Chapter 10
Publish and Perish: A Note on a Collapsing Academic Authorship

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Introduction

For about half a century, the commonplace alliteration 'publish or perish' has been around as a somewhat witty way of capturing the predicament of academic researchers. With time the expression has turned less jocular and all the more sinister, as competition for positions and grants has hardened, in pace with the incessant rise of the flood of scientific and scholarly print.

The flood is readily illustrated by a simple search in the Thomson Reuters database Web of Science. Between the publication years 1990 (100%) and 2000 or 2010, there was a dramatic increase in the numbers of papers retrievable by, say, the following search terms in the appropriate topic or address field (%): 'diabetes or insulin' 328 (year 2000), 694 (year 2010); 'cancer' 470, 1,112; 'oxygen' 457, 678; 'Harvard', 155, 230 and 'Umea', 168, 225. Drowned by the sheer number of potentially relevant papers in any research area, the modern scientist, manager and politician alike are tempted to rely on publication metadata, rather than on a critical assessment of content, for gauging the relevance and quality of research reports. Similarly, in research environments increasingly influenced by the ethos of commercial industry, academic merits tend to depend heavily on quantitative aspects of output, *i.e.* on the sheer number of papers or books to which the researcher's name can be linked in the formal capacity of 'author'.

Traditionally, the writing of a scientific text is an intellectually and morally committing undertaking. It is in the function of author that researchers claim to have something genuinely new to add to the accumulated knowledge and cultural heritage of mankind. By going public in words, one demands recognition for the merits

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of his or her work and simultaneously accepts being the legitimate target for any justified criticism. Hence, the text should be honest in its intentions, truth-seeking and certainly not deliberately misleading.

Uninterpreted expositions of numbers, diagrams, pictures or collections of evidentiary material can rarely, if ever, constitute science. For both scientists and humanists – too often prejudicially seen as people of numbers as distinct from people of letters – adequate linguistic communication of what has cleverly been observed and thought out is an essential facet of the game. Part of the personal satisfaction and pride of successful researchers therefore hinges on their being authors.

Of course, individual writers will always differ in intellectual and moral capabilities. That trivial fact notwithstanding, conscientious authorship is a fundamental institution of scientific culture, in principle a condition for it. However, there are signs to indicate that this view of science is no longer self-evident, a phenomenon at least in part reflecting the deluge of reports and the commercial turn of academic work. In this present chapter, I express concern over the threat to intellectual standards that is represented by a growing acceptance of phenomena such as collective authorship, honorary or gift authorship, ghostwriting and commercially inspired subterfuge and deviousness. For further reviews of problems associated with authorship in modern medicine and clinical psychology, see Reichelt et al. (1998), Madiba and Dhai (2006) and Sismondo (2009).

From Individual Responsibility to Team Writing

A few decades ago, it was common for first-rate scientists to write their own papers, sometimes in company with a close collaborator. As master over his own words and sentences, the lone author can hardly avoid letting his personality be naturally expressed, albeit in a mode disciplined by the stringencies imposed by the scientific nature of the content. For example, when the Nobel Prize laureate to be, Ragnar Granit, in 1948 opened a paper (Granit 1948) by the phrase ‘In this communication I would like to draw attention to some aspects of the micro-electrode work with the retina of the dark adapted decerebrate cat…’, there could be no doubt about his personal involvement and full responsibility for the ideas to follow. Likewise, the introductory sentence ‘Collagen is a very interesting protein’ (Pauling and Corey 1951), by Linus Pauling (at the time a Nobel laureate to be, too) and his almost equally famous collaborator, Robert B. Corey, served no other purpose than exposing the enthusiasm of the writers and establishing their acute presence in the act of communication.

By contrast, modern scientific reports typically exhibit many names positioned as authors but few signs of subjectivity in style. For example, the December 22 or 23, 2011, issues of Nature and Science contained 37 research articles, reports and letters. Their authors ranged 3–124 in number with a median value of 6. Matter-of-factness in literary style may serve the virtue of scientific stringency. Nonetheless, when a real person cannot readily be spotted as the actual writer of a text that is formally

ascribed to half-a-dozen or more 'authors', there is presumably a risk that not all of the formal authors have taken full intellectual and moral responsibility for the text. This is not to say that team writing ought to be seen as a vice *per se*. It would be unfair to suspect a group of collaborating authors of dishonesty just because they are many. On the other hand, it cannot be denied that modern team writing invites certain temptations; it would be hypocritical not to acknowledge that some researchers succumb to them, to the detriment of scientific culture. In the wake of the discovery of a case of scientific fraud, the legitimacy of multiple co-authorship was in fact seriously discussed already in 1988 at a colloquium at the National Institutes of Health, USA (Schechter et al. 1989).

