

# PROCEEDINGS



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## RESEARCH LIBRARIES: NEW ETHICAL CHALLENGES AND POSSIBILITIES IN A DIGITAL ENVIRONMENT

Dr. Robert Vaagan,  
Associate Professor, Faculty of Journalism,  
Library and Information Science,  
University College of Oslo, Norway

### • Abstract

Misconduct in science is an unethical practice that concerns not only scientists, authorities and the taxpayer but also librarians in research libraries. The increased electronic availability of all forms of scientific information and increased reliance on author-generated metadata systems like Dublin Core mean that certain forms of misconduct in science (e.g. plagiarism, "salamization" of articles) may increase rather than diminish. Librarians in research libraries should therefore be sensitized to current ethical issues in science and be aware of the pitfalls of metadata formats. Moreover, the research library should have quality control standards that allow it to invoke, when necessary, national and international ethical research guidelines.

### • Introduction

The 11<sup>th</sup> Nordic Conference on Information and Documentation to be held in Iceland in June 2001 will also address the theme of library ethics. Suggested topics are privacy, user profiles, artificial agents, logging modules, cookies, copyright and intellectual property. My perspective in this paper is different. I shall argue that misconduct in science warrants heightened awareness of ethical issues on the part of the librarian and the research library. Ultimately the extent to which research libraries can deal with unethical misconduct in science depends on their standards of quality control.

### • Science and ethics

As defined by George Washington University "misconduct in science" means fabrication, falsification, plagiarism or other practices that seriously deviate from those that are commonly accepted within the scientific community for proposing, conducting or reporting research.<sup>1</sup> An increased awareness of unethical misconduct in science has during the 1990s generated considerable debate.<sup>2</sup> There is today a comprehensive literature available e.g. on the Web covering all aspects of ethics in science.<sup>3</sup> In a Norwegian context a bibliography published in 1997 listed no less than 340 international titles devoted to various forms of unethical misconduct in science. These ranged from falsified experiments through plagiarism (the most common example) to "salamization", i.e. ways of artificially inflating publication lists.<sup>4</sup>

<sup>1</sup> George Washington University (<http://www.gwu.edu/~avprgs/Miscon.htm>) 13.11.00.

<sup>2</sup> Price 1994.

<sup>3</sup> Science Ethics Bibliography 1997 (<http://www.chem.vt.edu/ethics/einny/ethxbibl.html>) 13.11.00.

<sup>4</sup> Jåsund 1997.

- **International guidelines in science and ethics**

The UN-accredited International Council of Scientific Unions (ICSU) has since 1996 had a Standing Committee on Responsibility and Ethics in Science. Ethics has so far primarily been an issue in medicine, in particular patients' rights and more recently genetics. International ethical standards are enshrined in The Helsinki Declaration (1996) regarding medical research on humans, and in The Vancouver Convention (1997) regarding the publication of scientific articles. In the natural sciences much attention has been devoted to ethical aspects of nuclear research, e.g. reflected in the Pugwash Movement. Yet in the humanities, social sciences and law there is so far no international institutional framework of guidelines except what can be deduced from the foregoing conventions or from human rights.

- **National ethical research guidelines in Norway**

Teaching 3<sup>rd</sup> year librarian students in the administration and organization of research libraries at The Faculty of Journalism, Library and Information Science at Oslo University College has convinced me of the need for better awareness among students of ethical research guidelines. Even among teachers few have been aware of the relevance to librarianship of existing national ethical research guidelines.

This is hardly surprising since in Norway there is (in contrast with the USA) no common policy formulated by relevant authorities at the national level. Instead, Norwegian authorities have left this issue to the research community. At the national level The Ministry of Church Affairs, Education and Research has not formulated a national policy on research ethics, and the theme is not addressed in legislation governing institutions of higher education.<sup>5</sup> The recently merged Norwegian Council for Higher Education which is a voluntary, advisory body, comprising Norway's 4 universities, 6 scientific colleges and 26 colleges and university colleges, has still not formulated a national, cross-disciplinary policy on research ethics. However, in 1998 the (now disbanded) University Council did recommend its members (universities and scientific colleges) to implement guidelines on research ethics. Today, therefore, some Norwegian universities and scientific colleges are currently implementing such guidelines although university colleges and colleges are not. This lack may reflect the misguided view that misconduct in science is more an issue for universities prioritizing basic research than it is for colleges concentrating on applied research and development. But since the most common form of misconduct in science is plagiarism, it is obvious that research ethics applies equally to all forms of R&D and thus to universities and colleges alike. There is no need for the Norwegian Council for Higher Education to delay formulating and implementing guidelines on research ethics that apply to all its members.

