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ETHICS IN SCIENTIFIC PUBLISHING

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Abstract. We all learn in elementary school not turn in other people's writing as if it were our own (plagiarism), and in high school science labs not to fake our data. But there are many other practices in scientific publishing that are depressingly common and almost as unethical. At about the 20 percent level authors are deliberately hiding recent work – by themselves as well as by others – so as to enhance the apparent novelty of their most recent paper. Some people lie about the dates the data were obtained, to cover up conflicts of interest, or inappropriate use of privileged information. Others will publish the same conference proceeding in multiple volumes, or publish the same result in multiple journals with only trivial additions of data or analysis (self-plagiarism). These shady practices should be roundly condemned and stopped. I will discuss these and other unethical actions I have seen over the years, and steps editors are taking to stop them.

1. Introduction

The starting point for a discussion of ethics within astronomy should be the American Astronomical Society statement of ethics policy[1]. All astronomers should read that and follow the principles therein, which broadly fall into three categories: 1) plagiarism and attribution, 2) conflicts of interest, and 3) civil and professional behaviour. Although the policy document breaks it down a little more finely than that, these three broad categories will serve my purpose, which is to illuminate the policy with examples, and to explain some of the reasons why these policies should be followed.

[1] http://aas.org/ethicsPolicy

Readers should bear in mind that although editors often hear about ethical violations first, we often have little or no legal standing to act because we are not employers/supervisors, unless the violation is directly relevant to the peer review of a particular manuscript. Even referring a case back to an employer for action can involve many consultations with a lawyer, which we will do when necessary.

2. Plagiarism and self-plagiarism

Plagiarism is using other people's text and saying it is your own. I have come across a few instances of that over my years at *Nature*, but despite the ease with which content can be cut and pasted, it is gratifyingly rare. The instances I have seen involved authors who were not native English speakers using text from the introductions of other papers. Plagiarism is a deep ethical violation, but it is easily caught by commercial software used by publishers, and has been rare in astronomy. I hope it stays that way.

Self-plagiarism, on the other hand, while not rampant, is fairly widespread. Authors re-use their own text, seemingly unaware that the material should be in quotes, with the original source identified. The problem in this area is the many shades of grey. For example, is it all right to use text from the justification section of an observing (or grant) proposal in the introduction of a paper? My personal position is that yes, it is fine, because the observing/grant proposal is in the direct path of accomplishing the scientific objectives, and because the full contents of the proposals are in general not publicly available (usually, it is just abstracts that are available). But what about an unrefereed conference proceeding? My strong recommendation is no, because this is publicly available, usually in a volume, and often on `arxiv` as well. I therefore feel that re-using text from such a source is not an acceptable practice. Publishing the same (or almost the same) conference proceeding in multiple places also is unacceptable. Taking text from a conference proceeding that appeared in a peer-reviewed journal is unacceptable. The text should be rewritten so that not a single sentence remains unchanged.

Pasting text from one's own published papers is wrong, and I have contacted editors of other journals when I have come across instances of this. Authors might argue that it is different to copy introductory material than interpretation and conclusions, but in general editors do not see it that way. It is completely unacceptable under all conditions, as it is attempting to gain credit for work that was not done – and that is at the core of why plagiarism is very unethical.

A very troubling practice is to publish a paper and then, a year or so later, add a trivial amount of new data and/or discussion, and present it

as a 'new' result, in general without reference to the earlier paper. This is deeply unethical. It is also easily caught by editors.

3. Proper attribution of credit

Science builds upon the work of others, and the correct attribution of credit for that earlier work is important.

It is common practice in some parts (both geographical and discipline) of our community to grant authorship to any member of a collaboration, even if someone has contributed little or nothing to that specific paper. This is becoming a worry with the increase in the number of large collaborations – sometimes hundreds of people. In particular, this tends to downplay the critical roles played by students and postdocs, who in general do the bulk of the work. *Nature* has had in place a system for about two years requiring authors to specify who did what on any given paper, but we have found ourselves thwarted in the intent by the memoranda of understanding of various collaborations, which prohibit such specificity. There are several concerns. First, it is important that critical individual contributions be highlighted, so that future hiring and prize decisions be based upon a clear and transparent understanding of who did what. The present opacity will inevitably lead to hiring and prize decisions being based on back-room conversations, as in the 'bad old days' of chummy science. It is grossly unfair to students and postdocs. Secondly, if in the future aspects of the data collection and analysis are shown to be suspect or fraudulent, it needs to be clear just who did what, so that the source of the suspicious part of the paper is clear. Authors may be under the impression that bland statements dilute responsibility, but that is not how editors look at the situation. To us, a statement of "every author contributed significantly to this paper" not only is patently false, but invests each and every author with total ownership of the paper. If one aspect of the work is tainted, than all authors are tainted to the maximum extent.

