

# Golden Jubilee

50 years of publication

## Publishing and academic promotion

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### ABSTRACT

**Clearly, academic endeavour has to be the single most important criterion for appointment to an academic position and for subsequent promotion. It is rare for excellence either in teaching or clinical practice to offset a poor publication record. However, the pressure to publish and gain related grant income can lead to problems in the normal academic pursuits of a department or institution. These and other related issues will be explored in this editorial.**

**Keywords: academic promotion, citations, impact factor, publication**

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### “Publish and be damned”

([en.wikipedia.org/wiki/Publish\\_And\\_Be\\_Damned](http://en.wikipedia.org/wiki/Publish_And_Be_Damned))

### INTRODUCTION

Life in a university department 50 years ago was a civilised affair, even if the “output measures” were uncertain. Staff all enjoyed the respect of the students and colleagues. All members of a department were deemed to be clever. Everyone had done or was doing significant research work. It was appreciated that some members were more “research active” while others were more involved in teaching and clinical work. Given the UK contract in place at that time (pursue teaching, religion and research and give no less than four lectures a year), a very small minority did just that. This explains why Margaret Thatcher’s new contract for university staff (five-year renewable against agreed targets) was so unpopular in certain quarters. Not only was it unpopular among the small minority of slackers who abused their handsome privileges, it was also unpopular among serious scientists whose research was more fundamental and not suited to short-term grants/contracts. Max Perutz, the co-discoverer of the structure of haemoglobin with John Kendrew,<sup>(1)</sup> argued cogently that discoveries such as theirs (and the related discovery of the structure of DNA) could not have come about with short-term 3–5 year grants. Likewise, certain advances require nearly two decades of development following their initial

discovery before entering mainstream clinical practice.<sup>(2)</sup> Many advances have come about with relatively little or no research income and infrastructure – merely the enquiring mind and the hard work of the innovator (e.g. Sir Godfrey Hounsfield, computed tomography<sup>(3)</sup>).

With new contracts and much clearer separation of funding streams for research and teaching, much has changed. Few jobs are really for life. An academic with a poor track record becomes an embarrassment for a university department and a financial liability for the university where income will follow success in various research assessment exercises. In the past, he or she might have been encouraged to move sideways into teaching or clinical practice. But salvation in the form of an increased teaching load may not now be the answer. Teaching is now rigorously evaluated and poor teachers will reduce the standing of the department in the dreaded league tables and teaching quality assessments. Because of a possible low clinical workload, it is not a given that an increased clinical contribution from a middle-aged failing academic will even be fully appreciated back in the clinic.

Because of the above problems, there are enormous demands for young and not-so-young academics to produce as much and as quickly as possible. Furthermore, research posts are often of relatively short-term duration; thus research projects have to be constructed, completed and published as rapidly as possible so that the research worker has a chance of promotion. Given the rather slow and complex ethical committee process and the inherent difficulties involved with clinical research, the young research worker has to be remarkably tenacious in order to achieve results. Some of the difficulties faced by those seeking promotion are addressed below. Inevitably the examples that follow will tend to be rather biased towards imaging, in line with the area of interest of the author.

### MENTORSHIP AND GUIDANCE

Probably the most important aspects of research work for a young researcher are the choice of subject, senior colleagues and available departmental facilities. The subject may be predetermined by the grant or specifics of the post itself; some research fellowships may be tied to a certain group of patients (e.g. rheumatoid arthritis).

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The funding may be in the gift of one senior researcher; it is worth finding out from others who have worked with this senior colleague whether appropriate mentoring, guidance and future support are forthcoming. Obviously there is not much point in working on patients with musculoskeletal problems in a department without state-of-the-art equipment (e.g. magnetic resonance [MR] imaging facilities).

Given an interesting subject, a good senior mentor and excellent facilities, it is still very much up to the individual research worker to make a success of the opportunities and to ensure that publications will follow. Such success will create the reputation that will lead to appropriate academic promotion. In many ways, collegiality, hard work, enthusiasm and professional expertise are more important than academic brilliance alone. Most research work involves teamwork; the research worker has to liaise with radiographers/technicians in order to “squeeze in” additional research studies and patients around the margins of the working day. This involves tact and diplomacy.