Having said this it must be noted that Norway during the 1980s and 1990s set up national committees for research ethics, first in medicine,<sup>6</sup> then in the natural sciences and in the social sciences and arts. Today all 3 committees have developed guidelines for research ethics in their fields, which are presented on their Websites along with their activities and publications. While there is some discussion about how independent the national committees are,<sup>7</sup> research

<sup>5</sup> Lov av 12.mai 1995 nr. 22 om universiteter og høyskoler.

<sup>6</sup> The national committee for research ethics in medicine coordinates the activities of 5 regional committees which were established in 1985 by the Ministry of Church Affairs, Education and Science.

<sup>7</sup> In medicine the 5 regional committees are affiliated with the respective university in each of the country's 5 health regions. There have been claims that the regional committees are not sufficiently independent of their university superiors (Gunnar Boevim and Arne Dale, feature article in *Aftenposten* 15. november 2000)

ethics has become an established topic in the research community. Yet there is in my experience still little awareness among many university and college teachers and students of existing national guidelines of research ethics, particularly in the humanities and social sciences. And although ethical standards in science generally have been improved, misconduct in science remains a concern.<sup>8</sup>

- **The librarian and the research library**

The possibility of misconduct in parts of science means that library ethics cannot be limited to privacy, user profiles, artificial agents, logging modules, cookies, affirming authenticity of downloaded documents or copyright and intellectual property. The academic or university librarian (hence referred to as research librarian) dealing with collection building and management, storage, retrieval and dissemination of scientific information and knowledge must take into consideration the possibility of e.g. plagiarism and salamization of articles. Further, the research library needs institutional procedures of quality control to deal adequately with scientific misconduct when this is discovered.

I am not arguing that the research librarian should assume the role of an ethical supervisor or moral auditor. My argument is that the research librarian may, especially under the impact of improved electronic techniques and an increasingly digitized environment, be the first to detect e.g. plagiarism or salamization. In particular this applies to material that has not been peer-reviewed, e.g. grey literature such as internal papers and articles, conference proceedings and occasional papers and preprints. The acquisition librarian assessing such material ought to possess the skills and have access to adequate procedures to take action if judged necessary.

While misconduct in science must be dealt with first and foremost by the researchers themselves and by their employers within the framework of national and international standards of research ethics, the persistence of misconduct in science poses new challenges and possibilities to research libraries and librarians. Internationally, the new awareness of library ethics is not confined to Western democracies: For instance in Russia a new Library Code of Ethics was created in 1997 after extensive discussion by all library associations.<sup>9</sup> In Norway early attempts from the mid-80s to develop written rules of library ethics failed. The board of The Norwegian Library Association discussed in March 1990 a proposal - developed over a 5-year period - to set up a framework of library work ethics. However, the framework was rejected by the board, its critics maintaining that the envisaged measures were already covered by existing legislation.<sup>10</sup> Nonetheless, some achievements have been made, both internationally and in Norway. Considerable effort has gone into electronic marking to secure the authenticity of downloaded documents.<sup>11</sup> But this is hardly enough. The shortcomings of bibliometrics<sup>12</sup> indicate that manipulation becomes easier the more we rely on electronic and digitized material.

As professional knowledge and information managers research librarians are called upon to provide expert guidance to students and scholars alike. Obviously the librarian who in good faith provides a scholar or student with a scientific article that turns out to contain e.g. fabricated results may with all good reason plead ignorance. If properly peer-reviewed such an article would not have been published. As noted the case is less clear when we turn to grey literature or

<sup>8</sup> Jåsund 1997.

