The Accidental Researcher: How the Habitual Observation of Language Instructs Our Craft

Brad Connatser, Senior Member, bconnatser@comcast.net

Abstract

Because of their intrinsic interest in language, technical writers and editors often think about language abstractly, observe the use of language in natural environments, and draw conclusions based upon those thoughts and observations. But what does a gainfully employed technical communicator do with his or her conclusions? This article discusses the process of "accidental" research, how to conduct formal research based upon the conclusions of accidental research, and how to develop the results of research into formal presentations for publication or inclusion in a corporate style guide. Foundational information about the scientific method is relayed, and the four-part sequence of research activities is explained, beginning with the conception of an idea and progressing to an experiment that tests the validity of the idea, hypothesis, and predicted results.

Once Upon a Linguistic Query

Have you ever encountered an incomplete moron? Of course not. All morons are complete for some reason. But what is the reason for their completeness? And why can't we substitute another word for "complete" to describe their dubious achievement, you know, for elegant variation, a little creative license? Why not "a moron in the full" or "thorough moron" or "un-attenuated moron" or "unconditional moron" or "categorical moron"? Off the cuff, some of us hurl such epithets as if we were relenting to a powerful, universal law of linguistics. It just kind of slips out. The same goes for "stupid idiot." Directly from the Department of Redundancy Department, this phrase has a tenacious grip on an itsy-bitsy patch of our brain cells. It has laid claim to a tiny territory occupied by other idioms, strings of words that are dormant during thoughtful composition of prose but fly about like gnats during informal discourse.

These thoughts about idioms surfaced recently when I was traveling down a stretch of Interstate 40 as a passenger in my brother's very long car, which he calls "the land barge." Somewhere ahead, a distant clog of some sort turned I-40 into a parking lot, a tangle of cars awkwardly merging from two lanes into one. To the right of our car, a burly man in monster truck signaled his intention to scoot into our lane. So we paused to form a break in front of us—so nice of us. After the break formed, we expected him to guide his car in, as did the growing line of people in their cars behind him. But, alas, flipping through his stack of CDs was a higher priority. My brother honked the ultra-loud horn, but still he sorted his stash. My brother quietly called him a "stupid idiot," while I preferred "complete moron"—not so nice of us, to be sure. We both defamed him with idioms of road rage, the sort of pre-assembled language that seems to lurk right at the surface of consciousness until prodded by the right circumstances of traffic.

Why were these idioms the first things that came to our minds? They seem to be closer to the heart than the brain. Moments of excitation call upon a reliable, tried-and-true subset of our vocabulary—be they clichés, idioms, or common curses—words that express more about the psychological condition of the speaker than the subject being set ablaze. When grandma curses like a sailor, she is not really thinking about her message but rather experiencing a linguistic catharsis.

"Coming to mind" was the important concept I focused on as I parsed the two inelegant expressions that my brother and I let fly. While my brother talked about something or other, I sat silently, disengaged from further discourse. I was far beyond the humdrum dictionary definition of "idiom" and deep into its reflection of the user, and so I was occupied for the duration of our trip.

The Involuntary Analysis of Language

You've probably noticed by now that this article is not a rich, intellectual exploration of a single, neglected topic of technical communication. In fact, the literature on the idea that I have introduced—the concept of idioms, clichés, jargon, and what have you—is in long supply. Jargon, for example, a type of overused insider language, is amply trotted out in journals, magazines, and newsletters and summarily shot between the eyes. Now, while this article could have been a monolithic sermon about some epiphany I had while traveling down the interstate, it is not. Instead, it is about obsession and guilt, in the vein of a William Faulkner novel. As we drove down I-40—my brother and I, in our land barge, in the fast lane—my thoughts progressed from wondering about idioms to wondering about why I wonder so much and why was I so transfixed by language that I entirely tuned my brother out.

This was not a one-time occurrence. I often indulge an inappropriate awareness of language; I stop listening to what people are saying to reflect upon something that they have said. I can't help it. You may think that I'm listening to you as I nod and look you in the eye, but I am staring beyond the commotion of speech in front of me—I am staring at a concept that has distracted me from the experience of human intercourse. For example, a few weeks ago, I engaged in an innocent conversation with a friend, but I had been in a fog of my own thoughts all day, and my mind was full of wispy ideas. One of these ideas was how our language evolves right in front of us. Take the phrase "as far as x is concerned." It's been around a long time. Sometimes it takes the form of "as far as x goes," too. Now, as we talked, my friend and I, I caught something between my ears, an evolved form of the idiom "as far as x goes." He said something similar to the following: "As far as working with their engineers, they were reluctant to hand over their diagrams." Where's the rest? Where's the "goes" or "is concerned" that we have traditionally yoked to "as far as"? Since then, I have noted dozens of occurrences of this abbreviated idiom. Here's one from Dr. Francis Collins in an interview about "Is there a God?":

And so in considerable disarray as far as my own intentions of what I would want to do with the rest of my life, I decided to go to medical school as a way of trying to explore this more human side of science, namely biology.

