

Fair Usage and Citation in Academic Reports: What is Plagiarism and How to Avoid It

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August 14, 2015

1 What is plagiarism?

For anybody who begins to write together a (not only) scientific article, it is accepted that one is not writing in isolation. Hence most scientific texts have the equivalent of “previous findings”, “background” or “introduction”. This usually ends up being a series of references to ideas, data and concepts that have been proposed, with the appropriate sources.

The Merriam Webster dictionary of American english defines ‘**plagiarize**’ as “to steal and pass off (the ideas or words of another) as one’s own : use (another’s production) without crediting the source” (transitive verb) or “to commit literary theft : present as new and original an idea or product derived from an existing source” (intransitive verb) (1). The Cambridge University, U.K. in its university-wide statement on plagiarism states “*Plagiarism is defined as submitting as one’s own work, irrespective of intent to deceive, that which derives in part or in its entirety from the work of others without due acknowledgement. It is both poor scholarship and a breach of academic integrity*” (4).

Particularly in academic settings where **original and novel ideas, concepts and results** are expected, this is a serious issue. Any attempt to brush it under the carpet, can lead in the mildest case to a loss of reputation, and in the worst case a loss of livelihood, even legal action and in extreme cases imprisonment. And all other usage has to be properly cited. In the following sections I will outline examples of plagiarism and how to avoid it.

2 Kinds of plagiarism

The various kinds of obvious and not-so-obvious forms of plagiarism with examples are listed below. What each of them has in common is that they are a form of **copying**- using the language or wording used by some other person or persons, which could include **IDEAS** - and **giving the appearance (pretending)** as if they are the authors own.

2.1 Copy-pasting with occasional changes without citation

When small/capital, full-form/short-form and occasional transposition of word is used.

Original

One surprising result of our study is that the global search by a low-copy-number TF for its site is slow. This result goes against previous estimates for the search time (10, 13, 37, 38) that predominantly used either unrealistically high diffusion coefficients and/or assumed that the fraction of time spent on DNA (or the sliding length) is optimized for fastest search. (2).

Reference:

(2) Kozlovski, G., Zwiebel, B. and Leichtwunder, Z. (2007) Genes are influenced by biophysics. Proceedings of Abkhazia. Vol. 104 (35), p13948-13953.

Plagiarism

One surprising result of our study is that the global search by a low-copy-number **Transcription Factor** is slow. This result goes against previous estimates for the search time (10, 13, 37, 38) that predominantly used either unrealistically high diffusion coefficients and/or assumed that the fraction of time spent on DNA (or the sliding length) is optimized for the fastest search.

Correct usage

This can be in at least two forms:

1. **Using quotation marks- so no assumption of originality is made:**

Kozlovski et al. (2) surprisingly find that “the global search by a low by a low-copy-number TF for its site is slow. This result goes against previous estimates for the search time (10, 13, 37, 38) that predominantly used either unrealistically high diffusion coefficients and/or assumed that the fraction of time spent on DNA (or the sliding length) is optimized for fastest search”.

Reference:

(2) Kozlovski, G., Zwiebel, B. and Leichtwunder, Z. (2007) Genes are influenced by biophysics. Proceedings of Abkhazia. Vol. 104 (35), p13948-13953.

This method is very clumsy. Imagine reading a paragraph full of quoted text. So while this is technically ‘correct’, it is bad form and not expected from a writeup.

2. **A much better way is to paraphrase, as follows:**

The “global search” by a small number of transcription factors for their binding site has been shown by Kozlovski et al. to be slower than previously thought (2).

Reference:

(2) Kozlovski, G., Zwiebel, B. and Leichtwunder, Z. (2007) Genes are influenced by biophysics. Proceedings of Abkhazia. Vol. 104 (35), p13948-13953.

2.2 Copy pasting with minor changes while including citation

Neither quotation marks nor a complete reference are provided, even though the real author(s) are acknowledged.

Original

One surprising result of our study is that the global search by a low-copy-number TF for its site is slow. This result goes against previous estimates for the search time (10, 13, 37, 38) that predominantly used either unrealistically high diffusion coefficients and/or assumed that the fraction of time spent on DNA (or the sliding length) is optimized for fastest search. (2).

Reference:

(2) Kozlovski, G., Zwiebel, B. and Leichtwunder, Z. (2007) Genes are influenced by biophysics. Proceedings of Abkhazia. Vol. 104 (35), p13948-13953.

