

Science Writing

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How to find ideas and story lines

- There is no formula for coming up with a novel angle or fresh topic. But certain approaches and strategies can help you hone your nose for science news and root out interesting stories editors will want.

- Familiarize yourself with the weeklies, such as *New Scientist* and *Science News*, as well as the news section of *Science*. Gain a greater depth by, for instance, reading review-type articles, such as those that appear in *Scientific American*, *Nature's News and Views* section, or the *News & Commentary* section of *Science*.

- find out whether a story you want to write has already been written in magazines, newspapers, or scientific newsletters, or to get background information on a subject that interests you.

- “If a funding agency like the National Science Foundation creates a new program or a national lab announces they’ve just tripled spending on some particular line of research, it could be a sign that the field has reached some critical mass and is worth looking into.”
- Use this trick for our own research funding also.

- Prizes can also be an excellent source. The Nobels, announced in early October, are often the time when basic research takes the spotlight, although they are also often a time capsule of discoveries of a bygone decade.
- Other prizes may also give you very attractive ideas.

- Keeping up with what's going on and learning which kinds of stories are most likely to make it in print, on the Web, or over the air will help you develop news judgment. Having such a background also helps in formulating no angles and coming up with the day-after analysis that headline news often lacks.

- As is true for any kind of journalism, the best sources are people. If you studied science in college, you can tap old professors, teaching assistants, and even fellow students who have pursued science as a career. Just ask them what is the most interesting thing going on in their field right now.

- National and international level science meetings and conferences are also good sources for science writing

Interview scientists

- Whenever you have an opportunity to attend /visit a science meeting, schedule some interviews with important researchers and experienced science popularizers.

- For police reporters, there are crimes. For political writers, elections. Sportswriters have games. And science writers have journals. In fact, there are more journal articles published every year than there are games, elections, and murders combined. So science writers must be selective.
- To select wisely, you'll need to know, first of all, what the major news-providing journals are, and what sorts of science they publish. You'll need to understand the different kinds of journals and different kinds of papers within them.

- Important sources:
- Science
- Nature
- New Scientist
- Science Daily
- Wikipedia
- Newspapers and magazines.

Important checks:

- 1. Has a study been done, or is a claim being made on the basis of only limited observations? If a study was done, how was it designed and conducted?
- 2. What are the numbers? Was the study large enough (did it have enough patients or experiments or whatever) to reach believable conclusions? Are the results *statistically significant*? *That phrase* simply means that, based on scientific standards, the statistical results are unlikely to be due to chance alone.

- 3. Are there other possible explanations for the study's conclusions?
- 4. Could any form of bias have affected the study's conclusions, unintentional or otherwise?
- 5. Have the findings been checked by other experts? And how do the findings fit with other research knowledge and beliefs?

Writing well about science

- 1. *Read your work out loud. You will be able to hear rhythm and flow of language this way, and you really cannot hear it when reading silently.*
- 2. *Don't be shy. Ask other writers to read a draft for you. Everyone gets too close to the story to see the glitches, and a dispassionate reader is a writer's best friend. Good writers gather readers around them for everything from newspaper stories to whole books (which require really good friends).*

- 3. *Think of your lead as seduction.* You need to begin your story in a way that pulls the reader in.
- 4. *Have a clear sense of your story and its structure before you begin writing.*
- 5. *Use transitions. A story has to flow.* Leaping from place to place like a spider on a pond will not make your prose easy to follow..

- 7. *In fact, don't overwrite at all. And never, never, never use clichés.* If you want to write in your voice, sparkling language will not do. There should be no silver linings, no cats let out of bags, no nights as black as pitch.

- 8. *Write in plain language.* This applies not only to science writing but to all beats in which a good story can easily sink in a sea of jargon.
- 9. *Picture your reader.* Imagine a specific reader who is unnerved by science to begin with and would stop reading your story the minute you throw a multisyllabic medical term in his or her face.

