The Building of a Responsible Research Community: The Role of Ethics

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Abstract

This paper looks into the importance of a responsible research community and how ethics can contribute towards the building of such a community. The paper starts off by outlining the many challenges facing a responsible research community. These challenges range from doing research, transferring the research results, commercialising the intellectual property, and publishing the research results, to managing the research results. Although some researchers' behaviour may give reason for the public to question their integrity, it is also a misnomer to label all researchers and their research as unethical. The public should also trust researchers in what they are doing. This paper analyses some of the many challenges in a research community. The analysis moves beyond the conventional understanding of research ethics. The paper also engages with the requirement of ethical research leadership to sustain a responsible research community. The author reflects on some guidelines for a responsible research community based on a South African example. The paper is based on a literature review of the topic, reflecting perspectives from the international research community.

Keywords: ethics, research ethics, integrity, responsibility, leadership

General Comments

The creation of new knowledge and the inventions of new technologies are as old as humankind itself. The beginning of organised higher education in the form of universities continued with this search to discover, understand and apply new knowledge and technologies. The classical *trivium* and *quadrivium* contributed to the need to understand the ontology of our world. Closely linked with the research processes of creating new knowledge

and the innovation of technologies, is the common belief that science is inherently *good* since it is based on *truth* (providing evidence on things as they are), *care* (changing society for the good), *innovation* (discovery of new possibilities) and *development* (improvement of the health and wealth of society). These foundational perspectives contributed to the common belief that a scientific community is a community working with integrity (see Lategan, 2010 on a discussion of "good" research). The editorial of Research Global (February 2011) correctly remarked:

> It is essential to ensure that individuals who conduct, teach and train in the research environment understand how their actions and responsibilities transfer to greater society.

Johnson (2009, p.18) follows suit with his comments. He said that research ethics is part of one's career. Maintaining the highest ethical standards is therefore a given. His advice is simply: "The research you carry out must be honest, accurate and ethical."

A number of incidents in the lecture rooms and laboratories and a number of new scientific developments resulted in the mistrust of the scientific communities' work. Recent international examples include the withdrawal of major research funding due to the way in which the budget was expensed (Myklebust, 2011), the employment of scientific techniques to justify the interrogation of war victims (Iacopino, Allen, & Keller, 2011), and practices in the classrooms and laboratories. In a book scheduled for publication in December 2011, Braxton, Proper, and Bayer investigated almost 800 cases of behavioural norms for graduate teaching and mentoring. Concerns that were outlined are disrespect for students' efforts, misappropriation of student's work, harassment of students, suppression of whistle-blowing and faculty-directed research malfeasance. (Medina, 2011)

The complexity of challenges faced by scientific communities is well documented by Schrag (1999) via a number of case studies. In these four-volume case study books, themes such as plagiarism, working relations between professors and graduate students, laboratory management of research, mentor responsibilities, integrity in research, research on human subjects, and policy issues are outlined. They all have implications for the ethical practice of research.

These and similar examples resulted in a renewed interest in the ethics and integrity of scientific communities. Recent examples include the Australian National Statement on Ethical Conduct in Human Research (2007), the European Science Foundation's European Code of Conduct for Research Integrity (2010), Singapore Statement on Research Integrity (2010), and the Expert Panel on Research Integrity in Canada (2010).

These concerns are challenged from another angle. Pattyn and Van Overwalle (2006) express concern with the way in which universities are now developing. It appears as if money has become a driving force for scientific activities. Although research is needed to support a knowledge economy, research cannot go forth without a sound ethical basis.

Dillemans (2006) is clear that ethics should not be an add-on to the research assignment. He observes that, from a European perspective, ethics has always been part of the scientific endeavour, either through its commitment to address societal problems or its relation to the values of humanity and solidarity. From a practitioner's perspective, Human-Vogel and Coetzee (2011) argue that although ethics in science should never be waived, review committees can be biased regarding the basis of employing, for example, values associated with clinical experiments to evaluate research in the humanities.

