

‘PUBLISH OR PERISH’: THE PITFALLS OF DUPLICATE PUBLICATION

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Abstract: Duplication of previously published text or figures in the scientific literature without adequate citation is plagiarism or, in the case of an author’s own work, self-plagiarism. It breaches the ethical standards that are expected in science and threatens the integrity of scientific journals. Three examples of duplication are noted, one of which involves *Palaeontology*. Redundant publication lowers the quality of scientific literature, damages the good standing of

journals, and reduces the intellectual impact of a study. Multiple papers on a particular theme are only acceptable if each builds significantly upon previous work and contains only as much background information as necessary to put the new data and observations into perspective.

Key words: plagiarism, self-plagiarism, publication ethics, palaeontology.

THE rubric ‘to publish or perish’ (e.g. Brochard 2004; Grieger 2005) is well known, but publication in palaeontology, and in science more generally, should not be at any cost. An author is personally responsible for acknowledging his or her own work, as well as that of others (Armstrong 1993); authors of papers intended for publication in *Palaeontology* ‘are responsible for the accuracy of their text’ (Batten 2006, p. 4). The duplication of text or images, in whole or in part, without adequate cross-references (excluding genuine errors), is plagiarism and a serious academic and publishing offence (Armstrong 1993; Gilbert and Denison 2003; Daroff and Griggs 2004; Mojon-Azzi and Mojon 2004). A direct quotation from an author’s own work should be treated in exactly the same manner as the publications of others, with quotations clearly marked and accompanied by a full citation (Gilbert and Denison 2003; Lowe 2003), which for authors of papers in *Palaeontology* means including a page reference. Quoting oneself without citation is self-plagiarism and is as unethical as quoting from the publications of others without due acknowledgement. It is a form of deceit and unacceptable at any level of study or research (Armstrong 1993; Lowe 2003; Brochard 2004; Giles 2005; Grieger 2005).

Plagiarism, including self-plagiarism, concerns the lifting of passages of text verbatim, or with only minor modification, from a previously published paper, as well as the re-publication of data, graphs, photographs or illustrations without attribution (e.g. Armstrong 1993; Gilbert and Denison 2003; Aguirre 2004; Giles 2004, 2005; Grieger 2005; Wittmaack 2005). It is misconduct

and a breach of professional and publication ethics: it breaks the fundamental obligation for honesty in science, and may amount to fraudulent publication or criminal activity by violating international copyright (Armstrong 1993; Lowe 2003; Brochard 2004; Daroff and Griggs 2004; Giles 2005; Wittmaack 2005; Anonymous 2006a). Hence, it is important to bring any example promptly to the attention of journal editors, reviewers and readers (Abelson 1982).

Concerns that plagiarism in the scientific literature is on the increase have been expressed in the editorials of, and papers in, a number of high-profile journals in recent years, as have discussions on the ways of detecting and preventing it (see references cited herein). Most reputable journals rely on specialist referees to judge the quality of a submission and to comment on the novelty of the submitted work. Unless they are aware of an author’s dubious reputation, referees do not normally approach a paper with suspicion, but when duplication of previous work is encountered it is customary for *Palaeontology* editors to insist upon its removal before the paper can be considered for publication or to reject the submission.

The pressure on most palaeontologists to publish is not as great as, for example, on those carrying out biomedical research in highly competitive teams supported by large grants, but they are not immune from it. It is important for the career development of many, especially those who have only a few years of research behind them and are anxious to ‘make their mark’. Unfortunately, one of the common manifestations of this is the bolstering of personal bibliographies by ‘salami-slicing’ research results and

publishing these in a series of short papers when just one or two more substantial contributions would suffice. This inevitably leads to some duplication of text and figures and, in addition, frequently presents a problem for referees and editors who have to decide whether to accept what is likely to be just a small instalment of a succession of similar papers or to reject the manuscript on this basis, even though there is nothing wrong with the science. Duplication of previous work in short papers is, however, usually fairly obvious. It is more easily hidden in longer works.

