

# Ethics in scientific writing

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# Ethics in scientific writing

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This presentation is mainly based on the article: **Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing** by Roig, M. (2015).

# Ethics in scientific writing

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Scientific writing demands:

- Clarity
- Conciseness
- Accuracy
- Integrity

**Intentional** lapses in **integrity**, even seemingly minor, are by far most serious type of problem.

# Ethics in scientific writing

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- **Truth** and **trustworthy results** are the 'backbone' of scientific research (Masic 2012).
- Ethical writing is: **clear, accurate, fair** and **honest** (Kolin 2002).
- There are three types of scientific misconduct; **falsification, fabrication** and **plagiarism**.

# Plagiarism

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- **Plagiarism** is taking over the ideas, methods, images or written words of another, without **acknowledgement** and with the **intention** that they be taken as the work of the deceiver (American Association of University Professors, 1989).
- Plagiarism is the most serious violations of the contract between the **reader** and **writer**.
- The reader assumes that the author is the **sole originator** of the written work, that any text or ideas borrowed from others are **clearly identified** as such by established scholarly conventions.

# Plagiarism

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There are **two** major types of plagiarism in scientific writing: plagiarism of **ideas** and plagiarism of **text**.

Plagiarism of ideas:

Appropriating an **idea** (e.g. explanation, theory, conclusion, hypothesis, metaphor, etc.) in **whole or part**, or with superficial modification without giving credit to the originator.

# Plagiarism

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## Example

The number of species found on an undisturbed island is determined by immigration and extinction (Theory of island biogeography, MacArthur and Wilson 1967).

The number of species found on an undisturbed island is determined by degree of isolation, size of island, immigration, extinction and human activity.

# Plagiarism

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Plagiarism of text is copying a portion of text from another source **without giving credit** to its author and without enclosing the borrowed text in **quotation marks**.

Any verbatim (word-for-word) text taken from another author must be enclosed in **quotation marks**.

Plagiarism of text is probably the most common type of plagiarism.

# Plagiarism

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- **Digitalization** has made copy-paste plagiarism and inappropriate re-use of sources from websites, online journals and other electronic media widespread (Masic 2012).
- An ethical writer always **acknowledges** the contributions of others and the source of his/her ideas.

# Plagiarism

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- Plagiarism detecting softwares are now available. The University of Helsinki uses the Urkund software.
- At present, all MSc theses at the University of Helsinki should be checked for plagiarism with the Urkund system.

# Plagiarism

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Mosaic: Borrowing the ideas and opinions from an original source and a few verbatim words or phrases **without crediting the original author**. In this case, the plagiarist intertwines his or her **own ideas and opinions** with those of the original author, creating a '**confused plagiarized mass**'.

We must always acknowledge every source that we use in our writing; whether we **paraphrase** it, **summarize** it, or **enclose it in quotations**.

# Paraphrasing and Plagiarism

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When paraphrasing and/or summarizing others' work we must reproduce the **exact meaning** of the other author's ideas or facts **using our words** and **sentence structure**.

In order to make substantial modifications to the original text that result in a proper paraphrase, the author must have a **thorough understanding** of the **ideas** and **terminology** being used.

# Plagiarism and common knowledge

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- If the material we are discussing is assumed to be known by the readership, then one need **not cite its origin**.
- The question of whether the information we write about constitutes **common knowledge** is **not** always easily answerable.
- When in doubt as to whether a concept or fact is common knowledge, provide a citation.

# Self plagiarism

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- ❑ Self plagiarism is the publication of what is essentially the same paper in **more than one journal**, but without any indication that the paper has been published elsewhere.
- ❑ Between **10% to 20%** of the biomedical literature is redundant publications (Jefferson 1998).
- ❑ Authors who submit manuscript for publication containing data, reviews, conclusions, etc. that have already been disseminated in significant manner must **clearly indicate** to the editors and readers the nature of their previous dissemination.

# Self plagiarism

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- ❑ If an author reuses his/her own published text, **quotation marks** should enclose the recycled text with a **citation** to the primary source (Masic 2012).
- ❑ Redundant publication may be acceptable, when an article published in one language is translated into a **different language** and published in a different journal.
- ❑ In such and other cases where redundant publication is being considered by the author, the editors and the readers of each paper must be made aware that a second published version exists.

# Salami slicing - data fragmentation

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- **Salami slicing** is the segmenting of a large study into two or more publications.



Source: <http://yaymicro.com>

- **Data augmentation** occurs when a researcher publishes a study and subsequently collects additional data, which typically end up strengthening the original effect, and publishes the combined results as a **new study**.

# Salami slicing - data fragmentation

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If the results of a single complex study are best presented as a '**cohesive**' single whole, they should not be partitioned into individual papers. Similarly **old data** that has been merely augmented with additional data points and that is subsequently presented as a **new study** is an equally serious ethical breach.

