Avoiding Plagiarism

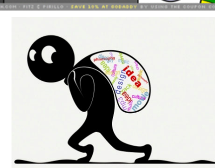
pressureUA:istockphoto.com

Vidya Madhavan S. Lance Cooper, Brian DeMarco, and Celia M. Elliott
Department of Physics
University of Illinois at Urbana-Champaign

1

Consequences of plagiarism

- Fail assignment
- Fail class
- Loss of job opportunities
- Fired from job
- Loss of reputation



Be a great scientist! Don't steal ideas or words.

Don't be intellectually lazy

https://prezi.com/q5pllu8g9fe7/plagiarism-and-copyright/

2

Plagiarism

Giving the *impression* that someone else's words, ideas, figures, etc. belong to you.

3

Dictionary*

pla·gia·rism

/ˈplājəˌrizəm/

noun

1.the practice of taking someone else's work or ideas and pass them off as one's own.

"there were accusations of plagiarism"

Similar:

copying
piracy
theft
stealing
poaching
appropriation

*Definition from Oxford Languages

4

Avoiding plagiarism 101

Never copy phrases longer than 3-4 words

Never copy phrases longer than 3-4 words

Providing a citation to a bibliographic entry or footnote does not make copying words OK

Includes:

- Figure captions
- Text from published paper
- Text from paper you are working on with advisor
- Websites

5

What about direct quotes?

Professor Hughes said "Never copy phrases longer than 3-4 words."

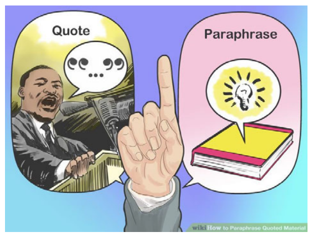
Uncommon in technical writing

You can only quote words that someone said in person, in an email, text message, over the phone, or in a letter to you.

6

(1) Sometimes you need to report someone else's content, so you…

Paraphrase



https://cdn.brainpop.com/english/writing/paraphrasing

"…express the meaning of (the writer or speaker or something written or spoken) using different words, especially to achieve greater clarity."

7

Rules for paraphrasing

The paraphrase must be entirely in your own words;* if you reproduce words or phrases exactly, you must put them in quotes

Preserve the original author's meaning; don't take ideas out of context

Use your own vocabulary and sentence structure; don't mechanically "translate" word-for-word from the original

Paraphrase to simplify or clarify the original material

Paraphrase to make your paper's style and tone consistent

CITE THE SOURCE!

***except for technical terms, proper nouns, and ancillary words (articles, conjunctions, prepositions)**

Adapted from Robert A. Harris, *Using Sources Effectively*, 2nd ed. (Glendale, CA, Pyrczak Publishing, 2005).

8

Do your job as an author

Deconstruct, interpret, digest, understand, distill, infer, deduce, put into context → *think critically*

Don't just patch together others' ideas in a hodge-podge of unoriginal thought

Regurgitation is not science, it's sewing

9

(2) What is "common knowledge" and do I have to cite it?

"Common knowledge" is what an educated person would know, could easily observe for himself, or could readily find in a textbook or encyclopedia

Common knowledge usually does *not* have to be cited

BUT—"common knowledge" is context-dependent

When in doubt, CITE!

10

Table of Citations

Must cite someone else's:
- exact words
- original ideas (concepts, interpretation, opinions, conclusions)
- data
- images (photos, cartoons)
- examples or analogies
- experimental procedures
- descriptions of apparatus or phenomena
- solutions (codes, algorithms)
- digital recordings
- felicitous phrases ("boson birthday paradox")

Do not cite your own 100% original:
- exact words
- original ideas
- data
- images
- examples or analogies
- experimental procedures
- descriptions of apparatus or phenomena
- solutions
- felicitous phrases

But beware of self-plagiarism!

11

Myths about plagiarism that can get you into trouble

WWW myth: everything on the Internet is common knowledge, so I can use it without attribution

Converted words myth: because I completely rewrote the source's words, the words and ideas are now my own, and I don't have to cite the original source

Inconsequential theft myth: I copied fewer than 7 words, so I don't have to cite the source

Words-only myth: I just reproduced the figure or the table, but I didn't copy any words, so it's not plagiarism

Named-source myth: I mentioned the author's name or the source of the figure in the text, so I can reproduce words verbatim

Adapted from Robert A. Harris, *Using Sources Effectively*, 2nd ed. (Glendale, CA, Pyrczak Publishing, 2005).