EXAMPLES OF DUPLICATION

Instances of text and image duplication in the palaeontological literature are comparatively uncommon. Nevertheless, small transgressions from what is generally regarded as acceptable behaviour are not as unusual as perhaps the majority of palaeontologists think. The level at which indiscretions cross the boundary between being minor and too significant to be overlooked, is difficult to define. Obvious unethical behaviour is apparent in one case described by Aguirre (2004) that involved the re-publication of macro- and micropalaeontological images, although the author concerned reportedly justified the duplication on the grounds that he lacked the facilities to produce high-quality figures for publication (Bosch 2004). Another concerns two papers on the same material that were submitted to the journals *Cretaceous Research* and *Review of Palaeobotany and Palynology* within a few months of each other and were subsequently published in the same year (Bonde and Kumaran 2002a, b). In neither is there a reference to the other even though all four photographic illustrations in the *Cretaceous Research* contribution are also in the later publication. Although the authors avoided repeating sections of text, they did not need to write the first, more preliminary paper.

Unfortunately, *Palaontology* is not immune from such problems. A recent example of which we have become aware concerns the concluding discussion in a paper by Kear (2006, pp. 850–852: ‘Palaeoecological implications of the assemblage’), which is almost identical to sections of two other articles (Kear 2005; Kear *et al.* 2006); only about 10 per cent (15 of 150 lines as published) is unique to it. None of the duplicated text is within quotation marks or explicitly cited. In addition, seven images (one reversed) in the paper have also been published in Kear *et al.* (2006), to which no reference is made.

This example illustrates how careful authors need to be when they make use of their own published or ‘in press’ work in subsequent papers. Whether through ignorance, oversight or design, duplication of this sort is not only unacceptable but also highlights how easy it is nowadays

to transfer text and figures from one paper to another by ‘cutting and pasting’. Use of images on more than one occasion may be acceptable depending on the contexts of the papers concerned but in general this should be avoided, and in any case should always be accompanied by a citation of the publication in which the figures first appeared.

IMPORTANCE OF SCIENTIFIC INTEGRITY

Honesty, fairness and respect for the truth are cornerstones of science and high-quality scientific writing (Armstrong 1993; Brochard 2004; Grieger 2005). Hence, self-plagiarism is widely deplored (Armstrong 1993); nevertheless, it appears to be a common and growing challenge in the literature (Giles 2005). Its extent is unknown but it is likely that the number of reported cases represents only the tip of a much larger iceberg (Mojon-Azzi and Mojon 2004; Giles 2005). A scientific paper should be original and contain data not released previously (Brochard 2004); however, the pressure to publish (explored elsewhere in, for example, Abelson 1982; Mojon-Azzi *et al.* 2003; Mojon-Azzi and Mojon 2004; Giles 2005; Grieger 2005, and references therein) leads some authors to duplicate publication, even though the vast majority of scientists are exposed to similar demands and do not resort to these methods.

Excellence in science requires authors to recognize that quality is more important than quantity (Brochard 2004). The submission of a manuscript relies on the honesty and integrity of the author(s). Editors generally insist that a paper to be considered for publication has not been submitted to another journal, in part or in full, or has not been published elsewhere in another format or language (Gilbert and Denison 2003; Lowe 2003). *Palaontology* requires that ‘manuscripts should largely contain previously unreported material: the overlap between related papers should be minimal’ (Batten 2006, p. 1) and that ‘intended contributions should not have been simultaneously submitted elsewhere’ (Batten 2006, p. 4).

Referees presuppose that a manuscript is original and that referencing is accurate and relevant (Lowe 2003; Mojon-Azzi and Mojon 2004). Editors and peer-reviewers cannot be expected to police fraud or plagiarism (Abelson 1982; Adam and Knight 2002; Jefferson and Shashok 2003; Anonymous 2006b; Marris 2006). It is generally assumed that the submitting scientists have acted in good faith.

Journal editors alerted to alleged cases of plagiarism have a duty to their readers and publishers to respond openly and promptly, but sanctions for this misconduct

are often negligible (Mojon-Azzi *et al.* 2003). They can, however, include contacting authors (and if applicable co-authors), publishing the details of any infringement, and informing home institutions and funding agencies. This can lead to the removal of online journal content, the printing of retractions, and a refusal to publish future work (Abelson 1982; Daroff and Griggs 2004; Pearson 2005; Wittmaack 2005; Marris 2006).

Redundant publication lowers the quality and endangers the good standing of journals, reduces the intellectual impact of scientific publishing, distorts reward systems, breaches copyright, and transgresses accepted ethical standards (Gilbert and Denison 2003; Mojon-Azzi *et al.* 2003; Giles 2005; Grieger 2005). It misuses the time of, deceives, and causes irritation to busy readers, reviewers and editors, unnecessarily inflates the already massive scientific literature, wastes much sought after journal space, and can lead to flawed meta-analyses (Abelson 1982; Gilbert and Denison 2003; Mojon-Azzi *et al.* 2003; Brochard 2004; Marris 2006). Finally, it dishonestly exaggerates a duplicating author's reference list (Mojon-Azzi *et al.* 2003; Brochard 2004; Giles 2005).

