

A brief primer on Academic Integrity for UCSC Students or Why cheating drives professors nuts & makes students cry (and how to avoid both)

Gregory S. Gilbert (Environmental Studies) & Ingrid M. Parker (Ecology and Evolutionary Biology), University of California, Santa Cruz

All UCSC undergraduates, graduate students, and faculty are expected to maintain the highest standards of academic integrity. Yet all too often (nearly every quarter) we end up having to report students for serious violations of academic integrity. The official rules and procedures for reporting violations of academic integrity are laid out clearly and widely posted (see https://www.ue.ucsc.edu/academic_misconduct). Following these procedures (which we always do) leaves professors feeling disappointed in the students, annoyed at having to spend a minimum of 4-5 hours documenting the violation, processing required paperwork, meeting with students, and talking with Provosts), and nearly always leaves students in tears, frustrated, angry, afraid, and disappointed in themselves.

Although the official guidelines are great on process, they do little to explain exactly what *is* academic integrity, and the number of problems we encounter suggest that too many students aren't quite clear on the concept. So we thought a straight-forward primer, with examples, might help.

At its core academic integrity means (1) doing your own original work, (2) presenting your work honestly, and (3) acknowledging the source of ideas on which you build your work.

Violations of academic integrity generally fall into one of three broad categories.

- (1) **Cheating on exams, quizzes, and other assignments.** This one is pretty straight forward. Unless the instructor specifically says you can work together, do your own work!
- (2) **Falsifying or misrepresenting data.** Again, this is a no-brainer. Making up data for a lab report or thesis, selectively using (real) data to support a hypothesis while ignoring contrary data, or misrepresenting how the data were acquired are all serious affronts to what scholarship is all about, and are violations of academic integrity.
- (3) **Plagiarism.** Plagiarism is presenting someone else's ideas, words, or work as your own. It is theft. It is fraud. U.S. law views recorded expression of original ideas as intellectual property, which is protected by copyright and can't be used without fair attribution to the source of the ideas or words. Just as importantly, ideas and words are the currency of scholarship, and scholarship is what universities are all about. Because no one can master all knowledge, scholarship is fundamentally a social enterprise built on the exchange of ideas, usually through writing, but also through video, recordings, and conversations. This exchange of ideas requires trust -- not usually that you will keep the the ideas secret but that when you do use them and build on them that you will clearly acknowledge the source. Conventions on how to do this vary somewhat across disciplines, but generally require (1) providing a traceable citation for the original source, (2) paraphrase the ideas using your own words when possible, or (3) indicate direct quotations with quotation marks. Students sometimes find this difficult. The following pages give examples and suggestions for how to do it effectively.

Avoid plagiarism when summarizing published scientific literature by (1) paraphrasing what is in the original text, (2) using appropriate in-text citations to clearly identify where the ideas came from. Simply changing word order or dropping a word here and there is not enough - substantial similarity is still plagiarism.

Original text

Four factors are particularly important in determining the chance that a host shift occurs: (a) the degree of dependence of the pathogen on live hosts (i.e., pathogen survival and saprotrophic abilities), (b) the degree of specialization of the pathogen, (c) the phylogenetic distance between the novel potential host and hosts with which the pathogen is familiar, and (d) the degree of ecological association between the pathogen and the potential host.

(Original text from p. 683 in Parker & Gilbert. 2004. The Evolutionary Ecology of Novel Plant Pathogen Interactions. Annual Review of Ecology, Evolution, and Systematics 35:675-700.)

Good paraphrase of text

A pathogen is most likely to be able to colonize a new host if the pathogen is not strongly dependent on live hosts for survival, if it is not highly specialized on a particular host species, if the new host is closely related to hosts the pathogen already attacks, and if the pathogen commonly encounters the new host (Parker and Gilbert 2004).

This is an appropriate re-wording of the passage, with proper in-text citation of the source from which the ideas came.

This is plagiarism

Host shift of a pathogen depends on (a) the degree of dependence of the pathogen on live hosts (i.e., pathogen survival and saprotrophic abilities), (b) the degree of specialization of the pathogen, (c) the phylogenetic distance between the novel potential host and hosts with which the pathogen is familiar, and (d) the degree of ecological association between the pathogen and the potential host.

This is the most direct form of plagiarism. It uses the original text word for word, without quotation marks. In addition, it does not cite the original source of the text. Adding quotation marks and the (Parker and Gilbert 2004) in-text citation would technically make this not plagiarism, but it would be bad form. Direct quotes should be avoided in scientific writing unless there is something special about how something is said that you are trying to convey. Just being well written does not constitute "something special."

This is plagiarism, too

According to Gilbert and Parker (2004), there are four factors that are particularly important in determining the chance that a host shift would occur. They are (1) the degree of dependence of the pathogen for the live host, (2) degree of ecological association between the pathogen and the potential host, (3) phylogenetic distance between the novel host and hosts with which the pathogen is familiar, and (4) degree of specialization of the pathogen.