Baker (2010) puts a challenge before the public: He calls for the reinstatement of public trust in the integrity and ethical rigour of researchers. This is only possible if researchers' behaviour is beyond doubt.

The ensuing question is, how can a scientific community be responsible in the practice of research? More specifically, what role has ethics to play in upholding the responsibility of the scientific community?

Problem and Methodology

The study and application of research ethics are not new to the scientific community. This is evident from the large number of ethical codes and best practices that exist around the world. The latest one is the Singapore Statement on Research Integrity (2010), in which good scientific practices are described as those based on sound ethical research methods. However, as research is increasingly driven by a human rights culture (based on the dictum "do no harm"), economic prospects (profit margins, the contribution to the knowledge economy, and transfer and innovation activities) and business decisions (patenting, commercialisation, and human capacity development), renewed attention is placed on research ethics to regulate the research process. In one of its tracks, the recent conference of the Australasian Research Management Society (September 2011) looked into the challenges of research governance and the application of ethical practices to scientific labour. This track reminded people that research ethics covers more issues than who owns publications (issues of copyright, plagiarism, and intellectual ownership), noting that data should be respected (falsification and fabrication of data), secured (to whom is information available), and contextualised, (analysis and interpretation of data), and highlighting the value of ethical codes (meeting minimum standards and practices) and the link to scholarship (part of academic practice).

Following from literature and policy review, debates and applications, it is evident that the challenge is not limited to a conceptual understanding of ethics only. In a post-modern society the question is, whose ethical perspectives should prevail? (This debate should be coupled with the debate on paradigmatic influences on ethical choices. Strauss (2009) and Rossouw (2005) rightfully note that the choice of paradigm is the springboard for the ensuing arguments. To understand researchers' logic and way of reasoning, one should comprehend the paradigm from which he or she is working.)

Another challenge is the concern that, although an enabling ethical climate can be created, it is no guarantee that researchers will be "ethical" or behave according to ethical expectations. Hence the question remains if one can teach or train researchers to be ethical. Will researchers' personal value systems secure sound ethical behaviour? The answer remains debateable. If one observes what is happening around the world in research laboratories and lecture rooms, it appears as if ethical problems are multiplying. (One possible consideration could be general awareness of the need for ethical behaviour, regulation, compliance, whistle blowing, and ethical hotlines drawing the public's attention to ethical challenges.) A third challenge is that researchers (especially in the natural sciences) often regard ethical review as removed from the research process. Once the approval is done, sound ethical practices typically are not applied through-out the research process. This behaviour does not recognise that ethical principles should still be applied during all stages of the research process.

The question, therefore, is how can a research community become more responsive to those norms and values associated with a responsible research community? The characteristics of a responsible research community are built on universally accepted ethical values such as honesty, integrity, loyalty, respect for life, care for the environment, accountability of public funding expenditure, research outputs supportive of human capital development, value for money, responsibility, trustworthy, no conflict of interest, and non-hazardous activities or results. The Singapore Statement on Research Integrity (2010) echoes these norms and values.

Although normally not mentioned when the characteristics of a responsible research community are discussed, this community cannot go without a value for money approach to research (economic responsiveness), quality in research (versus mediocre research outputs) and useful research (in service of society). Research is therefore not an isolated activity – it links up with academic practices, the needs of business/industry/government and the application and implementation of research results.

This article will investigate the role ethics can play in contributing to a responsible research community. The article is primarily literature informed and built on the foundation of philosophical and theological perspectives.

Ethical Disorder in the Research Community

The ethical challenges facing the research community are discussed below.