- 10. *Have fun.* Science is intriguing, funny, and essential to everyday life. If we write too loftily, we lose some of the best stories and the ones that our readers most relate to.

- Storytelling
- Science is a process rather than a product, and this is why it lends itself to storytelling.
- Scientific discoveries are made by people; they don't just happen.
- Good writers give readers a picture of scientists carrying out experiments, recording cause-and-effect relations, documenting observations, disturbing steady states, and being excited and sometimes startled by their findings.
- Authentic scientists expect the unexpected, and when it happens they love it.

- Start with easy stories.
- But, at least, start...
- ...and start **nOW**.

- *These slides have been based on*

A Field Guide for Science Writers

SECONDEDITION

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সবলকৈ লেখা/জটিলকৈ লেখা

ঘৰত কাম কৰা তিবোতাজনীয়ে (Mrs. Peters) মালিকনী মিছ ডিক্সনলৈ
লিখি থৈ গ'ল :

Dear Miss Dixon,

When I was cleening this morning 2 large mouses jump out
of box will ask Man what to get for them.

Yours respectfully

Mrs. Peters

Rodent Extermination Department, Whitehall.

Your Ref.: MUS/DOM/2/OUT.

To

Miss Dixon

Dear Madam,

In the course of proceedings whose overall target was the hygienic rehabilitation of your dwelling quarters, the attention of the appropriate operative was drawn to the localized activities of two rodents in a state of obvious nutritional adequacy and physical activity. Consultation with a higher authority with a view to placing ourselves in a position to adopt the appropriate methods for the liquidation of this surplus population will begin at the earliest available opportunity.

I beg to remain, Madam,

Your obedient servant,

M. Peters.

অথচ তাক এনেকৈও লিখিব পাৰি :

Dear Miss Dixon,

While I was cleaning, this morning, two large mice jumped out of a box; I will ask a man I know what to buy to kill them.

Yours sincerely,
M. Peters

অথচ তাক এনেকৈও লিখিব পাৰি :

Dear Miss Dixon,

While I was cleaning, this morning, two large mice jumped out of a box; I will ask a man I know what to buy to kill them.

Yours sincerely,

M. Peters

বিজ্ঞান সহজ কৰা ভাটোটে

জনপ্ৰিয় বিজ্ঞান লেখিব খোজা লেখকে নিজৰ কাহ্নত এটা

বিশিষ্ট সম্পাদক এগৰাকীৰপৰা স্পষ্টকৈ লেখাৰ বিষয়ে কেতবোৰ পৰামৰ্শ :

How to Write Clearly

By Edward T. Thompson
Editor-in-Chief, *Reader's Digest*

International Paper asked Edward T. Thompson to share some of what he has learned in nineteen years with Reader's Digest, a magazine famous for making complicated subjects understandable to millions of readers.

If you are afraid to write, don't be.

If you think you've got to string together big fancy words and high-flying phrases, forget it.

To write well, unless you aspire to be a professional poet or novelist, you only need to get your ideas across simply and clearly.

It's not easy. But it is easier than you might imagine.

There are only three basic requirements :

First, you must want to write clearly. And I believe you really do, if you've stayed this far with me.

Second, you must be willing to *work hard*. Thinking means work— and that's what it takes to do anything well.

Third, you must know and follow some *basic guidelines*.

If, while you're writing for clarity, some lovely, dramatic or inspired phrases or sentences come to you, fine. Put them in.

But then with cold, objective eyes and mind ask yourself : "Do they detract from clarity ?" If they do, grit your teeth and cut the frills.

Follow some basic guidelines

I can't give you a complete list of "dos and dont's" for every writing problem you'll ever face.

But I can give some fundamental guideline that cover the most common problems.

1. Outline what you want to say.

I know that sounds grade schoolish. But you can't write clearly until, *before you start*, you know where you will stop.

Ironically, that's even a problem in writing an outline (i.e., knowing the ending before you begin).