When, as is nowadays usually the case, the authors' names are not listed in alphabetical order, it is generally assumed that the order employed should signify differences in the degree or kind of contribution that each collaborator has given to the common good. However, there is no foolproof rule or convention as to how the ordering should be interpreted. Although it is usually thought that the first and last positions in the list of authors are in some sense more important than the others, the precise sense is rarely obvious and neither is the significance of the order in between. If unclarities of this kind make it troublesome to proportion the merits of good papers, it may be even worse when it comes to the blames for bad ones. It is also often difficult to tell whether the presumed meaning does in fact correspond to reality. The lack of explicit, rigid and generally accepted rules may contribute to making scientists view the institution of authorship as a more flippant matter than the austerely structured content of their papers.

Demonstrating an increase in the number of authors per article in psychological journals nearly three decades ago, Sacco and Milana (1984) concluded that their observations raised important questions regarding possible changes in the process of establishing authorship. Indeed, reflecting on the demise of the lone author that is now more or less a fact, Greene (2007) asked whether we no longer care who has actually drafted a paper that is attributed to many. In other words, can modern science do without concern for genuine authorship?

Authentic and Phony Authors

Although the practice of multiple co-authorship has come to stay and probably represents no great harm or vice in itself, it is not only associated with some unclarities but also a source of temptation to active disinformation. Within a team of people listed as authors, some may not be authentic but outright phony. The expression 'collapsing academic authorship' in the title of this chapter refers to the seemingly increasing (tacit) acceptance of the phenomenon of phony authorship, transgressing the borderline to fraud.

By phony author one could simply mean anyone who poses as the writer of a text without so being. In its strictest sense, such a definition would seem to rule out the possibility of there being more than one, or perhaps very few, authentic authors

of any paper, considering that writing comprises both the composition and the physical recording of text. In reality, things cannot be made quite that simple. It would be unreasonable to regard as phony anyone who has not had his hand on the pen or keyboard. However, deep involvement in the intellectual aspects of the writing procedure, *i.e*. in the process of composing the text, must be required for authenticity, unless the term 'author' be deprived of the very essence of its traditional meaning.

It is probably not very controversial that this criterion in typical cases excludes technical assistants from the by-line, in spite of their having played an important practical role in the investigation on which an article is based. Neither does it seem objectionable that, conversely, the criterion readily accepts many scientist apprentices as authentic authors. Although an advanced research student may not yet be capable of drafting a publishable paper entirely on her own, her understanding and intellectual participation is typically more than sufficient to justify authorship and is often of at least as great a significance as that of any co-authoring supervisor.

However, what about so-called 'gift' or 'honorary' authorships?

The potential risk that co-authorship may lead to misconduct has long been a matter of some concern. Investigating the circumstances surrounding an admitted case of scientific fraud, Stewart and Feder (1987) analysed an odd hundred reports (including 18 major articles) published by the incriminated scientist in collaboration with 47 co-workers at famous universities. Frequent lapses from acceptable publication standards were observed, including several cases of honorary authorship, *i.e*. the appearance of phony authors who had not made any adequate contribution essential to the research.

This phenomenon, which is also referred to as 'gift authorship' (Smith 1994) and not necessarily connected with any other deviance, seems to be regrettably widespread. If not openly applauded or encouraged, it does not appear to be much criticized either. It is as if many otherwise honest scientists do not consider active disinformation in the by-line to be wrong in the same sense as manipulation of scientific data or the methods description would be. That differentiation is clearly dubious if not evidently erroneous. Putting up with any deliberate disinformation is in principle in conflict with the overriding scientific norm of truth seeking, a fact that should be a sufficient argument for not condoning phony authorship. Moreover, those excusing the phenomenon of phony authorship overlook or disregard the fact that there are areas of research other than their own, notably such scholarly fields as the history, sociology or theory of science. In such areas the identity of the real author of a scientific article may very well belong to the category of research data. Perhaps less significant in principle, but nonetheless of practical importance, is, of course, that condoning phony authorship is inevitably prone to raise some suspicion about one's seriousness and trustworthiness in general. Stewart and Feder (1987) wrote:

> The reader may ask: What harm is done by honorary authorship? Indeed some of our colleagues have argued that the custom of routinely placing the name of a senior scientist, usually the head of the laboratory, on a paper – regardless of his contribution – is widely followed and does no harm. We disagree, as have others […]: honorary authorships falsify the assignment of responsibility for published research and increase the likelihood that

> inaccurate data will be published. The honorary author is in a poor position to judge the validity of the work, yet he often lends prestige that may lull other co-authors, the reviewers or the readers into uncritical and inappropriate acceptance.