A good mentor/head of department will have frequent formal and informal discussions as to the aims and aspirations of the junior research worker, including frequent reviews of the state of various projects and papers. In accordance with good research practice, the authorship of the papers should be determined at the initiation of the project. This will avoid angry arguments at a later date. Because academic promotion sometimes assesses the number of first author/last author papers, a good mentor will ensure that there is an even distribution of first authorships among deserving members of a department. Increasingly, journals seek the name of a guarantor of a paper who is responsible for ensuring that good research practice is adopted and, importantly, that all authors on a paper fully deserve authorship status.

### **LONG-TERM VS. SHORT-TERM RESEARCH STUDIES**

In many aspects of current research, there are increasing difficulties with respect to long-term research projects. Funding agencies generally like to see “quick fix” results to justify their expenditure. Because many staff move between jobs quite frequently, few are prepared to embark on studies requiring 5–10-year follow-up. However, a journal is much more likely to reject a paper on the grounds of insufficient numbers or inadequate follow-up than too many patients or too long a follow-up! For a young research worker, an 18-month post as part of a team involved in long-term research may only yield authorship on a couple of papers, with other colleagues gaining the coveted first authorship status. Nevertheless,

some publications are at least assured from a team involved in such long-term projects. Likewise, a young researcher joining a department with a good track record in certain topics (e.g. health technology assessment), is highly likely to end up with a first authorship paper (e.g. health technology assessment of MR imaging in low back pain) as part of the rolling programme of the department’s research. However, some critics might say that the young research worker had merely “served time” in the department and enquire as to how much of the work in that paper was truly original and independent.

On the other hand, young research workers, who hit upon an interesting question and develop the research methodology themselves with only modest support from their mentor, could prove themselves to be truly original thinkers and deliverers. However, such an approach is considerably more risky than the involvement with the collaborative rolling programme approach described above. The real highfliers will usually combine and create a portfolio of both types of papers, thereby emphasising their ability to cooperate harmoniously in the team approach as well as demonstrating their capacity for independent research.

### **QUALITY VS. QUANTITY**

In the ideal world, all young research workers would achieve a first authorship paper on a subspecialty topic in a major journal, such as the *New England Journal of Medicine*. But because of the intense competition, many research-active clinicians fail to achieve such success after a lifetime of research! Thus a certain sense of realism must be adopted. Given the approach suggested in the previous section, one would hope that the young research worker would achieve one or more articles in a major mainstream specialty journal (e.g. *Radiology*, *European Radiology*, etc. for imaging) during the final years of their residency or during a subspecialty research fellowship. If they are pursuing a higher degree (PhD, MD, etc.), some more technical articles in more specialised journals may also ensue. When nearing completion of a higher degree, a review article on the topic in a high-ranking mainstream specialty journal may be an attractive goal.

The planned sequence of publications advocated above is more likely to gain academic promotion than a “scattergun” approach of a random mixture of case reports and other opportunistic articles. Indeed, journals are increasingly reluctant to publish case reports as they do little for their impact factor. Likewise, they do not do much to embellish the curriculum vitae (CV) of anything but the most junior of research workers. Perhaps a better approach for young research workers is to demonstrate

their enthusiasm by submitting several case reports/teaching cases to the various electronic teaching files now promoted by various journals/societies/educational bodies in most clinical disciplines.

### **CHOICE OF JOURNAL**

Naturally, all authors wish to see their work published in the journal with the maximum publicity and highest impact factor. Indeed some institutions rank the output of their research workers in accordance with the impact factor and the citations relating to the various papers within a CV. Various research exercises also consider these factors. If a paper is truly groundbreaking, it is worth trying to get it published in a general high-ranking medical or scientific journal. Sometimes researchers do not realise how attractive some of their work might be to top-class journals, such as Nature, Science, New England Journal of Medicine. More realistically comes a choice between a top-ranking clinical journal (e.g. Gut for a hypothetical paper on MR imaging in juvenile Crohn's disease) or a high-ranking radiological journal (e.g. European Radiology). Curiously, certain clinical journals (e.g. in neurosciences and infectious diseases) often enjoy a much higher impact factor than others (e.g. in surgical and radiological sciences), and are thereby often selected as a first preference; however, these differences are rapidly changing. Certainly, radiological journals are rapidly increasing their prominence and are climbing the league tables of impact factors. Another choice hangs on whether to choose a general imaging journal or go straight to a subspecialty radiological journal (e.g. Pediatric Radiology).