--"The Question of God, An Interview with Francis Collins,"
http://www.pbs.org/wgbh/questionofgod/voices/collins.html, September 20, 2004

And there are other examples of evolving English. For example, "whether" has lost its "or not," and "but also" has forsaken its "not only" years ago. But what I'm getting at is not the evolution of language or any one point about language at all. What I'm getting at through these examples is a curious union of guilt, obligation, and pride conferred upon those professional technical writers and editors who by the tug of an irresistible interest in the composition of words bend an ear toward the way we use language in our natural environments. And if this irresistible interest does not affect all of us, then it certainly affects many of us, for I have had conversations with my colleagues that reveal a similar love affair with the inner workings of language.

A Cost/Benefit Analysis

Yes, this hyper-awareness benefits me greatly in my professional life, but in my private life, it takes a toll. For example, I no longer enjoy reading merely for "pleasure." Last year, I read only three books of fiction. And that was a banner year. Also, the distraction of word vigilance gets me into trouble. Sometimes I am caught tuning people out while I ponder some abstraction. When a question comes whose answer requires a careful listener, I confess that my mind has wandered, wondered, and I am sorry. Last, it consumes me, so my efficiency of working on billable projects subsides. Take the time of this writing, for example. I am typing these words while I should be working on a Web wizard for one of the electrical engineers who has entrusted me with his budget (and here I am editing these words some weeks later when I should be editing a report on automatic utility meter readers). But I am compelled instead to release conclusions from my head like so many butterflies set free from a jar.

I do not claim to be a victim of involuntary analysis. On the contrary, I am its proponent. I believe that the provisional exploration of language, no matter how inappropriate the timing of it, benefits us by informing our craft—technical writing and editing. An extraordinary understanding of language begets extraordinary compositions. A creative writing professor once told me—as if he were reading from a tablet of one commandment—that good writing comes from understanding—not from the muses, not from hard work, not from natural talent. I found that hard to believe. He scoffed at the idea of inspiration. "Most of the crap written these days is the product of inspiration."

Conducting Research in a Natural Environment

Field study. That's what researchers call the study of something in its natural environment or habitat. So why is the study of language when it is performed by people in their natural environment so important to our field? To answer that question, we need to consider a significant research term called the Heisenberg Uncertainty Principle. Werner Heisenberg was one of the founders of quantum mechanics. His seminal research in measuring subatomic particles led him to a now-famous conclusion: "The more precisely the

position is determined, the less precisely the momentum is known in this instant, and vice versa."

This rather obscure statement has been extrapolated to many fields that conduct primary research. The adopted paraphrase of Heisenberg's original statement goes something like this: Whatever you measure, you change, and therefore the true value of a parameter cannot be precisely determined. The deliberate sticking of a probe into a research subject changes the subject and its environment. When researchers deal with human subjects, for example, self-awareness becomes a problem; that is, human subjects are aware that they are being probed and may alter their responses to stimuli based upon what they think are appropriate (or self-aggrandizing) responses. This is often called "the demand effect."

A good example of the demand effect is the telephone survey. For example, let's say that our telephone researcher, Ralph, calls a person at random. Martha answers the telephone and agrees to answer a few questions. One of the questions is: "How often do you vote during presidential elections? Always? Most of the time? About half of the time? Rarely? Or never?" Martha really doesn't care about politics and therefore doesn't vote at all, but she understands that society considers voting to be a civil obligation. She doesn't know the person on the other end of the telephone line who is asking her this question, but nevertheless, she feels a vague desire to impress the researcher, to present herself as a socially responsible citizen, to avoid an awkward moment when the researcher silently concludes that Martha is irresponsible and unpatriotic. So, Martha lies and says, "I'd say most of the time."

