

Comissão de Ética da Universidade do Minho

# **Integrity and Misconduct in Academic Research**

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# Part II – Research Work and Publication of Results

## *Summary*

- **Integrity in research work**
- **Publication of results**
  - ***Plagiarism***

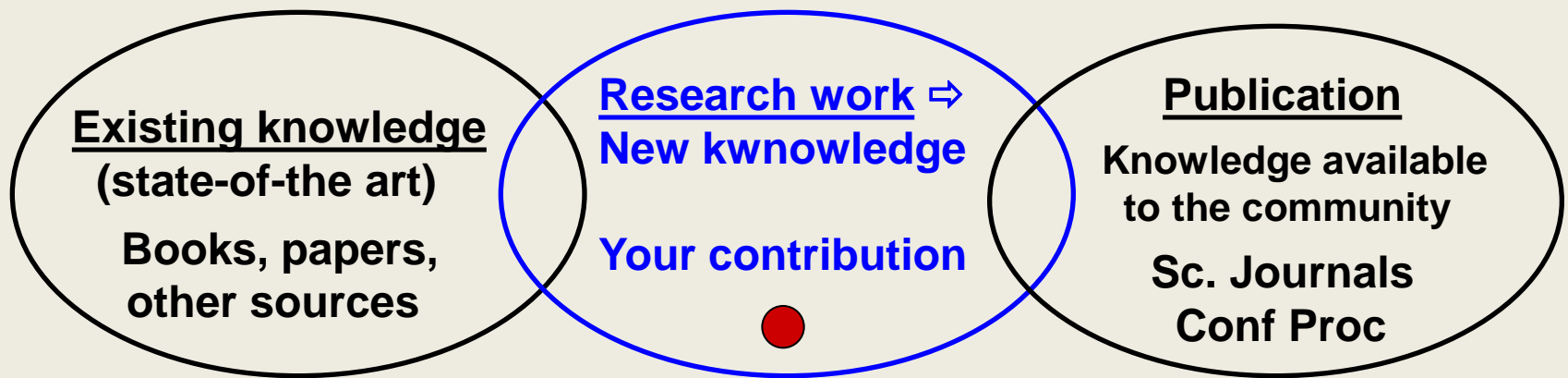
Common faults in paper publishing  
How to avoid plagiarism  
Quoting and Paraphrasing. Examples
  - ***Citation of sources***

What should be cited? Citation styles  
Examples of citation of sources
  - ***Authorship***

Conventions for assigning authorship  
Unethical practices associated to authorship

# 1. Academic research work

The build up of scientific knowledge – interaction between parts involved



- In this process we deal with published work as well as with other researchers/colleagues in a research group and with the scientific community
- Some basic principles (ethical principles) must be respected in this context

When involved in research work, you are here ●

# Some fundamental rules in a research group/community

*(Adapted from Shamoo and Resnik , 2009)*

- **Non-discrimination**

Whatever the basis: religious, political or ethnical

- **No harm**

No subject should be harmed by our activities

(all studies involving humans or animals need approbation of ethical committees)

- **Privacy**

Every one has the right to keep private his research activities

- **Honesty**

Honesty in methods and procedures

Honesty in data/results reporting

Do not fabricate data

Do not deceive colleagues or institutions

## Some fundamental rules in a research group/community (cont.)

(Adapted from Shamoo and Resnik , 2009)

- **Objectivity**
  - Avoid bias in the design of experiments, data interpretation, personal decisions ...
- **Carefulness**
  - Avoid careless errors and negligence.
  - Examine critically your own work and other's works
  - Keep good record of your research activities: *experiments, data collection, correspondance with agencies or journals*
- **Openness**
  - Share results, ideas, tools.
  - Be open to criticism and new ideas

## Some fundamental rules in a research group/community (cont.)

*(Adapted from Shamoo and Resnik , 2009)*

- **Respect for intellectual property (IP)**
  - Patents, copyrights and other forms of IP
  - Do not incur in plagiarism. Give credit to your sources
- **Confidentiality**
  - Protect confidential communications (unpublished results, papers submitted not yet published)
- **Responsible publication**
  - Publish in order to advance research. Care about authorship.
  - Avoid duplicate publication and all kinds of plagiarism
- **Responsible mentoring**
  - If/when you are in such position, help to educate and advise students.
  - Promote their interest. Allow them take their own decisions.