# Copyright infringement and plagiarism

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- In redundant and salami publications data or text appearing in one copyrighted publication will also appear in another publication whose **copyright** is owned by a different entity.
- The typical arrangement for papers published in journals is for the copyright of the author's work to be transferred to the publisher of the journal. The journal can then reproduce and distribute the **author's work legally**.

# Copyright infringement and plagiarism

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- In the case of “**Open Access**” journals (freely available to the public without expectation of payment), the author agrees to allow for the free dissemination of his/her works without prior permission.
- Authors are strongly encouraged to become familiar with basic elements of copyright law.

# Unconscious plagiarism

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- 'Unconscious plagiarism' refers to the notion that individuals previously exposed to others' ideas will often remember the idea, but not its source, and mistakenly believe that they themselves originated the idea.
- Idea claimed by its author to be completely original, may have actually been articulated by someone else.
- Authors quote from a source and, in careless oversight, fail to fully credit the source.

# Fabrication

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- ❑ Fabrication is the intentional act of **making up data** or **results** and recording or reporting them.

## Examples of fabrication

- ❑ A researcher completing a questionnaire for a fictitious subject that was never interviewed.
- ❑ The creation of a data set for an experiment that was never actually conducted.
- ❑ The practice of adding fictitious data to a real data set collected during an actual experiment for the purpose of providing additional **statistical validity**

(Source: <http://orei.unimelb.edu.au/>).

# Falsification

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- **Falsification** is manipulating research materials, equipment, or processes, or changing or omitting/suppressing data or results without scientific or statistical justification, such that the research is not accurately represented in the research record.
- **Cooking** is retaining and reporting only the data that fits the theory and discarding others.
- **Trimming** is the smoothing of irregularities to make the data look more accurate and precise than they really are (Source : Ullman 2008).

# Citation ethics

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- Authors should ensure that all elements of a citation are derived directly from the **original paper**, rather than from a citation that appears on a secondary source. Authors should also ensure that credit is given to those authors who first reported the phenomenon being studied.
- Ethical writers have a responsibility to cite all relevant material, even work that may **contradict** our own point of view. Failure to do so compromises our **objectivity**.

# Citation ethics

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- References are thought to be inappropriately manipulated occurs when authors intentionally cite their **own articles**, regardless of their **relevance**.
- The references used in a paper should only be those that are directly related to its contents. The intentional inclusion of references of questionable relevance for purposes of manipulating a journal's or a paper's impact factor is an **unacceptable** practice.

# Citation ethics

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When appropriate, authors have an ethical responsibility to report evidence that **runs contrary** to their point of view. In addition, evidence that we use in support of our position must be **methodologically sound**. When citing supporting studies that suffer from methodological, statistical, or other types of shortcomings, such flaws must be pointed out to the reader.

# Authorship and conflicts of interest

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Questions related to authorship are:

- 1) Which members of a research team merit authorship?
- 2) Who is designated as senior author (first author) of the article? And
- 3) How is the rest of the authorship order determined?

# Authorship and conflicts of interest

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- Authorship determination should be discussed **prior to** commencing a research collaboration and should be based on established guidelines.
- Only individuals that make **substantive intellectual contributions** to the project should be listed as authors and the **order of authorship** should be based on the degree of importance of each author's contribution to the project.

# Authorship and conflicts of interest

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- Authorship entails the ability to **publicly take responsibility** for the contents of the project (e.g., to be able to present it in a formal forum).
- **Honorary** or **courtesy** authorship assigned on the basis of some leadership position must also be avoided.
- Faculty-student collaborations should follow the same criteria to establish authorship.

# Ghost authorship

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- **Ghost authorship** occurs when a written work fails to identify individuals who made significant contributions to the research and writing of that work.
- Ghost authorship is ethically **unacceptable** because the reader is misled as to the actual contributions made by the named author.

# Acknowledgements

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- Recognize those who have contributed to the research but not sufficiently to be considered as an author:
  - Technical assistants
  - Local people who contributed information
  - People who commented on the draft paper
  - Reviewers (anonymous or not), depending on their contribution
  - People who contributed ideas
  
- Don't forget to acknowledge funding agencies or sponsors!

# Authorship and conflicts of interest

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- ❑ A conflict of interest occurs when an investigator's relationship to an organization affects, or gives the appearance of affecting, his/her **objectivity** in the conduct of scholarly or scientific research.
- ❑ Some conflicts of interest are **unavoidable** and having a conflict of interest is not in itself **unethical**.
- ❑ Authors must become **aware** of possible conflicts of interest in their own research and to make every effort to **disclose** those situations that may pose actual or potential conflicts of interest.

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