

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

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1 What is plagiarism?

For anybody who begins to write together a (not only) scientific article in written form, 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) Kolesov, G. and Wunderlich, Z. and Laikova, O. N. and Gelfand, M. S. and Mirny, L. A. (2007) How gene order is influenced by the biophysics of transcription regulation. Proc. Natl. Acad. Sci. U.S.A. 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

Kolesov 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”.

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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).

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Plagiarism

We find for the first time that the global search as studied by Kolesov 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

We observe that Kolesov 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”.

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(2) Kolesov, G. and Wunderlich, Z. and Laikova, O. N. and Gelfand, M. S. and Mirny, L. A. (2007) How gene order is influenced by the biophysics of transcription regulation. Proc. Natl. Acad. Sci. U.S.A. Vol. 104 (35), p13948-13953.

2.3 Using ideas from somebody else’s work without citation

Here even if verboten copy-paste has not been done, 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) Kolesov, G. and Wunderlich, Z. and Laikova, O. N. and Gelfand, M. S. and Mirny, L. A. (2007) How gene order is influenced by the biophysics of transcription regulation. Proc. Natl. Acad. Sci. U.S.A. 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

We observe that Kolesov et al. (2) surprisingly find that low-copy-numbers of transcription factors (TF) are found to slowly search for binding sites globally, contradicting previous measures of search time (10, 13, 37, 38).

Reference:

(2) Kolesov, G. and Wunderlich, Z. and Laikova, O. N. and Gelfand, M. S. and Mirny, L. A. (2007) How gene order is influenced by the biophysics of transcription regulation. Proc. Natl. Acad. Sci. U.S.A. 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). Additional inputs are acknowledged from XX and YY.

References

1. Merriam-Webster, Encyclopedia Britannica m-w.com.
2. Kolesov, G. and Wunderlich, Z. and Laikova, O. N. and Gelfand, M. S. and Mirny, L. A. (2007) How gene order is influenced by the biophysics of transcription regulation. Proc. Natl. Acad. Sci. U.S.A. Vol. 104 (35), p13948-13953.
3. Hexham, I. The plague of plagiarism. from Essays in Plagiarism. [original text](#)
4. Statement of the General Board of Cambridge University with agreement of it’s Board of Examinations and Board of Graduate Studies [University-wide statement on plagiarism](#) June 2011.
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.