This stern judgement against honorary authorships seems fully warranted. In fact, in the light of the development taking place during the decades following their report, one is inclined to think that Stewart and Feder (1987) were perhaps too lenient. They viewed honorary authorship as one of several less serious reflections of carelessness or haste, whereas arguably it more properly belongs to their class of grave misconduct including wilful deception.

Editorial Regulations

Recurrent discussions in the past of the topic of legitimate authorship have encouraged the International Committee of Medical Journal Editors (ICMJE) to promulgate a set of rules called 'Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publications'. These Uniform Requirements, which are under constant revision, have been adopted by many great journals, among others, the leading medical periodical, the New England Journal of Medicine. In view of its prestige and wide dissemination, a journal of such status can be anticipated to exert a considerable normative influence in the biomedical scientific world.

The electronic submission of an original research report to the New England Journal of Medicine has to be accompanied by a certification that none of the paper's authors is phony. In January 2012, the wording was as follows:

> I hereby certify on behalf of all the authors that we helped write this manuscript and agree with the decisions about it. We all meet the definition of an author as stated by the International Committee of Medical Journal Editors, and we all have seen and approved the final manuscript. […]

The instructions to authors on the journal's website are somewhat more demanding in prescribing that 'each author must sign a statement attesting that he or she fulfils the authorship criteria of the Uniform Requirements'. The essence of the ICMJE requirements concerning authorship is captured in the following quotation from the organization's website (January 2012):

> Authorship credit should be based on 1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. Authors should meet conditions 1, 2, and 3.

It should be emphasized that the criteria explicitly demand that legitimate authors meet all *three* of the above specifications. That proviso would seem to preclude that anyone could be an author merely in virtue of taking part in the drafting or critical revision of the text. Evidently, each author should have personal contact with the actual data, at least as much as is needed to be able to analyse them. That 'analysis' here must be taken to mean scientifically adequate analysis goes without saying.

In a paper on the phenomenon of ghostwriting (Healy and Cattell 2003), the ICMJE regulations were quoted as not requiring that all three conditions be met. The regulations have also been portrayed as demanding that the three conditions be met by at least one, but not all, of several collaborating authors (Madiba and Dhai 2006). Those interpretations go back to earlier versions of the regulations, *e.g*. (International Committee of Medical Journal Editors 1985) than the ones presently valid.

Moreover, it is worthy of note that present ICMJE requirements not only define who is entitled to be included in the list of authors. They also demand that all authentic authors should be openly acknowledged as such: 'All persons designated as authors should qualify for authorship, and all those who qualify should be listed.' Thus, for example, it does not seem acceptable for a senior supervisor to abstain from appearing as a collaborating author together with his or her research student, if, which is sometimes the case, the supervisor meets all of the three ICMJE criteria for authorship.

At first glance the ICMJE requirements seem reasonable and demanding. However, on closer inspection it is obvious that the interpretation of the provisos allows a great deal of flexibility. How much is a substantial contribution and how much involvement in energy and time is necessary for a draft to be critically revised for important intellectual content? How much of the intellectual content of the paper – all of it or just a small fraction – relevant to each author's specialization?

Some insight into how the rules are implemented in practice can perhaps be gained by analysing the publication pattern of some conspicuous author. For this purpose, some time ago I picked the first name of the top original article in the then most recent issue of New England Journal of Medicine. It seemed all the more relevant choice as the by-line of that paper contained more than a dozen names, the first of them being the corresponding author (judging from the address for reprint requests), on whose shoulders the journal had placed the onus of ensuring that everyone in the by-line met the ICMJE criteria for authorship. Of course, selective probing of this kind might yield an impression that is not representative for the average article or author in New England Journal of Medicine or elsewhere. Nonetheless, it would be informative as an indicator of what could pass in a highly representative forum of the scientific medical world.

A search in the Web of Science showed that the author in question had published 47 papers in the preceding 12 months, on research comprising large patient groups as well as technically demanding laboratory methods. To participate in the writing of nearly one paper a week in accordance with the above ICMJE norms is a noteworthy achievement. Clearly, it can be done. However, it is difficult not to get struck by the possibility that the editorial requirements for authorship may in reality be less restrictive than the readers are likely to think and than they were perhaps once meant to be.