So try this method :

- On 3" x 5" cards, write – one point to a card— all the points you need to make.

- Divide the cards into piles – one pile for each group of points *closely related* to each other. (If you were describing an automobile you'd put all the points about mileage in one pile, all the points about safety in another, and so on.)

- Arrange your piles of points in a sequence. Which are most important and should be given first or saved for last ? Which must you present before others in order to make the others understandable ?

Now, *within* each pile, do the same thing— arrange the points in logical, understandable order.

There you have your outline, needing only an introduction and conclusion.

This is a practical way to outline. It's also flexible. You can add, delete or change the location of points easily.

2. Start where your readers are.

How much do they know about the subject ? Don't write to a level higher than your readers' knowledge of it.

CAUTION : Forget that old — and wrong— advice about writing to a 12 year old mentality. That's insulting. But do remember that your prime purpose is to *explain* something, not prove that you're smarter than your readers.

3. Avoid jargon.

Don't use words, expressions, phrases known only to people with specific knowledge or interests.

Example : A scientist using scientific jargon, wrote, "The biota exhibited a one hundred percent mortality response." He could have written : "All the fish died."

4. Use familiar combinations of words.

A speech writer for President Franklin D Roosevelt wrote, "We are endeavoring to construct a more inclusive society." F.D.R. changed in to "We're going to make a country in which no one is left out."

CAUTION : By familiar combinations of words, I do *not* mean incorrect grammar. *That* can be unclear. Example : John's father says he can't go out Friday. (Who can't go out ? John or his father ?)

5. Stick to the point.

Your outline — which was more work in the beginning — now saves you work. Because now you can ask about the sentence you write : "Does it relate to a point in the outline ? If is doesn't, should I add it to the outline ? If not, I'm getting off the track." Then, full steam ahead— on the main line.

6. **Be as brief as possible.**

Whatever you write, shortening— *condensing*— almost always makes it tighter, straighter, easier to read and understand.

Condensing, as *Reader's Digest* does it, is in large part artistry. But it involves techniques that anyone can learn and use.

■ *Present your points in logical ABC order* : Here again, your outline should save you work because, if you did it right, your points already stand in logical ABC order — A makes B understandable, B makes C understandable and so on. To write in a straight line is to say something clearly in the fewest possible words.

■ *Don't waste words telling people what they already know* : Notice how we edited this : "Have you ever wondered how banks rate you as a credit risk ? You know, of course, that it's

some combination of facts about your income, your job, and so on. But actually, Many banks have a scoring system ..."

We edited it as : "Have you ever wondered how banks rate you as a credit risk ? Many banks have a scoring system..."

■ *Cut out excess evidence and unnecessary anecdotes* : Usually, one fact or example (at most, two) will support a point. More just belabor it. And while writing about something may remind you of a good story, ask yourself : "Does it really help to tell the story, or does it slow me down ?"

(Many people think *Reader's Digest* articles are filled with anecdotes. Actually, we use them sparingly and usually for one of two reasons : either the subject is so dry it needs some "humanity" to give it life; or the subject is so hard to grasp, it needs anecdotes to help readers understand. If the subject is both lively and easy to grasp, we move right along.)

- Look for the most common word wasters : windy phrases.

Windy phrases **Cut to...**

at the present time now

in the event of if

in the majority of instances usually

■ *Look for passive you can make active* : Invariably, this produces a shorter sentence. "The cherry tree was chopped down by George Washington." (Passive verb and nine words.) "George Washington Chopped down the cherry tree." (Active verb and seven words.)

■ *Look for positive /negative sections from which you can cut the negative* : See how we did it here " "The answer does not rest with carelessness or incompetence. It lies largely in having enough people to do the job."

We did it like this : "The answer is having enough people to do the job."

■ Finally, to write more clearly by saying it in fewer words : when you've finished, stop.

Thank you for your patience.