Attribution through accurate referencing also is an important obligation for any author. At something like the 20 percent level, editors are seeing authors deliberately not citing their own previous work, in order to make the new manuscript seem more exciting. There also is a disturbing pattern of failing to cite relevant work by others. This is easily caught through the SAO/NASA Astrophysics Data System (ADS), and in fact editors always check this before sending papers to referees. When relevant work by others is not cited, there is a natural inclination to pick one of the authors of the neglected work as a referee.

4. Conflicts of interest

It is almost always the case that the best judge of a person's work will be a competitor, because the competitor will be aware of the nuances, observational techniques and recent activity in the field. So competitors are not excluded in a blanket way from consideration as referees (of observing or grant proposals, or of papers). But there are circumstances where it is best to recuse one's self from refereeing. If actively working on a competing paper, one should decline to referee a manuscript about the same subject. There are several reasons for this. First of all, if you take a long time refereeing the paper you are open to the charge that you are deliberately delaying publication of the competitor's paper (this usually does not apply to observing and grant proposals, because reports are due on a specified timescale). Secondly, you could be open to the charge of lifting ideas from the competitor's proposal or paper. In both cases, such actions might be entirely innocent, but why leave yourself vulnerable? If you have already submitted a competing paper, then there is less potential for conflict, but the editor should certainly be informed of the situation so that he/she can assess the situation.

An abuse of privileged information – such as using data from a paper you are refereeing to advance your own work, perhaps through a request for director's discretionary time, is a conflict of interest. I have seen authors lie about the dates on which data were collected, to cover up the unauthorized use of privileged information.

If you have a close and ongoing collaboration with someone, it is a conflict of interest to referee a proposal or paper from that person, mainly because of the worry about a lack of objectivity. But here there are many shades of gray. If the collaborator is one of 40+ authors, and you know that he/she had little to do with the paper, then I do not see a conflict of interest. Simply because a person was a former student (or supervisor) does not imply a conflict of interest. But a romantic relationship (past or present), especially a covert one, is a conflict of interest, because of the loss of objectivity. (One of my worst experiences as an editor involved an undeclared and covert relationship between an author and referee that had been ended just before the submission of a paper, where – on paper – the referee was a logical choice.)

Whenever a person has a financial stake in the outcome of a decision, he or she should recuse themselves entirely from the decision-making process. This is a source of great concern to me, because of the way funds for some projects are allocated. Certain agencies have made it a practice to distribute funds in such a way as to essentially guarantee that people have a stake in the continued funding of a project. While providing money for analysis as

part of a grant of observing time seems an elegant way to get the science done, I feel that it inappropriately introduces conflicts of interest. It is one thing to be a 'stakeholder' with an interest in seeing a particular telescope built. It is quite another to see that telescope as a source of future grant money. I do not have an answer for this difficult situation, but I feel that we should be aware of it, and sensitive to the fact that we are almost entirely publicly funded and that considerable trust is placed in us to allocate funds appropriately.

5. Civil and professional behaviour

We were told as children that "you catch more flies with honey than with vinegar", but some people in the field need reminding of that. I feel that the whole field has become markedly less collegial than it was 20 years ago, at least partially because of trends toward larger collaborations and less time at the telescope.

We should always treat others with respect. That does not mean we cannot have disagreements over interpretation and policy, but it does mean that we should listen to what others say, consider the concerns they have, and if it is a matter of fact – apply the scientific method to determine who is correct. The wonderful thing about science is that it is inherently self-correcting, at least over time. Differences over policy can be debated, but it is unhelpful to assume that someone on the other side of a debate does not also have the long-term interests of the field in mind. Pay attention to their point of view.

It is particularly important for more senior members of the community to set a good example, and to train their students and post-docs in appropriate behaviour towards others.

6. Some final thoughts

There are some overall guiding principles behind an ethics policy.

We should not claim credit for work we did not do, and we should always give appropriate credit to the efforts of others.

Outside of the often necessary constraints of anonymous peer review, we should aim to be as transparent as possible about how we do and present our science.

We should not abuse our positions for personal gain.

Finally, if you ever find yourself in a situation where the ethical choice is unclear, ask yourself: If someone else did to me what I am contemplating doing, how would I feel?