Science is regarded as that activity of human society that may be trusted, is reliable, and a safe-keeper of social developments. When scientific practices fail to meet these societal expectations, research, its results and values are questioned. It is then that the integrity of researchers comes into play. This distrust is not without reason. Consider the following disorders in ethical practice:

Plagiarism is to take another person's ideas and present them as your own. This is nothing else but stealing someone else's intellectual property and behaving as if you are its

rightful owner. A scientist claims to have produced knowledge that is not his or her own. Apart from this misrepresentation of ownership is the question of whether these results were ever evaluated in a scientific manner or (sometimes in a disguised form) simply presented as they are: untested and not verified. Linked to the ownership of an idea is the question of authorship, which arises if all the people listed as co-authors of a paper contributed equally towards its preparation. Opinion differs on what is the minimum requirement to be regarded as a co-author. Is the answer quantifiable? The Vancouver Protocol (1997) is internationally recognised as the standard for determining authorship on publications. For researchers to be recognised as authors, every author needs to have been involved in concept and design or analysis and interpretation of the data, and drafting the article or revising it critically for important intellectual content and final approval of the version to be published. Acquisition of funding or participating in collecting data doesn't qualify a researcher to become an author. The Australian Code for the responsible conduct of research (2007) refers to, amongst others, (a) a substantial contribution to the paper, (b) contribution to research design, and (c) interpretation of data. Another related question is the responsibility for what is put into the public domain. The Australian Code starts off with a set of principles such as communication to as many stakeholders and communities as possible, well-explained results to non-peers, and the assessment if the published results can contribute towards the enhancement of society.

The way in which data are treated, secured and protected also calls for concern. The purpose of data is as evidence in building an argument. Data should therefore be reliable. But, if data are misused, what guarantee is there that the data could be trusted? The misuse of data therefore revolves around presenting something that isn't owned, or the falsification or fabrication of information. Data misuse and abuse are dishonest, and mislead the research community and the public as end-users of such information. Another concern is the safekeeping of data. Data reflect something of the individual and should be protected with care. Researchers cannot always give an account of how data are protected to ensure that they do not fall prey to those hands that may abuse the original purpose of the data collection.

Science results are also not meant to threaten people and society, as noted earlier. Science should have a caring nature that encompasses people, the environment, culture, and systems. But when the proverbial "Frankenstein Monster" is produced as a result of scientific endeavour, society will feel insecure and will then have the right to question the purpose of research, its results and impact. Here ethics has a role to play in bringing security to people, the environment, culture, and systems. Ethical behaviour -- and each researcher -- should always consider the reason for doing something (motive or drive for action), and the effect it can have on society. Central to ethics discourse is an understanding of motive and impact. It is here where research review committees need to play a guiding role. These committees can never be limited solely to a paperwork effort, but must have an important role to play with regard to steering and regulation. But the researcher him- or herself also needs to subject the research project to self-review, thereby safeguarding and regulating what he or she is doing. Self-review is not always practiced and emphasised enough. There is often the common belief that if someone else approves a project, it means that the intention of this project is beyond

question. It is worthwhile to remember that integrity starts with the individual. In this sense, the researcher is his or her own keeper. This also relates to the importance of stewardship for one's own intellectual inventions.

There is general agreement that in the training of researchers not enough attention is paid to the ethics of supervising research teams and post-graduate studies. It is generally accepted that once the researcher has obtained a doctoral degree, he or she will automatically know how to behave with integrity in the research environment. But this is far from the reality. The ASSAf study on PhD studies (2010) in South Africa points out a number of concerns. The essence of these concerns is that the scientific relationship is very often poorly managed by supervisors, which results in poor performance. It is a shame that researchers misuse their position in the supervisory process. In turn, it is also a problem that students do not always exercise ethical behaviour. They, too, can misuse their position. Endless examples exist: the research leader who must be included as co-author (even worse, as lead author) in all projects regardless of the fact that sometimes no (or almost no) contribution has been made to a paper. Is being the research leader a qualifier for co-authorship, or is it dependent on the contribution to this paper? The claim is very often based on the contribution to the study and the ownership of intellectual property. Why is it that so many students exceed the period that is normally associated with the research project, that the research is not kept within the budget, and that nothing or very little is contributed towards the academic development of the student? Can one simply blame it on the limited interaction between study leader and student or the poor guidance from the supervisor? The question can be asked if the student also takes responsibility for his or her study. There is no reason why one cannot argue that a student has co-responsibility for the successful completion of a study. To illustrate the point: how responsive is the student to advice? How much effort must a student expend on a project to ensure that it is his or her project? Commitment is an ethical value. The reader will also note that this paper has not even touched on issues of sexual and verbal harassment, the underpayment ("cheap labour") of research assistants, or the fact that the same themes and topics are being researched (recycled) year after year. The role of personal behaviour can never be ignored in building a responsible research community.