⇒ **Those are conditions for Academic Integrity and Trust**

## 2. Publication of scientific results

- **What is a scientific paper ?**

- Its a means of sharing your own original research with other scientists.
- It articulates your work with the work done by others in the same topic
- In this way you contribute to build up knowledge in the field

**Therefore, your paper,**

- Should contain original material
- Should articulate your findings with the findings of other researchers in the same field
- Should give credit to the work of others that is relevant to the topic
- Must avoid plagiarism ⇒ include full citations of relevant works

## 2.1. Common faults in paper publishing

*(Kerstine Stenius, 2010)*

- **Careless attitudes**

Negligence in the preparation of the manuscript.

Fail to adequately review the literature on the topic. Selective citation of articles. Excessive self-citations. ...

- **Unfair authorship**

Failure to include eligible authors

Include authors that did not contribute to the work

- **Redundant publication**

Use material that has been used in a previous paper/communication

- **Plagiarism**

Reproducing other's words, ideas, data, figures, as if they were your own.

**It applies to print as well as electronic versions**



## 2.1. Common faults in paper publishing (*cont.*)

*(Kerstine Stenius, 2010)*

- **Self-plagiarism**

Re-use of previously published material when rights have been assigned to the publisher.

- To avoid self-plagiarism use quotation marks and cite the original source.
- If large sections are reproduced request permission.

- **Other fraud**

- “**Trimming**” – altering one’s data
- “**Cooking**” – selective reporting of one’s data
- “**Forging**” – making up the data

## 2.2. How to avoid plagiarism?

*(Academic Integrity at MIT – A Handbook for Students, 2010)*

- **Cite your sources**

In-text citation + full identification of the source in a References list

- **Use Quotations**

When the words of the author (source) are particularly clear or expressive (better than your own words to express the same idea)

- **Use Paraphrasing**

When quotation is not necessary

**If a large amount of written or illustrative material** is to be used ask for permission.

## 2.3. Quoting and Paraphrasing

*(Academic Integrity at MIT – A Handbook for Students, 2010)*

- **Quoting**

Means to use exactly the same words of the source in between “ ”

- **Paraphrasing**

Means restating the words of another source using your own words

**Strategies to paraphrase:**

- use synonyms for words that are not generic
- change the structure of the sentence
- change the voice from active to passive (or vice-versa)
- reduce clauses to phrases
- change parts of the speech
- cite the source

## 2.3. Quoting and Paraphrasing - Examples

(as in *Academic Integrity at MIT – A Handbook for Students*, 2010)

- **Quoting** - Consider the following text from an original source:

*Because of their unique perspective, Americans fear globalization less than anyone else, and as a consequence they think about it less than anyone else. When Americans do think about globalization, they think of the global economy as an enlarged version of American economy.*

**Source:** Thurow, L. (1993), *Fortune Favors the Bold* (p. 6). New York: Harper Collins.

### ➤ **Accurate quoting**

Lester Thurow (1993) asserts that the American reaction to globalization is different from that of the rest of the world in that “Americans fear globalization less than anyone else, and ... think about it less than anyone else” (p. 6).

### **Why is this accurate?**

- i) The writer has introduced the quotation with his own words
- ii) The writer has indicated with “... ” where exact words of the source begin and end
- iii) The writer has named the source in an introductory phrase
- iv) The writer must also include the full Thurow reference in Bibliography/References

## 2.3. Quoting and Paraphrasing – Examples (cont.)

(as in *Academic Integrity at MIT – A Handbook for Students*, 2010)

### ➤ Plagiarism

*The American view of globalization is unlike that of the rest of the world. Because of their unique perspective, Americans fear globalization less than anyone else, and therefore think about it less than anyone else (Thurow, 1993).*

#### Why is this plagiarism?

Although the writer has identified the source, he has not put quotation marks (“ ”) around the original portion of the phrase

This will allow the reader to think that those words are the writer’s words, not Thurow’s words.

