Description

The scientific method involves testing of a hypothesis by an experiment. If the experiment shows a result that supports the hypothesis, this is considered as positive result, worthy of publication. If the experiment does not show the expected result, this indicates that the hypothesis was incorrect. This sort of “failed” experiment is called a negative result and most journals won’t accept such results for publication. But they should. Negative results can be just as important as positive ones. Know why it is important in the following:

Negative Results give Positive Information

The Michelson–Morey experiment is the classic example of a negative result with huge scientific ramifications. The experimenters measured the speed of light in different inertial frames — in the direction of the Earth’s orbit and against it — expecting to find faster and slower speeds, respectively, as predicted by the prevailing Ether Wind theory of light propagation. Instead, they found that the speed of light was the same in every direction. This negative result caused consternation in the physics community and eventually led to the special theory of relativity. This “negative result” did as much to advance science as any “positive result.”

There are many examples of important negative studies. Years back cholesterol was fingered as a dietary villain, causing heart attacks, clogging arteries, etc. People even quit eating eggs. Doctors advised patients to cut back. The sale of egg substitutes soared. Eventually long term studies showed no correlation between egg consumption and heart disease. A negative result, but important for anyone interested in nutrition or health. The opposite sort of thing happened with dietary fiber — high amounts were supposed to prevent colon cancer, and bakeries flooded the shelves with fiber filled breads which people eagerly bought. Another false alarm. Eventually, subsequent studies found that high fiber diets did not lower cancer rates.

Preventing Wasted Effort

Reporting negative results also prevents other scientists from making the same mistake. Moreover, it saves time and efforts. For instance, once a researcher spent six months trying to synthesize an analog of a compound reported in the literature. In the middle of his efforts a paper came out describing, among other results, the failure to repeat the literature prep and casting doubt on the

original article. Had that paper come out earlier, he would have never started his work on the analog and would have saved a lot of time.

Venues for Negative Results

The publishing community is beginning to be more receptive to publishing null results. The open access journal f1000Research publishes positive and negative results in the life sciences. Some journals publish only negative results, for example, the Journal of Negative Results in Biomedicine. This is a trend everyone should welcome. All scientific data should be published, positive and negative, so long as it advances the state of knowledge.

Have negative results kept you from publishing your work? How did you find your way out of it? Did you publish your work or just let it go? Let us know about your experience about dealing with negative results in the comments section below!

You can also visit our Q&A forum for frequently asked questions related to different aspects of research writing and publishing answered by our team that comprises subject-matter experts, eminent researchers, and publication experts.

Category

1. Publishing Research
2. Understanding Ethics

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