It is also a concern that researchers often overlook the impact of research on the environment, sustainable development, safety and security, and business. In the research ethics curriculum, these topics may not be given attention, and sometimes are even ignored. The ensuing question is "Who should look at what"? Can one really say that whose money is spent or how it is spent is only a business and management concern? Or should all researchers in all disciplines take note of this? The same question applies, for example, to environmental care: Is it only a concern for researchers in engineering, agriculture and environmental studies? What about safety and security? Or job creation, poverty and HIV/AIDS? Who should look into these ethical issues? The point is not that researchers should become all things to all people. The argument this paper is making is that, apart from a limited understanding of ethical challenges in research, it is also notable that researchers look too selectively at those issues that should be of concern to a scientific community.

It is also alarming when the drive for the commercialisation of research it is often more about making profits than developing the scientific basis of a discipline. The commercialisation of science also has impacts on the professional level. It is an ethical problem when a conflict of interest arises where the researcher is doing research (on demand) to confirm – rather than independently provide – evidence. It is also a problem when the scientific basis doesn't grow, but results are simply recycled for economic benefit.

The "Ethical" Researcher

Gabriele (2011) unpacked what research leadership means for the research community. It is primarily based on ethical behaviour. His analysis provided a basis for researchers to practice their profession.

The starting point of his overview is that researchers need to understand what research is and who the communities are they need to serve. Self-knowledge and self-service are two vices. Researchers are essentially called to make life *better*. This *better* may assume many interpretations. He argued that essentially it relates to "full emptiness of life after Adam and Eve have been kicked out from paradise." This explanation reflects a deeply rooted understanding of calling, imperfection of the world we live in, and the determination not to accept life as it is. He is also of the opinion that researchers should search for discovery, which in turn implies a search for completion. This observation relates to the idea that creation calls for ongoing discovery. It should be remembered that creation underpins innovation.

Gabriele dismisses the perception that research is a business, that it should be managed as a business, and that business value should be added to whatever researchers are doing. Those who view research only on the basis of these attributes overlook the creative and innovative part of research, focusing instead on delineating the discipline into water-tight categories.

Research has also a therapeutic nature – it should contribute to the restoration of people. Examples are endless: consider all the new mental disorders soldiers are experiencing after returning from post-World Trade Centre conflicts. Researchers play a stewardship and service role.

For researchers and research administrators to meet these challenges, they need to understand their role in research. This starts with a deep sense of what research is and how it relates to the vision and mission statement of a particular university. It would do no harm for researcher managers to understand the research portfolio that they are serving. This is also a challenge that researchers should master. A fundamental question here is, what kind of communities are we building within our universities? The positive answer depends on how researchers are committed to the vision and mission statement of the university.

In administering research, Gabriele built on the Socratic concept of a midwife, explaining that research administrators are "midwifing" others' ideas. Researchers give

birth to ideas and possibilities. Researchers give birth to what was never known before. In addition, researchers should also give meaning to what they are creating. This relates to truth-telling (prophesying).

Gabriele further argues that researchers should not hang on to power. Instead, they should be pilgrims for the truth. In being pilgrims for truth they become patron saints for science. The researcher is also a servant – through the development of the new frontiers of truth, power should be declined in favour of a service role.

These perspectives signal that researchers should be people of integrity and not merely compliance. The proverbial words of one's profession should be engraved in a researcher.