12

Plagiarism: Case Study*

While classical melting in two-dimensional systems is reminiscent of the phase behavior observed as a function of pressure in this material, an important qualification should be made with respect to this comparison. In contrast to the examples described above, the melting process observed in *1T*-$TiSe_2$ is quantum mechanical in nature, in that it is driven near $T = 0$ K by pressure tuning the competing interactions in this system. To understand the nature of this competition, note first that the zero-pressure charge density wave (CDW) state in *1T*-$TiSe_2$ is unconventional, as it arises from an indirect Jahn-Teller interaction that splits and lowers the unoccupied conduction band. As a result of the electron-hole interaction between the conduction and valence bands, the lowering of the split conduction band ‘‘repulses’’ and flattens the valence band, resulting in a lowering of the system’s energy, and the formation of a small gap CDW state.

From: C.S. Snow et al., Phys. Rev. Lett. 91, 136402 (2003)

*S.L. Cooper, PHYS 496, 2008.

13

Original:

While classical melting in two-dimensional systems is reminiscent of the phase behavior observed as a function of pressure in this material, an important qualification should be made with respect to this comparison.

In contrast to the examples described above, the melting process observed in *1T*-$TiSe_2$ is quantum mechanical in nature, in that it is driven near $T = 0$ K by pressure tuning the competing interactions in this system.

To understand the nature of this competition, note first that the zero-pressure charge density wave (CDW) state in *1T*-$TiSe_2$ is unconventional, as it arises from an indirect Jahn-Teller interaction that splits and lowers the unoccupied conduction band.

As a result of the electron-hole interaction between the conduction and valence bands, the lowering of the split conduction band ‘‘repulses’’ and flattens the valence band, resulting in a lowering of the system’s energy, and the formation of a small gap CDW state.

Edited:

The phase behavior observed as a function of pressure in *1T*-$TiSe_2$ is similar to classical melting in 2D materials.

However, in contrast to classical melting, the melting process seen in *1T*-$TiSe_2$ is governed by quantum mechanics, as it the result of tuning the competing quantum mechanical interactions with pressure near $T = 0$ K.

An examination of the unconventional charge density wave (CDW) in *1T*-$TiSe_2$ state helps elucidate this competition—the CDW state in *1T*-$TiSe_2$ is caused by an indirect Jahn–Teller interaction that lowers the unoccupied conduction band relative to the filled valence band.

Because there is a strong electron-hole interaction between the conduction and valence bands in this material, this lowering of the conduction band causes a ‘‘repulsion’’ and flattening of the valence band, which results in a lowering of the system’s energy and the formation of a small CDW small gap.

14

Is the edited version plagiarism?

YES IT IS!

Although the words and ordering have been altered, the essential meaning remains the same

Credit has not been given to the original author of these ideas

15

Will adding a citation make this example acceptable?

Context dependent

And, opinions vary!

16

PS: How are papers/sources cited?

Spin chains in one-dimension (1D) have been used as a prototype system to study quantum mechanical phenomena in lower dimensions due to their simplicity, integrability and scalability. Their 1D nature can enhance correlation effects leading to exotic quasiparticles due to spin-charge separation [1-2] as well as Majorana edge states [3-4] when coupled to a superconductor.

1) T. Giamarchi, Quantum Physics in One Dimension (Clarendon, 2004).
2) C. Kim et al. Observation of Spin-Charge Separation in One-Dimensional SrCuO2. Phys. Rev. Lett. 77, 4054–4057 (1996).
3) S. Nadj-Perge, I. K. Drozdov, B. A. Bernevig, A. Yazdani. Proposal for realizing Majorana fermions in chains of magnetic atoms on a superconductor. Phys. Rev. B 88, 020407 (2013)
4) Nadj-Perge, S. et al. Observation of Majorana fermions in ferromagnetic atomic chains on a superconductor. *Science* 346, 602–607 (2014)

17

17

Keep out of trouble—label your notes!

Write the full bibliographic citation on each note; include chapter and page numbers for books

Put quotation marks around anything you copy verbatim, and include the citation

Code paraphrases [P] in your notes so you don't confuse them with your own original ideas, and include the citation

Code summaries [S] in your notes so you don't confuse them with your own original ideas, and include the citation

Experiment with different labeling methods to find one that works for you

Adapted from Robert A. Harris, *Using Sources Effectively*, 2nd ed. (Glendale, CA, Pyrczak Publishing, 2005).

18