Research and publication ethics must be taken seriously. Self-plagiarism and other ethical transgressions not only damage an author's reputation but also need to be confronted when these are identified (Mojon-Azzi *et al.* 2003; Aguirre 2004; Anonymous 2006a).

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REFERENCES

- ABELSON, P. H. 1982. Excessive zeal to publish. *Science*, **218**, 953.
- ADAM, D. and KNIGHT, J. 2002. Publish, and be damned. *Nature*, **419**, 772–776.
- AGUIRRE, J. 2004. Plagiarism in palaeontology. A new threat within the scientific community. *Revista Española de Micropaleontología*, **36**, 349–352.
- ANONYMOUS 2006a. Ethics and fraud. *Nature*, **439**, 117–118.
- 2006b. Three cheers for peers. *Nature*, **439**, 118.
- ARMSTRONG, J. D. II 1993. Plagiarism: What is it, whom does it offend, and how does one deal with it? *American Journal of Roentgenology*, **161**, 479–484.
- BATTEN, D. J. 2006. *Notes for authors submitting papers for publication in Palaeontology, Special Papers in Palaeontology, Field Guides to Fossils and Fold-Out Fossils. Publication policy and practice.* www.palass.org, 22 pp.
- BONDE, S. D. and KUMARAN, K. P. N. 2002a. The oldest macrofossil record of the mangrove fern *Acrostichum* L. from the Late Cretaceous Deccan Intertrappean beds of India. *Cretaceous Research*, **23**, 149–152.
- 2002b. A permineralized species of mangrove fern *Acrostichum* L. from Deccan Intertrappean beds of India. *Review of Palaeobotany and Palynology*, **120**, 285–299.
- BOSCH, X. 2004. Fallout from fraud. *The Scientist*, **5**, 1–3.
- BROCHARD, L. 2004. Redundant publications, or piling up the medals. Getting published is *not* the Olympic Games. *Intensive Care Medicine*, **30**, 1857–1858.
- DAROFF, R. B. and GRIGGS, R. C. 2004. Scientific misconduct and breach of publication ethics. *Neurology*, **62**, 352–353.
- GILBERT, F. J. and DENISON, A. R. 2003. Research misconduct. *Clinical Radiology*, **58**, 499–504.
- GILES, J. 2004. Plagiarism in Cambridge physics lab prompts calls for guidelines. *Nature*, **427**, 3.
- 2005. Taking on the cheats. *Nature*, **435**, 258–259.
- GRIEGER, M. C. A. 2005. Authorship: an ethical dilemma of science. *Sao Paulo Medical Journal*, **123**, 242–246.
- JEFFERSON, T. and SHASHOK, K. 2003. Journals: how to decide what's worth publishing. *Nature*, **421**, 209–210.
- KEAR, B. P. 2005. Marine reptiles from the Lower Cretaceous (Aptian) deposits of White Cliffs, southeastern Australia: implications of a high latitude, cold water assemblage. *Cretaceous Research*, **26**, 769–782.
- 2006. Marine reptiles from the Lower Cretaceous of South Australia: elements of a high-latitude cold-water assemblage. *Palaeontology*, **49**, 837–856.
- SCHROEDER, N. I., VICKERS-RICH, P. and RICH, T. H. 2006. Early Cretaceous high latitude marine reptile assemblages from southern Australia. *Paludicola*, **5**, 200–205.
- LOWE, N. K. 2003. Publication ethics: copyright and self-plagiarism. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, **32**, 145–146.
- MARRIS, E. 2006. Should journals police scientific fraud? *Nature*, **439**, 520–521.
- MOJON-AZZI, S. M., JIANG, X. Y., WAGNER, U. and MOJON, D. S. 2003. Journals: redundant publications are bad news. *Nature*, **421**, 209.
- and MOJON, D. S. 2004. Scientific misconduct: from salami slicing to data fabrication. *Ophthalmologica*, **218**, 1–3.
- PEARSON, H. 2005. CSI: cell biology. *Nature*, **434**, 952–953.
- WITTMACK, K. 2005. Penalties plus high-quality review to fight plagiarism. *Nature*, **436**, 24.