For the young research worker needing to gain promotion, speed is of the essence. They need their papers accepted or in press with a citable electronic DOI number. Selection committees are put off by a CV which contains numerous papers with statuses such as "submitted, under review, in preparation, etc." Thus, the young research worker is well advised to submit to a middle-ranking journal which has a fast review process and publication record, even if the paper might, after several iterations, have made it into a higher-ranking journal. One advantage of this rapid approach is that there is less chance of the contents being "scooped" by another group, which is relatively common in a fast-moving field such as modern radiology. Everyone knows the disappointment of seeing a virtually-identical paper coming out during the preparation or during a lengthy review process of one's own paper. The rejection letter will come back with the unfortunate comment: "Sadly an almost identical paper has just been published and thus this submission is no longer truly original".

### **CURRICULUM VITAE PREPARATION**

As stated before, it is better if the CV and publications can show one or more definite themes rather than a "scattergun" opportunistic approach. If the major thrust is going to be in something like carcinoma of the pancreas, it is best if publications on that topic are grouped together under a theme heading. In this way, a young researcher can underline their interest in this topic by including various other aspects: guideline development work, key poster presentations, and electronic teaching file submissions (especially if they are citable). Some senior assessors rather disapprove of CVs which highlight impact factors and citation rates of individual papers, considering that it is up to the assessor to make these judgments. For intermediate and senior promotions, a sheet of the "ten best papers" may be appropriate; such a sheet might also include a line or two explaining what is important and what change in thinking these key papers brought about.

### **WHAT COUNTS IN JOB APPLICATIONS?**

Of course stellar publications count more than anything else, especially if the research worker can truly demonstrate that he was the real intellectual driving force behind the paper rather than the "hired hand" who did the legwork. Such intellectual probing is very much the point of the interview system used for scientific applications in many universities. Likewise, the list of publications and ongoing work is only the starting point for a research worker's future career. Hence, the CV should be arranged in such a way that illustrates the suitability for the post in question.

### **DIFFERENCES BETWEEN COUNTRIES**

It is hoped that the majority of people pursuing academic radiology do it because they enjoy it and are intellectually stimulated by it. Of course, it is appreciated that some effort in this direction is necessary to gain promotion. But sadly, a small minority of researchers only embark on research papers in order to embellish their CV. Such factors vary extensively from country to country. In some centres, the first author receives a modest reward for each paper; in others, the research worker with the strongest publication record during a year receives some prize or other recognition. In some countries, promotion from one rank to another (and thereby, salary) hangs on the number of papers published, along with the relevant impact factors, etc. This can lead to ungainly squabbles as to who is first author, undue pressure on editors to publish certain papers by a certain date and, in the worst cases, salami publication of numerous almost identical

papers describing the same work but submitted to different journals with different lead authors. There are no easy answers to these problems. However, it is hoped that all department chairmen know enough about what is going on in their department to overcome such problems and to realise the individual contribution of each member of their staff. Then they, with the advice of their staff, should be able to determine promotion in an equitable fashion. Likewise they should be able to write letters of recommendation which reflect the true contribution of the research workers within their department, to promotion committees for external institutions.

### CONFLICT OF INTEREST

The views expressed are those of the author alone and do not reflect those of any journal/organisation with which he is associated.

### REFERENCES

1. Kendrew JC, Perutz MF. A comparative X-ray study of foetal and adult sheep haemoglobins. *Proc R Soc Lond A Math Phys Sci* 1948; 194:375-98.
2. Miles KA, Hayball M, Dixon AK. Colour perfusion imaging: a new application of computed tomography. *Lancet* 1991; 337:643-5.
3. Hounsfield GN. Computerized transverse axial scanning (tomography). 1. Description of system. *Br J Radiol* 1973; 46:1016-22.



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