

"Plagiarism" is any time you use someone else's work without acknowledging whose it is. When you write or present something, the audience assumes that everything is your own work, except where you indicate that it's not your work. Therefore, if you use something you got from somebody else, and you don't explicitly state where you got it from, then the audience may assume that you are trying to pretend it was your own work (even if that was not your own intention).

To make it clear what is your work and what is not, you have to clearly follow writing standards. Putting a citation in parentheses at the end of a sentence or paragraph is widely understood to mean that the *idea* comes from the source; if you put a citation to show that the idea comes from another source, people will still assume you are expressing the idea in your own words. Therefore, if you copy an exact sentence from another source and put it in your paper, you need to put it in quotation marks; otherwise, even if you use a citation to show that the idea came from elsewhere, you might be accused of plagiarism for using the other author's *words* and presenting them as if they were your own.

Note that I said plagiarism involves using other people's *work*, not just their *language*. It is possible to plagiarize even if you don't copy somebody's exact language. Someone else's "work" might mean figures or graphics they made. It might mean the work they did to summarize and organize literature—if there is a research topic with 100 papers written about it, and some author has picked out the most important 3 and summarized them in some particular order to

show how they relate to each other, and then you summarize the same three papers in the same order (even if you don't copy the other author's exact words), then you must say something to indicate who had the idea to focus on these three papers, if you were not the one who did the work to determine that these three papers are the most important ones in the field.

Copying language does not always mean exact copying. For example, imagine that somebody writes a sentence which you think is good, but you know you can't copy it word-for-word. So you take their sentence, and then you replace each word with a synonym, and then you use your new sentence in your own paper without indicating that it was edited from their sentence. Now the sentence does not exactly match theirs, but it would still be plagiarism, because your work is based on their work which you have not acknowledged.

In general, I recommend not writing like that. If there is a really good sentence, just quote it and clearly indicate where it came from. But usually it is not necessary to use someone else's wording. There are some rare cases where the specific words an author used to express an idea are very important and we want to talk about those words; but most of the time, what is really relevant to your paper is the author's idea, not the words they used to express that idea. So, it's best if you can re-express the idea in your own words, rather than quoting or paraphrasing the original author.

Finally, plagiarism is not the same thing as similarity. Some tools, like Turnitin, report a "similarity percentage". If you think about how Turnitin calculates similarity, and think about what I've said about

plagiarism above, you will probably notice that it's possible for a paper to have 0% similarity but lots of plagiarism. It's also possible for a paper to have a high similarity percentage and no plagiarism. Therefore, Turnitin similarity percentages are not relevant to the issue of plagiarism; Turnitin is just a tool to help people find plagiarism, but it's never proof that there is or is not plagiarism. Some other teachers may tell you that percentages above or below a certain number (like 15%) count or do not count as plagiarism; this is not true, and similarity percentages should never be used in that way.

Let me close with three recommendations to follow and pitfalls to avoid, to minimize the chance of getting in trouble for plagiarism:

1. Do your writing *without* looking at the other articles while you write. If you are writing your essay and you have the other articles sitting next to you, there will be a strong temptation to look at their wording while you write. I prefer to write a different way. I read the articles and think about what I want to say about them, then I *put them away and don't look at them* for at least 24 hours, before I start writing my own essay. I also don't look at them while I'm writing my essay. That way, I can avoid the temptation to copy; I can also make sure that, when I discuss the articles, I am talking about the most important parts (the parts that were important enough for me to remember 24 hours later, after my mind had time to organize the information better) and not the unimportant parts.

2. Sometimes students copy some sentences from other papers while they are preparing their initial rough draft or outline, with the intention to reword those sentences later as they finalize their paper. Definitely do not do that. First of all, it generally does not result in good writing. Secondly, it puts you at high risk of plagiarism: a few hours or days after you started, you might forget which parts of the paper are your original writing and which parts came from elsewhere, and you might forget to reword the parts that came from elsewhere. And even if you don't forget to reword, you might still be plagiarizing – remember that, as described above, using someone else's writing and replacing some words is still plagiarism.
3. Don't worry about sounding "scientific" or "professional". In my experience, the two biggest causes for students to plagiarize (either intentionally or accidentally) are the one above (forgetting to reword something) and this one. Sometimes students understand a concept, but feel that they need to use the kind of technical language they see in other papers, because they are afraid that writing about a complicated scientific concept in simple language would not sound "academic". Don't fall for this trap. Writing about a complicated concept in simple language is perfect; it's the best and most impressive way to show that you understand a concept. I believe that if you really understand something, you should be able to explain it in simple language; if I think I understand a concept but I can't explain it simply, that means I don't actually understand it as well as I think I did. Therefore, using technical language

doesn't make you look smarter; using very simple language makes you look smart. Using technical language only makes you look like you couldn't understand the concept so you had to copy other papers' technical language. And trying to sound "technical" by copying other papers will get you in trouble for plagiarism. My recommendation is that you should check your writing with what I call the "auntie-and-uncle test": if you show your writing to an auntie or uncle (or a friend) who did not take this class, can they understand it? If they can't understand it, ask them what parts were confusing, and try to write that part in more simple terms. If you can explain some advanced concept to an auntie or uncle who is not an expert, then that will show me that you really understand it well.