When Both Traditional Intellectual Norms and Official Regulations Fail

A remarkable breach with the traditional norms for scientific conduct as well as with the specific ICMJE authorship regulations has been revealed in research connected with the pharmaceutical industry. In brief, to promote their products on the

market, companies may manipulate the by-lines of scientific papers reporting the effects of drugs. Papers drafted by anonymous collaborators, sometimes for-profit writing firms, are adorned with the names of illustrious academic scientists who have had only little real involvement in the research reported.

Studying the effect of suspected ghostwriting on the characteristics and impact of articles related to Pfizer's antidepressant drug sertraline, Healy and Cattell (2003) concluded that the style of authorship in industry-linked articles 'raises concerns for the scientific base of therapeutics'.

An even more hard-hitting and sensational disclosure of clearly manipulated by-lines occurred in April 2008 in the leading general medical periodical, Journal of the American Medical Association, JAMA. The once widely prescribed anti-inflammatory substance, rofecoxib, better known under one of its product names, Vioxx, had been withdrawn from the market in 2004 because of serious cardiovascular and cerebral side effects. Owing to litigations brought against the producer, Merck and Co., Inc., previously secret documents pertaining to the company's research on rofecoxib became available for scrutiny.

Analysing this material, Ross et al. (2008) discovered that Merck employees had worked either independently or in collaboration with publishing firms to prepare manuscripts and had then recruited external, academically affiliated investigators to appear as authors, frequently as the first or second name on reports of clinical trials. Merck was also found to have offered investigators honoraria between $750 and $2,500 for serving as authors of scientific reviews that had been ghostwritten on their behalf by publishing firms.

In the same number of JAMA, a signed editorial (DeAngelis and Fontanarosa 2008) took issue with this kind of devious subterfuge in the strongest possible terms, placing moral responsibility on both industry and the medical profession at large:

> The profession of medicine, in every aspect – clinical, education, and research – has been inundated with profound influence from the pharmaceutical and medical device industries. This has occurred because physicians have allowed it to happen, and it is time to stop.

And, referring to the exploitation of phony authorship:

> Individuals, particularly physicians, who allow themselves to be used in this way, especially for financial gain, manifest a behavior that is unprofessional and demeaning to the medical profession and to scientific research. [---] Drastic action is essential, and cooperation of everyone involved in medical research, medical editing, medical education, and clinical practice is required for meaningful change to occur.

In Sweden a bizarre little sequel to this sordid story took place in one of the leading daily newspapers, *Svenska Dagbladet*, where the medical journalist Inger Atterstam reported on the JAMA disclosures in two news articles. In that context she interviewed the managing director of the pharmaceutical trade organization in Sweden (Atterstam 2008). He professed being a little surprised by the stir, as shown by the following quotation from the article (author's translation):

> – Everyone involved knows how it works, he says. The companies do the job and pay for more than 90% of all drug trials. For example, the extensive analysis of data is done in the companies, and the reports are drafted by people hired by them.
>
> He thinks that all science journal editors are very well aware of these facts.

– The selected leading academic researchers do not have time for this excessive work in detail. That is self-evident, he says.

He also considers it reasonable that the star scientists get paid as, after all, they must put their mind to the material. That need not mean they are bought.

– Besides, not a single scientific journal would accept an article written by company people alone. It would be silenced.

Concluding Remarks

Clearly, big pharma does not recognize much reason for worry over the latitude in intellectual and moral responsibility between putting one's mind to a material and being an author in the true sense of the word. It is my impression that the medical world at large does not worry much either. Despite recurrent discussions in the scientific literature for decades about the problems associated with multiple co-authorship and such decadent phenomena as honorary, gift or guest authors and ghostwriting and in spite of the ambitious guidelines of the International Committee of Medical Journal Editors, the problems seem to be increasing rather than diminishing. For one thing, the number of names posing as authors on the average paper has been steadily growing, making it increasingly difficult to tell chaff from wheat concerning the real contributions of 'authors'. The seeming complacency over these matters among medical scientists in general may in part depend on the fact that the most spectacular cases of phony authorship have been disclosed in a fairly circumscribed area of research, the clinical trials of new drugs. However, a more sinister possibility cannot be ruled out. Perhaps it is a long-standing and widespread tolerance for a certain amount of phony authorship in every corner of the medical world that has made it possible for the industry to put this kind of deviance into systematic use for the gain of economic profit. Whatever the explanation is, it is clear that the situation is, as the JAMA editorial put it, demeaning to medicine as a branch of science. Lest medicine will lose more of its prestige and credibility, concerted action must be taken to restore medical authorship as an intellectual institution. In the eyes of conscientious scientists and scholars, to publish in accordance with the degenerated norms of a damaged subculture is not success; it is in a sense to perish.

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