This scenario demonstrates the Heisenberg principle and its particularly suitable application to research involving conscious human subjects, including research in sociology, psychology, linguistics, discourse analysis, and our own field, technical communication. Journals, magazines, and newsletters related to technical communication contain many reports on research conducted using human subjects, but the Heisenberg principle casts doubt on many of them. For example, consider a bold research project conducted by L. Hunter Thompson and Mary B. Coney at the University of Washington. They employed ethnomethodology to gain insight into the way people process a text in a "reading to do" environment. The ethnomethodological approach enabled the researchers to "observe and record the reactions on videotape of human subjects as they read and attempted to follow a set of instructions." Although their research was interesting and enlightening, the presence of the research scaffolding—the camera, the lights, the instructions to "think aloud" so that the processes of reading and doing could be recorded—no doubt stirred the subjects' self-consciousness, which thus became a nuisance factor in the experiment (for a thorough exposition of their work, please see: L. Thompson and M. Coney. 1995. Putting reader roles to the test: An ethnomethodological approach. IEEE transactions on professional communication 38:100–109.).

Thus the Heisenberg Uncertainty Principle comes into play, pointing toward the enormous value of observing human subjects without their knowing it. Call it eavesdropping, sneaky, or devious—call it what you will—the undeclared observation of an un-self-conscious human subject is one of the best ways to understand the otherwise illusive codes of language. When the researcher is invisible to the subject, then the truth of language is laid bare.

What Can We Do?

We may not be "scientists," but we can certainly learn something from the scientific method of research. First, let's understand the term "scientific method." This method is a highly structured four-part sequence of research activities that begins with an idea, which progresses to a formal hypothesis, which progresses to a prediction of some sort based upon deductive reasoning, and which finally progresses to an experiment that tests the validity of the idea, hypothesis, and predicted results. What I'm advocating in this article is our contribution to if not all of the four activities then at least the first: generating ideas.

To generate ideas, we must be open to exploration of our linguistic environment. I limit this article to the observation of grammar (although many other linguistic subjects are worth exploring). In other words, I encourage you to listen to what people say (semantics), how they say it (syntax), and what the train of words sound like (phonics). Those three modes of observation—semantics, syntax, and phonics—are the three elements of grammar. Once we attune our ears to the grammar of English, ideas about the way we use language can start to resonate. As we explore these new ideas, others may surface like bubbles in a cauldron. Then, we can compare our observations of natural-language usage to how language usage is prescribed in grammar books and style guides. In this way, we will be comparing what I've termed "organic grammar"—the grammar that is hard-wired in our brains—to prescriptive grammar.

When we come across an interesting comparison, what can we do? First, we can leave the investigation at the idea stage of the scientific method and write a commentary on the subject. There are dozens of journals, magazines, and newsletters that publish commentaries of the sort I'm talking about. By formalizing the idea into an hypothesis, you have progressed to the second stage, but your article will still be considered a commentary. The third stage of the scientific method adds teeth to your hypothesis by completing a model. Proposing predictions based on a careful, reasonable extrapolation of your hypothesis rounds out the idea but may require a lot of secondary research—combing relevant journals and summarizing primary research whose results support your conclusions, as well as those that don't. Finally, if you are familiar with basic experimental design or know of someone who can help, then you can experimentally test your hypothesis and submit your results to a magazine or journal.

A Case of Accidental Research

I use the term "accidental research" to distinguish informal, extemporaneous "thinking about language" from formal research that requires preparation. By using the term "accidental," I am borrowing from Aristotle's distinction between the essence of a thing and its various non-essential properties (what Aristotle calls "accidents" or "qualities"). For example, the roundness of a marble is essential to it, but its color is accidental. To be categorized as a marble requires that the object be round but does not require that it be red, for instance.

In the following case study, I recall adopting the role of accidental researcher during a conversation with a colleague. The essence of a conversation is the exchange of ideas, whereas the mental withdrawal from the conversation to reflect upon the way that language has just been used is not essential—it is accidental to it. Starting with this accident, I traversed all four stages of the scientific method: the generation of an idea, the expression of a formal hypothesis, the expression of a prediction based upon deductive reasoning compelled by the hypothesis, and experimentation to test the validity of the hypothesis. Such a study does not have to culminate in a published paper; it can end in something more immediate, such as a revision of your company's style guide or a revision of your editorial practices. In my case, the final product was a paper published in the STC journal, Technical Communication (for a thorough exposition of this informal experiment, please see: B. Connatser. 2004. Reconsidering some prescriptive rules of grammar and composition. Technical communication 51(2): 264–275.).

The Idea

The idea that lodged between my ears was a seeming discord between organic grammar and prescriptive grammar. I am talking now about value/unit agreement. The unit of parameter must agree with the value of a parameter in number. For example, if I am measuring the distance (the "parameter") between two objects, the unit of measurement may be "inches." If there is more than one inch between the two objects, then the unit is plural (inches). If there is only one inch between the two objects, then the unit is singular (inch). But what about values between one and negative one, so-called decimal values? People may reason that because an absolute fractional value is less than one, it should take a singular unit of measurement (because plural means more than one). But I'm skeptical about applying logic to this grammar rule. Based upon my own experience with language and from my observations of other people using language, I believe that organic grammar differs from prescriptive grammar on this point.