Although it is not copied word for word, it very closely follows the words and sentence structure of the original, and is plagiarism. You need to re-tell it in your own words.

Some notes on avoiding plagiarism.

- **You must give credit for the sources of *ideas* that are not originally yours.** Citing the foundations on which you are building your ideas only strengthens your own work. It shows that you know what has come before you, and that you are building creatively on that foundation. In-text citations and full citations in the “literature cited” section are the way to indicate original sources.
- **You must say things in your *own words*.** Paraphrase when you are summarizing or drawing on the writings of others. The best way to do this is to read the original text until you understand it well, then put it aside and write what you think are the essential elements. Check back with the original text to make sure that (1) you represented it accurately and (2) your words are not inadvertently too similar to the original.
- **Avoid direct quotes unless there is something special about *how* the original author said it.** Sometimes there is an important turn of phrase, like Darwin’s contemplation of a “tangled bank” at the end of the *Origin of Species*, or to Leopold’s “we reached the old wolf in time to watch a fierce green fire dying in her eyes” in *A Sand County Almanac*. Direct quotes should be very rare in scientific writing, but are more common in social sciences and humanities.
- **Just because it is on the web does not mean you can claim the ideas or words as your own.** If someone puts text on the web it may make it publicly available, but (even if anonymously posted) the ideas and words they used are theirs -- not yours. Including (near) verbatim text from a web source, or using a particular set of ideas, a framework for thinking about a problem, a history of events, or specific data about a place without attribution of where you got the information is plagiarism.
- **There is a gray area in determining whether something is “common knowledge”** or whether a particular phrase is an established way to say something and can be used verbatim without citation. For instance, you wouldn’t need a citation for “Abraham Lincoln was the 16th president of the United States”, nor would you need to use quotes around “volumetric soil water content”. This requires sound judgment. If you are in doubt, ask your Professor or Teaching Assistant for guidance.
- **Ideas and work contributed by others must be acknowledged appropriately.** Class assignments are usually your own work, or sometimes a group project. But original scholarship, such as theses, dissertations, and scholarly publications, usually have a number of people who contributed ideas and work to your project -- advisors, peer reviewers, field assistants, and colleagues with whom you talk through your ideas, who offer solutions to vexing technical problems, or who provide complementary data sets to compare with your data. These contributions are sometimes acknowledged by co-authorship, sometimes in an acknowledgments section. Norms for how to do this vary among disciplinary traditions, and are not always clear. Check with your advisor and other senior researchers for advice. But what is clear is that *not* appropriately acknowledging contributions of others will inevitably damage your reputation as a trustworthy member of the scholarly community, and make it more difficult for you to participate in the exchange of ideas.

Citing published work in your writing is central to properly acknowledging the source of ideas on which you are building. Properly citing previous work that laid a foundation for your study, or similar studies that found similar or different results from yours actually *strengthen* your work, rather than detract from it. The citations put your work into a larger scholarly context and history, allow readers to quickly learn more about the topic, and shows that you have done the scholarship expected of a researcher.

Citations usually include two components.

- (1) An in-text citation that is an abbreviation or pointer to a complete citation.
- (2) A complete citation (or reference) in the *Literature Cited* / *References* endnotes (some humanities and social sciences publications use footnotes instead of endnotes).

The exact format of both the in-text citation and the complete citations differ among journals, book publishers, and professors, and you must follow the expected format in each case. Generally, the in-text citation indicates the first authors' name and the year of publication, and the complete citation gives all the information necessary for the reader to find the citation in a library. Some publications call for numbered citations, using only a number pointer for the in-text citation. In any case, follow the guidelines for your particular assignment or journal.

Here is an example, using the format of *Ecology*

Density-dependent seedling mortality near mother trees has long been thought to be important in maintaining plant diversity in the tropics (Janzen 1970, Connell 1971), but not until the work of Harms *et al.* (2000) in Panama was the magnitude of density dependence rigorously measured. Now with the advent of Neutral Theory (Hubbell 2001), the role of density dependent mortality in shaping tropical communities has gained additional scrutiny.

Literature Cited

- Connell, J. H. 1971. On the role of natural enemies in preventing competitive exclusion in some marine animals and in rain forest trees. In P. J. Boer & G. R. Graadwell, eds. *Dynamics of Numbers in Populations (Proceedings of the Advanced Study Institute, Osterbeek 1970)*. Wageningen: Centre for Agricultural Publication and Documentation, pp. 298–312.
- Harms, K. E., S. J. Wright, O. Calderon, A. Hernandez, & E. A. Herre. 2000. Pervasive density-dependent recruitment enhances seedling diversity in a tropical forest. *Nature* 404:493–495.
- Hubbell, S. P. 2001. *The Unified Neutral Theory of Biodiversity and Biogeography*. Princeton University Press, Princeton.
- Janzen, Daniel H. 1970. Herbivores and the number of tree species in tropical forests. *The American Naturalist* 104:501-527.