A number of valuable lessons could be drawn from Gabriele's presentation. First, research is a calling with an ethical dimension. Second, research creation underpins improvement, innovation and new possibilities. Third, the researcher is an artist busy unravelling the secrets of the universe. Fourth, research is power, but the researcher should use this power to serve. And fifth, the researcher should be a person of integrity and commitment.

Building a Responsible Research Community

In building an ethical culture in science, it would be a limitation to think of ethical challenges in research along the conventional lines of plagiarism and copyright, fabrication and/or falsification of data, uncontrolled clinical research on human subjects, and possible harmful research. To start with is ethics, the science of norms and values, and how they should be applied to all human activities. As a science, ethics interacts with other sciences as well. All sciences therefore have an ethical dimension. Following from this premise is that all sciences should therefore be mindful of the way in which they respond to ethical challenges.

With this in mind, a number of guidelines can be formulated for a scientific community to be responsive to the norms and values in science. These guidelines are based on a discussion document the author drafted for the Central University of Technology, Free State. The discussion document is based on prior institutional guidelines over a number of years. These guidelines are now being revised by a Senate Working Group on ethics for the university.

Core function of a university: An ethical code should exist for the three core missions of a university, namely teaching and learning, research and innovation, and community engagement. The commitment to the three core missions is based on the assumptions that they are interrelated, and that all academic staff is participating in these core missions. Following on these assumptions, is the expectation from the university that its staff and students will carry out the academic assignment with the highest ethical and scientific standards of academic integrity and performance. As a community of scientific practice, staff and students should adhere to those values that are universally recognized by the scientific community. Staff and students are also expected to live up to the institutional values of the university and the constitution.

Paradigmatic choices: Academics should be free to select the paradigm for their academic work and to formulate their own opinions, findings and conclusions based on their research. These findings and conclusions should be placed in the public domain (hence the commitment to publish and present research results), and should be available for scrutiny, debate, and criticism as required by the university and scientific community's principles of dialogue, debate, openness and transparency. In exchange for freedoms granted to them and the expectation of what scientists should be doing, academics have an obligation to conduct scholarly work in a way that advances knowledge while maintaining high ethical standards.

Dictum of do no harm: Scientists and the university (as a collective) should commit themselves to the ethical dictum of *do no harm* in all their activities. Scientists should commit to the universally accepted ethical values associated with the protection and preservation of human life, responsibility towards animal life, preservation of the environment, contribution to safety, security and sustainable development, respect, compassion, care and integrity in human interactions and relations, and live up to the universally accepted claim of the common good.

Teaching and learning: Teaching and learning activities should be informed by the latest scientific results, be relevant to societal needs, and contribute towards implementable and useful knowledge. No power relationship should be exercised between lecturer and student. Teaching and learning activities should be free from any form of harassment and sexual favours. Formative and summative assessment practices should be a fair and just assessment of the newly gained knowledge of the student based on the evidence produced. This conduct relates to undergraduate and graduate education.

Postgraduate supervision: Teaching and learning at the postgraduate level should be driven from the perspective that the supervisor plays a supportive role in the student's discovery of new scientific knowledge. The supportive role should be informed by assisting the student to delineate the research topic, to formulate appropriate research questions, to identify an appropriate research design and to develop the scientific and scholarly skills of the student. This relationship depends on mutual commitment to the project and assignment, clear roles and responsibilities in the supervisory relationship and regular interaction on the basis of formative assessment.

Research teams: Research teams should behave at all times according to the ethos of their professions, live up to the expressed values of the professional and academic organisations, and express collegiality and teamwork in the research that they are collectively and individually working on.

Creation of knowledge: Researchers should be committed to the creation of new knowledge and not the recycling of existing knowledge. The creation of new knowledge should promote the knowledge creation agenda of the university and the academic, professional and applied knowledge demanded by government, business and industry. No

knowledge should contribute to any situation where the safety and security of society is under threat. The ethos of knowledge creation should not be questionable.