Plagiarism

We find for the first time that the global search as studied by Kozlovski et al. in a low-copy-numbers of transcription factors is slow. This result goes against previous estimates for the search time (10, 13, 37, 38) that predominantly used either unrealistically high diffusion coefficients and/or assumed that the fraction of time spent on DNA (or the sliding length) is optimized for the fastest search.

Correct usage: Paraphrase.

The “global search” by a small number of transcription factors for their binding site has been shown by Kozlovski et al. to be slower than previously thought (2).

Reference:

(2) Kozlovski, G., Zwiebel, B. and Leichtwunder, Z. (2007) Genes are influenced by biophysics. Proceedings of Abkhazia. Vol. 104 (35), p13948-13953.

2.3 Using ideas from somebody else's work without citation

Here even in the absence of a copy-paste verbatim reproduction, it still constitutes plagiarism if there is no clear and obvious citation to the original originator of the idea. This can still be considered inappropriate, since even if the text has been paraphrased, **the citation is missing**, hence giving the impression of being original work.

Original

One surprising result of our study is that the global search by a low-copy-number TF for its site is slow. This result goes against previous estimates for the search time (10, 13, 37, 38) that predominantly used either unrealistically high diffusion coefficients and/or assumed that the fraction of time spent on DNA (or the sliding length) is optimized for fastest search. (2).

Reference:

(2) Kozlovski, G., Zwiebel, B. and Leichtwunder, Z. (2007) Genes are influenced by biophysics. Proceedings of Abkhazia. Vol. 104 (35), p13948-13953.

Plagiarism

Low-copy-numbers transcription factors (TF) are found to slowly search for binding sites globally, contradicting previous measures of search time.

Correct usage

Kozlovski et al. have shown that low-copy-numbers transcription factors (TF) are found to search for binding sites globally at slower speed than previously reported (2).

Reference:

(2) Kozlovski, G., Zwiebel, B. and Leichtwunder, Z. (2007) Genes are influenced by biophysics. Proceedings of Abkhazia. Vol. 104 (35), p13948-13953.

2.4 Submitting somebody else's work as one's own

Such situations can arise when a candidate/student/author has used work done by somebody else either a colleague or found on websites online, copy-pasted en-bloc but merely changed the authorship, to make it appear as if the report was his/hers. This could also be in the case of collaborative work to leave out others who had collaborated from obvious mentions in the authorship or acknowledgements. If substantial help in conception, work or ideas has been received, this should be clearly acknowledged in the text.

3 Materials that can be plagiarized

Computer programs (code), text, images, illustrations, derivations of mathematical expressions, web-downloaded media, manuscripts, pre-publication articles, published and un-published materials and lecture handouts and other students works.

4 Avoiding plagiarism

Depending on the nature of the material prepared (talk, thesis, research paper, research-report, term-paper, etc.) the specific guidelines will vary in detail. Additionally, specific guidelines exist for research paper submissions. The following note however concerns itself with the classroom and written-report scenarios, while maintaining the generality of guidelines.

1. previous work to be introduced with a complete citation with full details so a reader may trace it back. Formats for citations vary.
2. quoting text word-for-word (verbatim) requires the quoted text be placed in inverted commas (“...for spherical particles moving in a medium of proportionately small molecules, Stokes law has shown that a hydrodynamic relation holds (5)”) and a clear citation provided
3. if a figure, image, graph or dataset has been used in your work, include the reference to the original work in the figure legend. For example: *Fig. 1. Figure redrawn from Miller et al. (1924).*
4. if multiple authors (as part of a collaborative piece of work) have contributed, these must all be acknowledged in the introductory section, author list, or acknowledgement, depending on the nature of the contribution.

A good “rule of the thumb” is that the reader/examiner should have no doubts in their minds which part of your presentation is your work, and which is the rightful property of somebody else.

5 Acknowledgements

This article is based heavily on the excellent guide on “The Plague of Plagiarism” by Prof. Hexham (3), University of Calgary, Canada and the University-wide statement on plagiarism of the Cambridge University, U.K. (4).

References

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5. Christina Cruickshank Miller (1924) The Stokes-Einstein Law for Diffusion in Solutions. Proc. Roy. Soc. Series A, Containing Papers of a Mathematical and Physical Character. Vol. 106(740), p724-749.