## 2.3. Quoting and Paraphrasing – Examples (cont.)

(as in *Academic Integrity at MIT – A Handbook for Students*, 2010)

- **Paraphrasing** - Consider the same text from an original source:

*Because of their unique perspective, Americans fear globalization less than anyone else, and as a consequence they think about it less than anyone else. When Americans do think about globalization, they think of the global economy as an enlarged version of American economy.*

**Source:** Thurow, L. (1993), *Fortune Favors the Bold* (p. 6). New York: Harper Collins.

### ➤ **Acceptable Paraphrase**

*Lester Thurow (1993) maintains that because Americans see globalization simply as a bigger form of their own economy, they are less concerned about it than is the rest of the world.*

#### **Why is this acceptable?**

- i) The writer has kept the meaning of the original passage without copying words or structure (words like *globalization* and *Americans* are generic terms)
- ii) The writer has named the source in an introductory phrase
- iii) The writer must also include the full Thurow reference in Bibliography/References

## 2.3. Quoting and Paraphrasing – Examples (cont.)

(as in *Academic Integrity at MIT – A Handbook for Students*, 2010)

### ➤ Plagiarism

*According to Lester Thurow (1993), Americans **fear globalization less** than people from other countries and **as a consequence** spend less time **thinking about it**. Indeed, Americans see globalization **as an enlarged version** of their own economy.*

**Why can this be considered plagiarism?**

The original source (Thurow) is cited, but

- i) The writer has used Thurow's exact words without enclosing them in quotation marks (“ ”)
- ii) He has only substituted synonyms here and there ...

### 3. Citations

*(Academic Integrity at MIT – A Handbook for Students, 2010)*  
*(<http://library.williams.edu/citing>)*

- **What should be cited ?**

- **Printed sources**

- Books, articles, any material printed on paper

- **Electronic sources**

- Web papers, articles from online journals, ... any material from the internet

- **Recorded material**

- Television or radio programs, films, panels, interviews, public speeches

- **Spoken material**

- Personal conversations, interviews, poster sessions, ...

- **Images**

- Charts, graphs, tables, illustrations, photographs

⇒ **Do not use citations in support of obvious common knowledge**



### 3. Citations (*cont.*)

*(Academic Integrity at MIT – A Handbook for Students, 2010)*

*(<http://library.williams.edu/citing>)*

- **Citation styles**

- **APA** (American Psychological Association)
- **Chicago** (University of Chicago Press)
- **MLA** (Modern Language Association)
- **ACS** (American Chemical Society)
- ...

⇒ **Always follow the Journal Editor recommendations**

⇒ **Check with your supervisor on the citation style commonly used in your field of study**

### 3. Citations (*cont.*)

(*Academic Integrity at MIT – A Handbook for Students, 2010*)  
(<http://library.williams.edu/citing>)

## Examples of citations – ACS style

In-text citation + full citation of the source in the list of References

### i) In-text citations (brief identification of the source)

- *Italic numbers* (the numbers of the list of References)

The Hydrodynamic film pressure in the bearing can be determined by the following expression (1)

or,

Elrod (1) derived the following expression to determine the hydrodynamic film pressure in the bearing

### 3. Citations (cont.)

*(Academic Integrity at MIT – A Handbook for Students, 2010)*  
*(<http://library.williams.edu/citing>)*

#### - **Author name and year of publication**

The Hydrodynamic film pressure in the bearing can be determined by the following expression (Elrod, 1984)

or,

Elrod derived the following expression to determine the hydrodynamic film pressure in the bearing (1984)

**Alternatively, depending on number of co-authors,**

(Kumar and Booker, 1994) - when the source has two co-authors

(Costa et al., 2000) - when source has more than two co-authors

### 3. Citations (cont.)

(Academic Integrity at MIT – A Handbook for Students, 2010)  
(<http://library.williams.edu/citing>)

#### ii) List of References (full bibliographic information of the sources)

##### - **Books**

Shamoo, A.; Resnik, D., *Responsible Conduct of Research*, 2nd ed.; Oxford University Press: New York, 2009.

##### - **Article from a reference book**

Powder Metallurgy. Kirk-Othmer *Encyclopedia of Chemical Technology*, 3rd ed.; Wiley: New York, 1982; Vol. 19, pp 28-62.