<sup>9</sup> Klim 2000:219.

<sup>10</sup> Rosenqvist 1991:66-68.

<sup>11</sup> Akre et al. 1999:18.

to preprints that have not undergone peer review. In some fields of science research is being submitted to open-access archives before peer review and publication to encourage rapid distribution of research results. The Los Alamos electronic physics archive is e.g. currently being copied by medicine and biology.<sup>13</sup> This calls for greater circumspection also by research librarians in acquisitions and in negotiating electronic subscriptions.

While one cannot expect a research librarian to vouch for an article's scientific content, one might reasonably expect the librarian to be able to make some general deductions from the abstract or conclusions. Aided by the many existing metadata formats<sup>14</sup> the trained librarian will probably be able to detect e.g. cruder forms of salamization. In the case of plagiarism the author is most often the first to detect this. Yet in certain cases (e.g. if the author is deceased) a trained librarian with considerable experience in a scientific field is more qualified than most to detect plagiarism. In cases of doubt the librarian may consult others: the point is that the librarian may be the first to detect such instances of possible unethical misconduct and therefore ought to be prepared to deal with the situation.

In bibliometrics the librarian is even better trained than the researcher to detect ethically questionable «hits» or listings. A now dismantled Website offered in April 1999 a 42-page downloadable report at USD 19.95 that allegedly gave "12 killer strategies to vault your Web site to the top of the most popular search engines". The specifics included e.g. "Everything you need to know about manipulating web robots for maximum listing position", "learn how search engines determine relevancy and ranking" and "learn powerful meta-tag strategies that can broaden your audience and build high-volume traffic".<sup>15</sup> The corollary is of course that bibliometrics is biased. Bibliometrics can lend itself to manipulation and it also discriminates authors outside the Anglo-American area. The increased use by administrators of bibliometrics in R&D evaluation<sup>16</sup> means that bibliometrics is being used by non-librarians in areas such as assessments of research applications, although the technique has been proven to be methodologically biased.

In discussing salamization, plagiarism and cases in bibliometrics where there is good reason to believe that ethical boundaries have been transgressed, we are entering an area that also concerns the research library's quality control standards which are implemented by the librarian.

The need for research libraries and librarians to take also research ethics into account is accentuated by the current rapid digitization of research libraries. As the Los Alamos electronic physics archive, the Digital Library Federation (DLF) and a recent report on the digital shortcomings of The Library of Congress all illustrate, digitization is increasingly transforming the role of the research library, not only in the US but globally.<sup>17</sup> The speed and technology of digitization make it likely that misconduct in science may increase rather than decrease. Author-generated metadata systems like Dublin Core are open to manipulation by the author. In Web documents metadata are inserted in the HTML META-tag in the HEAD-area. Search robots like Alta Vista increasingly base their indexations on key concepts, author or title instead of free text, e.g. the first lines in a document. While this offers greater search precision, ambitious

<sup>13</sup> Skoie 2000

<sup>14</sup> Cf. the Los Alamos information Website per 13 November 2000 (<http://www.lanl.gov/worldview/news/releases/archive/00-092.html>).

<sup>15</sup> Akre et al 1998:8.

<sup>16</sup> Cf. the Website as per 26. April 1999 "Discover The Secrets of Positioning Your Web site at the Top of the 7 Most Popular Search Engines!" ([http://www.kernet.com/strategies/body\\_index.html](http://www.kernet.com/strategies/body_index.html))

<sup>17</sup> Skoie 2000.

<sup>18</sup> Ober 1999, LC21 2000.

authors can exaggerate the number and type of key concepts in order to score higher in terms of citation indexes and impact factors.<sup>18</sup>

- **Towards heightened awareness of research ethics among students of librarianship**

As a teacher I would not like my students to face unprepared a scenario e.g. in a hospital library where they could be requested by medical superiors to electronically collate data from patient journals, e.g. DNA profiles or particular illnesses that were of interest to the researcher. I consider it my responsibility to have taught my students that such a procedure is ethically suspect and needs prior approval by the relevant supervisory government body. Under existing Norwegian law the prior consent of The Data Inspectorate is necessary in order to electronically register identifiable persons. In the examples given such permission would not be forthcoming.

