more publications and more citations that boost your recognition. Highly innovative and new research is not so much connected in the community and may not be quickly perceived in the noise of main stream publications.
2. Give many citations, even if they are not necessary for understanding your work. Copy and paste is so easy nowadays. This gives the impression that you know the complete literature in the field. Furthermore, citations of the work of colleagues may be favorable. You have an idea who your potential reviewers are. Cite if possible their papers. This could improve chances for positive reaction.
3. If you are not so sure about your arguments, but if you are convinced that the result is true you can give lengthy explanations in a complicated language that is not easy to understand. This renders the paper longer and makes reviewers tired to ask critical questions. Furthermore, if you come to questionable conclu-

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sions just go ahead. If the reviewer criticizes, you can change it. If not, you save a lot of work.
4. In the introduction put your work if possible somehow in context to important issues such as climate change to stress the importance of your work.
5. If possible try to slice your work into at least two publications. This to your benefit adds to your publication list and to the number of citations.
6. Try to discuss your work with colleagues in conferences and wherever possible. This may give you opportunity to invite them as coauthors, even if their contribution is minor. The chances to be invited mutually also as coauthor in their papers increases this way, a win-win deal for both. Consider, the chance to be cited increases with the number of authors. Therefore, multi-author papers will increase the h-index of all authors.
7. Avoid discussions with people who seriously criticize your results with good arguments. Try to isolate them in the community and if this does not work do not respond. Do not cite critical papers of them.
8. If during your work you have a new idea that might shed doubt on your results you have to decide whether this is delaying your present project. You have to keep in mind that further funding requires publications and the new idea may be performed later if at all.
9. If you see similar work being published, do not worry. Even if your paper now does not contain anything new you confirm these results. Your publication may help to your career even if it does not contribute to the progress of scientific knowledge. But publication is expected by the foundation or by your professor or both. It is also vital to obtain new funding in the future.
10. If a new unexpected publication sheds doubt on your results ignore it if possible. Citing it may cause problems with the reviewers.
11. If you have measured new data that you do not really understand, do not worry. Publish and find some story that somehow looks important. You have a good chance that the paper will be accepted, because your advisor and somebody else will be co-authors.
12. Take care to update your list of publications in your homepage. Add papers under review, conference contributions, posters, PowerPoint presentations, etc. Upload all your output, posters, talks, and unreviewed manuscripts to scientific archives, e.g., ResearchGate.
13. Look whether you can announce your progress in a press statement. This is to the benefit of the institution where you work and to yours as well.
14. If a paper is declined and the reviewer provides good reasons why, try another journal and neglect his critics. You have a chance to succeed.
15. A final advice: Do not become a skeptical scientist, do not allow doubts. Although skeptical thinking is the backbone of good science it may spoil your career. Better follow the main-stream and contribute work that underlines what is already known. This will allow fast publications and those whose findings you support will be grateful by citing you.

CONCLUSION

If you want to boost your career follow these rules. But if science matters to you, then regard Albert Einstein*:*

"Two things are needed in our work. Tireless endurance, patience, and the willingness to throw away something into which one has invested much time and work."

This will contribute to the progress of science but may not promote your career. Therefore you have to find a responsible compromise to save both, your career and advance of science. Consider, your work can cause consequences in science, but also in the society. You are responsible for its truth.

A FINAL ACTUAL STATEMENT

Since the first appearance of the virus Covid 19 in December 2019 about 29,000 scientific publications have been reported by WHO (https://search.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/). About 1,400 have been published in high ranking journals such as The BMJ, Lancet, Science, Nature, and Infection Control and Hospital Epidemiology. Many of these papers have multi-authorship. I wonder how many of these papers have been produced regarding rules of marketing. Gareth Iacobucci in The BMJ, a leading medi-

cal journal, recently has expressed doubts in the quality of several publications (https://www.bmj.com/content/bmj/369/bmj.m2224.full.pdf). He states:*"Doubts have emerged about the validity of widely cited research papers that have informed global health policy during the covid-19 pandemic."*

Statistics expert and professor at the Medical University of Freiburg, Germany Gerd Antes criticizes the pace at which studies on Covid-19 are carried out and published. (https://www.spiegel.de/wissenschaft/medizin/corona-forschung-drei-gute-studien-waeren-besser-als-100-schlechte-a-00000000-0002-0001-0000-000171426732)

Doubts on the quality of research advising policy damage trust in science. Our society must rely on the statements of science and therefore needs trust in serious scientific performance. On the other hand the scientific community depends on a society trusting it. This relation must not be destroyed.

For general backgound information visit: https://forbetterscience.com/2020/02/04/predatory-authors-by-wolfgang-dreybrodt/