Unfair benefit: Staff and students should at all times avoid situations that could contribute to an unfair benefit for the individual, and hence question the integrity of the research project. Although the notion of individualism and academic freedom is respected by the university, individualism and academic freedom can never be at the expense of other staff and students. Researchers and research teams should share the notion of responsibility. Responsibility means never to take personal advantage of a situation to the expense of other researchers. The motive why researchers engage with something should always be assessed.

Integrity of data: Data should be reported accurately and should not include fabricated and falsified results in any report, assignment or publication. Staff and students must acknowledge information and data that are not their own in every report, assignment or publication. As soon as staff and students become aware that the wrong information or data were presented unintentionally, it must be corrected in the public space.

Use of data: In the collection and use of data, staff and students have the responsibility to safeguard the privacy of participants and to ensure that data remain confidential until such time that it is made known to the public domain. Once the information is in the public domain, accessibility to the data should be provided according to the policy regulating the public disclosure of information.

Authorship: The lead researcher should ensure that any person who has significantly contributed academically to the study being reported in a publication either in conception or design, execution of the experimental work, interpretation of data, or drafting the paper, report or presentation is included either as an author or given appropriate acknowledgement. Any person accepting authorship accepts responsibility for the validity of the whole paper, report or presentation. Authorship must be limited to individuals who have made a significant contribution to the research.

Funds and equipment: Staff and students have an obligation to use funds and equipment for the purposes for which they were awarded. Funds must be managed in a way to ensure that they are neither wasted nor misappropriated. Funds and equipment should be used in accordance with the awarding agency's requirements.

Risk: The evaluation of risk should take a participant-centred approach. This implies that a threshold for normally acceptable risk must be established. This threshold is typically based on determining the normal range of risk a participant experiences in everyday life. If the risk inherent in research participation does not exceed this standard, then it may be considered within the threshold of normal acceptance.

Privacy: A guiding principle for involving participants in research, research-related or community engagement activities is voluntariness. A participant's involvement in research-related or community engagement must be through his or her own free will.

Conflict of interest: The individual researcher should disclose any situation that could lead to a real or apparent conflict of interest. There should also be notice of potentially conflicting relationships between academics, researchers and their team members, students, the university, external funding agencies, organizations, and communities.

Execution of discipline: Direct relationships between staff/staff and staff/students must be avoided in the context where discipline must be exercised. In cases where such relationships do exist, the information must be put in a public record. Supervision of a spouse or child must be discontinued. Where such cases do exist, an independent staff member must be in charge of executing discipline.

Hazardous material: The use and disposal of hazardous materials for teaching and learning, research, demonstration, or other purposes, whether on or off the premises of the university, but whose activities are associated with the university, will be subject to the provisions of existing legislation and must be complied with.

Conclusion

The intention of this article was to identify the challenges associated with practising research and integrity. The focus was not system specific, but rather attempted to accommodate as many national systems as possible that deal with research integrity. Four main conclusions can be drawn:

First, are research ethics and integrity more than a matter of conceptual understanding only? Research ethics and integrity relate deeply to the researcher's own understanding and practice of these matters. An a priori perspective is therefore one of self-assessment, self-regulation and self-review. Gabriele's analysis of the ethical researcher is therefore a pointer in the debate of a responsible research community.

Second, research ethics and integrity can never be limited to the conventional demarcation of this topic only, namely falsification and/or fabrication of information, plagiarism and harmful research on human subjects. This paper signalled the intention that such issues as funding, training, animals, the environment, safety and security, fit into the broader domain of research ethics and integrity. In addition, research ethics and integrity fit into the broader domain of scientific practice and should be executed accordingly.

Third, work research ethics and integrity in two ways. Research practice must be of such a nature that it leaves no room for mistrust. But society should also trust the integrity of researchers. One cannot label a research community as being unethical simply because a few researchers engaged in unethical behaviour.

Fourth, ethics education and training should be continued. One does not become ethical after one workshop. One does not stop being ethical if ethical judgement and/or behaviour was not sound in one case. The challenge is therefore to regard the developing of a responsible research community as an ongoing activity.

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