If some of my students were to become librarians in a university anthropological library they should know that under (little-known) existing Norwegian ethical research guidelines in the social sciences, an anthropologist is required to make available the research findings to the people and country where the fieldwork was done. This often entails writing the theses in an international language.

A first step towards creating a heightened awareness of research ethics among students of librarianship would be to include research ethics in the syllabus, e.g. in the 3<sup>rd</sup> and final year, particularly in the field of quality control. In this way the efforts by universities to teach ethics at the graduate level referred to earlier will be matched by the colleges.

- **Guidelines for research libraries**

In Norway the National Office for Research Documentation, Academic and Special Libraries currently lists 362 research libraries in Norway, mostly located at higher state and private educational institutions. According to figures for 1999 collated by the Central Bureau of Statistics, these employed a total of 1812 librarians. Of 18 million retained titles in archives, 3,8 million were in circulation that year.<sup>19</sup> Digitization of research libraries is a theme currently much discussed also in Norway. The implications of digitization are e.g. outlined in the most recent white paper on higher education in Norway, prepared by the Ministry of Church Affairs, Education and Research.<sup>20</sup> However, the theme of research ethics is not discussed.

This is surprising since in the US many universities have adopted ethical research guidelines based on federal regulations, e.g. from the Public Health Service and The National Science Foundation. In addition the Association of American Universities, the National Association of State Universities and Land-Grant Colleges and the Council of Graduate Schools formulated in 1988 a common policy in their *Framework for Institutional Policies and Procedures to Deal with Fraud in Research*.

In Norway the Auditor General which has representatives at all universities but not at scientific colleges, university colleges or colleges, has in recent years stepped up enquiries into the misuse of public funds. Another aspect of the American experience which therefore ought

<sup>18</sup> Hegna 1997:14; Akre et al 1998:7.

<sup>19</sup> Website of National Office for Research Documentation, Academic and Special Libraries Website as per 13 November 2000 (<http://www.ssb.no/aarbok/tab/t-070140-309.html>).

<sup>20</sup> NOU 2000.14, p.362. *Frihet med ansvar. Om høyre utdanning og forskning i Norge*

to be relevant for Norway is the concern in the US of possible misuse of federal funds or equipment. At George Washington University, once an initial enquiry has been substantiated, the possible misuse of federal funds or equipment is listed as the second-most important reason for initiating a formal investigation. According to my sources the local representatives of the Auditor General's office in Norwegian universities are called in to investigate cases of misuse of funds. Occasionally the Auditor General asks questions in university colleges about the fate of library book loans kept in the offices of departing scholars. The difference between Norway and the US is that in the US such enquiries are ethically motivated and based on national guidelines.

In Norway two logical steps are now called for: First, the newly merged Council for Higher Education ought to formally adopt recommended guidelines for all its member institutions (not only the universities). This may speed up the second step, which is the formal and full implementation of nationwide ethical research guidelines by all Norwegian universities, scientific colleges, university colleges and other colleges. In this process care must be taken to involve the research libraries. Their involvement would be consistent with their expanded educational and knowledge management roles.<sup>21</sup> Further I would argue that their quality control standards must be designed to include ethical considerations outlined above.

### • Conclusion

This paper has argued that misconduct in science not only concerns scientists, authorities and the taxpayer but also research librarians and research libraries. Ultimately it is a question of the extent of quality control standards in research libraries. Digitization of research libraries - ultimately leading us from the current hybrid to the future virtual library - combined with author-generated metadata systems will probably lead to intensified efforts by researchers to engage in unethical practices such as plagiarism and salamization. Two concrete steps have been advocated: First, the Council for Higher Education in Norway ought to formulate national guidelines on research ethics which pertain to all Norwegian institutions of higher education. Secondly, 3<sup>rd</sup> year students of librarianship must be presented with syllabuses that include research ethics.

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<sup>21</sup> Stoffle 1996.

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