

Scientific Writing for a Popular Audience

Definition of genre

Scientific writing for a popular audience takes scientific findings and translates them into a form both comprehensible by and captivating to a general audience of non-specialists. Sometimes written by scientists, sometimes by historians, sometimes by biographers, this genre de-mystifies the results of scientific research.

This genre can be particularly difficult to work within, as it requires the ability to unify scientific knowledge with a humanistic voice. Often those with the expertise to understand the details of scientific research are unfamiliar with writing outside of the confines of that style, and as a result have some difficulty transforming their prose into something more approachable to the layman.

Actions to take

- Divest your language of as much scientific jargon as possible while still being true to the research. The average reader does not have an extensive scientific vocabulary, and overly-specialized terms are likely to confuse more than clarify.
- Avoid passive verbs. The very nature of the scientific process seems to mandate the passive voice, as *what was discovered* is of more importance than *who discovered* it. However, popular audiences are more likely to be drawn in by the drama inherent in the active voice.
- Replace the “eye” of the scientist with the “I” of the writer, as Carolyn P. Collette and Richard Johnson put it in *Finding Common Ground: A Guide to Personal, Professional, and Public Writing*. In other words, take the above suggestion one step further by personalizing the narrative. If you’re discussing your own research, let your audience get to know you both as a scientist and as a person.
- Turn your narrative into a story. Instead of focusing solely on the “is” of your tale, as most scientific writing tends to do, pay attention to the “how” and “why” as well. Rounding out your narrative will help to draw in your audience.
- Alternate scientific generalities with familiar specifics. Giving examples to illustrate complex scientific principles will help the reader engage with your text both intellectually and emotionally.
- Don’t “dumb” down your writing. A general audience is unlikely to have a great deal of specialized scientific knowledge, but treating your audience like grade-schoolers is a sure way to lose their attention.

Examples

There was always one small compromise, so small that working scientists usually forgot it was there, lurking in a corner of their philosophies like an unpaid bill. Measurements could never be perfect. Scientists marching under Newton's banner actually waved another flag that said something like this: Given an *approximate* knowledge of a system's initial conditions and an understanding of natural law, one can calculate the *approximate* behavior of the system. This assumption lay at the philosophical heart of science. As one theoretician liked to tell his students:

The basic idea of Western science is that you don't have to take into account the falling of a leaf on some planet in another galaxy when you're trying to account for the motion of a billiard ball on a pool table on earth. Very small influences can be neglected. There's a convergence in the way things work, and arbitrarily small influences don't blow up to have arbitrarily large effects.

Classically, the belief in approximation and convergence was well justified. It worked. A tiny error in fixing the position of Comet Halley in 1910 would only cause a tiny error in predicting its arrival in 1986, and the error would stay small for millions of years to come.

—James Gleick, *Chaos* (New York; Penguin, 1987) 14-5.

Intelligent life on a planet comes of age when it first works out the reason for its own existence. If superior creatures from space ever visit earth, the first question they will ask, in order to assess the level of our civilization, is: 'Have they discovered evolution yet?' Living organisms had existed on earth, without ever knowing why, for over three thousand million years before the truth finally dawned on one of them. His name was Charles Darwin. To be fair, others had had inklings of the truth, but it was Darwin who first put together a coherent and tenable account of why we exist.

—Richard Dawkins, *The Selfish Gene* (Oxford; Oxford University Press, 1976) 1.

Peter's face betrayed something important as he entered the door, and my stomach sank in apprehension at learning that all was lost. Seeing that neither Francis nor I could bear any further suspense, he quickly told us that the model was a three-chain helix with the sugar phosphate backbone in the center. This sounded so suspiciously like our aborted effort of last year that immediately I wondered whether we might already have had the credit and glory of a great discovery if Bragg had not held us back.

—James Watson, *The Double Helix* (New York; Mentor Books, 1968) 102.