

# How to Write and Publish a Scientific Paper

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*Seventh Edition*

**Robert A. Day and Barbara Gastel**



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## Preface

*Criticism and testing are of the essence of our work. This means that science is a fundamentally social activity, which implies that it depends on good communication. In the practice of science we are aware of this, and that is why it is right for our journals to insist on clarity and intelligibility.*

—Hermann Bondi

Good scientific writing is not a matter of life and death; it is much more serious than that.

The goal of scientific research is publication. Scientists, starting as graduate students or even earlier, are measured primarily not by their dexterity in laboratory manipulations, not by their innate knowledge of either broad or narrow scientific subjects, and certainly not by their wit or charm; they are measured and become known (or remain unknown) by their publications.

A scientific experiment, no matter how spectacular the results, is not completed until the results are published. In fact, the cornerstone of the philosophy of science is based on the fundamental assumption that original research *must* be published; only thus can new scientific knowledge be authenticated and then added to the existing database that we call scientific knowledge.

It is not necessary for the plumber to write about pipes, nor is it necessary for the lawyer to write about cases (except *brief* writing), but the research scientist, perhaps uniquely among the trades and professions, must provide a document showing what he or she did, why it was done, how it was done, and what was learned from it. The key word is *reproducibility*. That is what makes science and scientific writing unique.

Thus, the scientist must not only "do" science but must "write" science. Bad writing can and often does prevent or delay the publication of good science.