##### - **Article in a scientific journal**

Costa, L.; Fillon, M.; Miranda, A. S.; Claro, J. C. P. An Experimental Investigation of the Effect of Groove Location and Supply Pressure on the THD Performance of a Steadily Loaded Journal Bearing. *ASME Journal of Tribology* **2000**, 122, 227-232.

##### - **Article from an online journal**

Peacock-Lopez, E. Exact Solutions of the Quantum Double Square-Well Potencial. *Chem. Ed.* [Online] **2007**, 11, 383-393

<http://chemeducator.org/bibs/0011006/11060380lb.htm> (accessed Aug 23, 2007)

### 3. Citations (cont.)

(Academic Integrity at MIT – A Handbook for Students, 2010)  
(<http://library.williams.edu/citing>)

#### - **Thesis**

Brito, F. P., Thermohydrodynamic Performance of Twin Groove Journal Bearings Considering Realistic Lubricant Supply Conditions: A Theoretical and Experimental Study. Ph.D. Dissertation, the University of Minho, 2009.

#### - **Article in conference proceedings**

Winstein, S. In *University Chemical Education*, Proceedings of the International Symposium on University Chemical Education, Frascati (Rome), Italy, October 16-19, 1969; Chisman, D. G. Ed.; Butterworths: London, 1970.

#### - **Patents**

Teixeira-Dias, F.; Martins, J. S. Sandwich Structure for Blast Protection. PT Patent 104855, December 4, 2009.

#### - **Web Page**

Universidade do Minho. RepositóriUM: Comunidades e Coleções.  
<http://repositorium.sdum.uminho.pt/comunity-list> (accessed January 27, 2014)

#### - **Personal communications (APA style)**

Personal (private) communications are not considered verifiable – they should be cited in the text only, not in the list of references.

In-text Example: (C. M. Taylor, personal communication, March 25, 1997)

## 4. Authorship

*(Shamoo and Resnik, 2009)*

*(<http://www.parint.org/isajewebiste/tutorials.htm>)*

**The prestige of an academic researcher is associated with the quality and quantity of his publications ...**

- **In the past** – very small research groups – **authorship did not raise any problems**
- **Nowadays research groups are big and highly interdisciplinary**  
⇒ disputes on authorship rights may arise
- **Good authorship practice:**
  - All persons named as authors should have made a substantive contribution to the work reported
  - Authors should not allow the use of their name merely to add credibility to the work
  - Minor contributions should be acknowledged in the paper –  
– usually not necessarily as a co-author

## 4. Authorship (cont.)

(Shamoo and Resnik, 2009)

(<http://www.parint.org/isajewebsite/tutorials.htm>)

### Unethical practices associated to authorship:

- **Gift authorship**

Is a person listed as an author as a personal or professional favor (or develop reciprocal arrangements...)

- **Honorary authorship**

Is a person listed as an author as a sign of respect or gratitude

- **Prestige authorship**

Is a person with prestige in the field listed as an author to give more impact or visibility to the publication

- **Ghost authorship**

A ghost writer used to write the manuscript, not involved in the research (he is not in a position to take public responsibility for the work)

⇒ **All these issues should be discussed and consensualised within the research group**

## Bibliography

- Shamoo, A. and Resnik, D., Responsible Conduct of Research, 2nd ed.; Oxford University Press: New York, 2009.
- Academic Integrity at MIT – a Handbook for Students  
<http://integrity.mit.edu> (accessed on 24 January, 2014)
- Stenius, K., Publication Ethics, Workshop on Scientific Integrity and Ethical Issues, AIDS Conference, July 18-23 (2010), Vienna, Austria
- <http://www.parint.org/isajewebsite/tutorials.htm> (accessed on 24 January, 2014)
- <http://www.plagiarism.org/> (accessed on 24 January, 2014)
- Citation Guide – Williams College Libraries  
<http://library.williams.edu/citing> (accessed on 27 January, 2014)
- Nature Publishing Group: Scientific Papers  
<http://www.nature.com/scitable/topicpage/scientific-papers-13815490>  
(accessed on 27 January, 2014)



***Thank You !***