Journal of
Economics and Political Economy
www.kspjournals.org
Volume1 December 2014 Issue 2

Letter to the Editor

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Dear Editor,

As the new JEPE Journal is beginning its difficult but exciting journey into the world of scientific publishing, I would like to share some of my experiences, good and bad, in the area of publication ethics with the editors, authors and readers. I hope this brief note will stimulate interest, originate discussion and lead young scientists into the honorable avenues of science.

"Ethics" has penetrated our daily lives in many ways in the recent years. Unfortunately this excessive use is beginning to somewhat shadow the actual message of the term. Furthermore the domain of ethics is increasingly intersecting with the law, morals, traditions and even religion. On the other hand, ethics is being used in many areas as a tool for preventing, inhibiting, steering or even punishing those with bold or innovative ideas. In fact ethics must be a group of concepts that should be examined, studied and taught as one the most important foundations of academic and scientific life.

Ethics is broadly defined as "*norms for conduct"* that distinguish between acceptable and unacceptable behavior (1). It consists of a chain of rules, governing the duties, obligations, behaviors and moral principles of all working people. Ethics does not always contain written and definite conditions like the law. It can show some variations in time, changing circumstances, social requirements and scientific developments. However, the main determinants like "doing good", "not doing bad", "acting in justice" are universal. In recent years, very serious ethical problems were found in scientific research and scientific publications and consequently interest in ethical issues was stimulated in all sections of the society.

The necessity of research and its natural extension of publications for the benefit of the society requires that the accuracy of studies and their reporting must be determined. The scientific and ethical foundations of scientific studies and their reporting concerns not only the editors, institutions or the readers but sometimes the entire society and humankind which will benefit from the results. A false study may deceive research institutions and funding agencies but when it is published it has the potential to mislead the entire scientific community and the society. These studies sometimes distract research and may have negative effects on people who may benefit from the results. For example large amounts of financial support is

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given for pharmaceutical research and the society rightfully expects not only new products but also accurate and unbiased evaluation of their effects and side effects. Repercussions of a poorly conducted study may be devastating for individuals and the society.

These are some of the reasons why ethical deviations from respected norms of research and publishing are considered as cardinal offences in all fields of science. Many countries have established local or national organizations to investigate these events. However it must be emphasized that ethical issues of research are everybody's concern including supervisors, mentors, institutional leaders, editors and governments. Above all it is the responsibility of the scientists to conduct and publish studies in the most ethical manner.

Any deviation from the universally accepted norms of research and publications are generally referred to as *"Scientific Misconduct", "Scientific Dishonesty"* or *"Scientific Fraud"*.

Two forms of scientific misconduct are identified**:**

Sloppy research occurs when scientists *unintentionally* disregard proper scientific methodology in designing, conducting, analyzing or reporting research.

Scientific misconduct is encountered when investigators *intentionally* steal, cheat, distort or manipulate science for their own benefits. The unfortunate aspect is that all forms of scientific misconduct, intentional or not, have the potential to mislead the scientific community and the society at large.

Commonly encountered forms of scientific misconduct are given in Table 1.

TABLE 1. *Forms of Scientific Misconduct*

I.	Plagiarism
II.	Fabrication
III.	Falsification
IV.	Authorship issues
V.	Duplicate publication
VI.	Conflicst of interest

Plagiarism is widely defined as copying of other people's ideas, publications, data, results or other intellectual products without giving credit or referencing. Fortunately this deplorable practice has been in the decline in recent years largely due to the application of plagiarism detection software such as Turnitin and iThenticate. Above all it is imperative for the young scientists to become acquainted with scientifically acceptable forms of giving reference to other people's works.

Fabrication and falsification refer to invention of data or results not based on research (desk top publishing) and distortion or tampering with data respectively. These types of misconduct may be more difficult to detect by journal editors so it is mainly up to the supervisors or department heads to closely monitor younger scientists in order to prevent such occurrences.

Authorship issues are some of the most common ethical conflicts in the academic community. Naturally authorship credits must be given to all those who deserve it and should not be offered to those who do not qualify as authors of a scientific work.

Authorship credit should be based only on substantial contributions to:

(a) Conception and design or analysis and interpretation of data; and to

(b) Drafting the article or revising it critically for important intellectual content; and on

(c) Final approval of the version to be published

Conditions (a), (b) and (c) must all be met. (2, 3)

In practice, the names of junior scientists may be pushed down the list or sometimes may be omitted altogether. In contrast persons with little physical or intellectual input into the study may be included in the list of authors (gift authorship). These practices are equally unacceptable and distort the honest traditions of science.

Duplicate (redundant) publication indicates submission of the same scientific material totally or in part to more than one journal. Publications in different languages is considered in this category as well. Duplicate submissions abuse the times and efforts of editors, referees and readers. It must be mentioned here that prior publication of conference proceedings or abstracts is not generally considered duplicate publication provided the journal editors are accurately notified in advance and a note indicating previous reporting of data is included in the manuscript. Sometimes both editors of the first and second journal may allow publication of an article or parts of it in another journal or in a different language.

Conflicts of interest has become an increasingly serious issue in recent years as industry has assumed a major role in supporting research. Certainly the editors and readers have the right to know who is funding a scientific study so that they can assess the results correctly. Unfortunately studies show that in a large proportion of studies published in major journals sources of funding is not disclosed accurately. This is more of a problem in the light of the observations that industry-funded studies are much more likely to show favorable results for the products of the supporting companies (3)

There are other forms of ethical violation certainly no less significant in perverting the process of scientific inquiry. Failure to obtain informed consent properly or breach of animal experimentation rules are becoming less and less frequent. Editors must be cautious for potential ethical violations involving the referees and editorial staff. Selection of references accompanying a manuscript must be evaluated for the possibility of bias. It is evident that ethics of publications is becoming an increasingly complex area with new and old challenges. Nylenna et al. listed 9 major forms of ethical violations involving scientific publications (4).

People have different reasons for resorting to scientific misconduct. The imposing environment of “publish or perish” may provoke search for bypasses to success. Some are attracted to fame, economic and/or academic gains. Excessive pressure from superiors and misconception of “more papers equals more prestige” may lead others to deviate from appropriate routes. But the most important reason underlying ethical violations in science is a lack of education in these areas. It is a duty for all senior scientists, educators, chairs and academicians to educate students and junior scientists in the proper ethical ways to conduct and report science. As an editorial in The New England Journal of Medicine rightly emphasizes “It is never a crime to make mistakes in science provided that the experiments and studies are presented carefully, honestly and openly” If we fail in this mission of teaching the young, future generations will suffer from the consequences of bad science in all fields of human life. Professor Michael Farthing, prominent editor of Gut once remarked “Protecting the public against scientific misconduct is a public health problem just like preventing contamination of food and water”. (5)

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