To test your understanding of plagiarism, do the exercise below. On the following pages of this document, I have included four fake writing samples. Each one shows a "Source" (an original paper) and a "New paper" (some writing I made for my own paper). For each writing sample, decide whether or not you think the new writing sample has plagiarism, and explain why you made this decision.

*Source:*

The implicit understanding is that nature's rules are eternal, unbreakable, and all-controlling. As Albert Einstein once said, learning to read the laws of physics is like reading the mind of God. Such thinking has animated much of the enterprise of physics ever since Isaac Newton formulated his laws of universal gravitation in 1687: one set of laws for both the heavens and the earth. The idea took full root a century ago, when Einstein developed his general theory of relativity. If we work hard enough, he suggested, we will eventually find the elegant and simple rules that undergird the entire universe. Physicists have taken it as an article of faith that the bedrock laws are there to be discovered, if only we are clever enough in looking for them. The dogged pursuit of that ultimate truth has led to many great discoveries, but recently it has begun to seem like a promise unkept.

*New paper:*

It is implied that nature's rules are eternal, unbreakable, and all controlling. Ideas like these have fueled much of the physics field since Isaac Newton had formulated his laws of universal gravitation in 1687. His concepts took root approximately a century ago, when Einstein had also developed his general relativity theory. However, careful scrutiny of the so called "book of physics" and the pursuit of this truth has led to many great physics discoveries, but unfortunately has begun to seem like an unkept promise in the clear understanding of our universe.

*Source (Bauer, 2006):*

Of all the various Chinese topolects or dialects that have been or are now being spoken, none has had longer and more intimate contact with the English language than the southern dialect of Cantonese. Just over 300 years ago their contact relationship began when the early British traders arrived in Guangzhou (Canton) to exchange silver for Chinese tea, porcelain, silk, and other goods. Today the most visible and concrete effect of English influence on Cantonese shows up in the Hong Kong Cantonese lexicon into which hundreds of English words have been borrowed.

*New paper:*

Traditionally, one of the major questions in the study of bilingualism is whether bilinguals store their knowledge of the two languages in two separate memory systems, or integrate the two languages and store in a combined representation (De Groot & Nas, 1991). The lexical representation of Cantonese-English bilinguals is of interest in this research because of the highly bilingual linguistic environment in Hong Kong since the British colonial rule from 1899. In fact, of all the various Chinese dialects, none has had longer or more intimate contact with English than the southern dialect, Cantonese (Bauer, 2006).

*Source (Politzer-Ahles et al., 2017):*

A variety of other research paradigms have shown similar costs for "before" sentences relative to "after" sentences. In behavioral experiments, sentences in which the order of mention of two events is different from the conceptual order in which they actually occurred are recalled less accurately [11], are read more slowly [12], and are re-enacted less accurately by children in some experiments [13, 14] (see, however, [15, 16]). Using ERPs, [17] finds that an N400 effect related to a truth-value manipulation was attenuated in "before" sentences compared to "after" sentences, suggesting that real-world event knowledge was recruited in a different way in the context of before compared to after. With functional magnetic resonance imaging (fMRI), [18, 19] showed greater hemodynamic activation in the caudate nucleus and left middle frontal gyrus (which, together, may be involved in maintaining and manipulating representations in working memory) for "before" sentences compared to "after" sentences in healthy adults.

*New paper:*

A similar result has been observed in many other research studies comparing "before" and "after" sentences. Behavioral experiments have found that people do not remember these sentences as accurately, do not read them as quickly, and sometimes children do not re-enact them as accurately. Furthermore, ERP studies find that the N400 effect in "before" sentences is smaller than in "after" sentences. Finally, fMRI studies showed greater activation for "before" sentences than for "after" sentences.

*Source (Luck, 2005):*

The term *ERP component* refers to one of the most important but nebulous concepts in ERP research. An ERP waveform unambiguously consists of a series of peaks and troughs, but these voltage deflections reflect the sum of several relatively independent underlying or *latent* components. It is extremely difficult to isolate the latent components to as to measure them independently, which is the single biggest roadblock to designing and interpreting ERP experiments. Consequently, one of the keys to successful ERP research is to distinguish between the observable peaks of the waveform and the unobservable latent components. This chapter describes several of the factors that make it difficult to assess the latent components, along with a set of "rules" for avoiding misinterpreting the relationship between the observable peaks and the underlying components.

*New paper:*

Clearly an ERP waveform is made up of a series of peaks and valleys, but these voltage changes show the sum of multiple independent underlying components (Luck, 2005). This means that an obvious peak in the ERP wave doesn't necessarily indicate the peak of some cognitive activity; the ERP peak might be made up of the average of multiple peaks of cognitive activity (or positive and negative peaks that partially cancel one another out).