The Hypothesis

I thought about the idea for quite a while and eventually crafted the following hypothesis: Any decimal value between 1 and –1 is naturally treated by speakers and writers as a plural (that is, a non-unity value) and should thus take a plural unit of measurement. This hypothesis was based entirely on personal experience and observation, so I needed a way to test the hypothesis. But first, I needed to predict the outcome of such a test.

The Prediction

When asked about the rule for value/unit agreement, the engineers at my place of employment would, for the most part, know the prescriptive rule. For example, if I were to ask the engineers, "When do you use a plural unit of measurement and when do you use singular?" they would use singular units of measurements for decimal values between 1 and –1 (this issue actually arose during my first year of employment as a technical communicator, many years ago). However, if I could somehow divert their attention away from what they learned in English classes, they would, for the most part, unconsciously

rely on organic grammar and thus use plural units of measurement for decimal values between 1 and –1. The rule, then, according to organic grammar, is: Use a singular unit of measurement when the value is one (and perhaps when the value is negative one). All other values require a plural unit of measurement.

The Experiment

I had my idea, I had my hypothesis, and I had my prediction. Now, I needed to figure out a way to test the hypothesis. If the test results agreed with my prediction, then I would be satisfied that I have developed a linguistic proposition that stands up to scrutiny. Diverting the attention of the human subjects (all engineers) was a difficulty that resulted in a tried-and-true experimental method: misdirection.

NOTE: In the final form of the article that I published, I was compelled to disclaim the validity of "lying" to subjects to misdirect their attention. But anyone who studies experiments in cognitive psychology will recognize misdirection as a common tool for studying the workings of the mind.

In the first phase of the experiment, I explained to my human subjects that "I'm testing the assertion of F. Middleton et al. that 'soon after graduation, electrical engineering students forget basic principles such as Ohm's Law.'" (Of course, I could have said, "Imagine that a man named F. Middleton and his colleagues claimed that…." This would have satisfied the critics of my method, but such a contrivance merely smears lipstick on a pig.) Then, I offered a phony citation, knowing that the subjects would not bother to find the fictitious article. Then, I had them try to solve the values of different electrical parameters (voltage, current, and resistance) to see whether indeed they still retained Ohm's Law. The accuracy of the values were not important to me. I was focused on the unit of measurement. Would it be "volt" or "volts," "amp" or "amps," "ohm" or "ohms"?

Of course, all of the engineers were happy to have gotten full marks, thus proving to the dim-witted authors of the paper that I cited that Ohm's Law was still firmly installed in their brains. Soon after, though, I confessed that I was really interested in whether they knew the rule for value/unit agreement (which I defined as the rule that determines whether you use a plural unit of measurement or a singular unit). So, in the second phase of the experiment, I presented the correct values of the Ohm's Law calculations and had the subjects select the "correct" unit of measurement (either singular or plural). The results of the experiment were pleasing to me. In the first part of the experiment (when organic grammar reigned), the subjects tended to use plural units for values between 1 and –1. In the second part (when prescriptive grammar reigned), they tended to use singular units.

Conclusion

Thinking about how people use language is important to our profession. Some people, both academics and practitioners, consider technical communication to be a non-field of study, that it dangles from other established fields—English literature, journalism, linguistics, and so on. What we need is research conducted by technical communicators and those who teach technical communication. I encourage research that is focused on grammar because that is where the rubber meets the road, and that is where periodicals and books are weakest. There is no void to fill: There are some good papers on grammar published in newsletters, magazines, and journals in technical communication, but the population is spotty.

A strong movement toward research and application of research in the field of technical communication requires a ground swell of interest and action from practitioners. Teaming up is a good approach. Two or more practitioners can share the burdens of one demanding research project. But how do we benefit from a demanding research project?

-Getting published boosts your resume, indicating a high degree of professionalism and dedication to your trade.
-Publishing also increases your gravitas within your company. For example, when an engineer challenges one of my edits, I can sometimes pull out one of my papers and quote from it. That tends to make the engineer more agreeable.
-Presenting your research at a conference enables you to get feedback about your research, your assumptions, and your conclusions. It also provides a great venue for networking with other technical

communicators.
-The reading and writing that you do when composing an article about technical communication keeps you sharp and up-to-date in your field.
-If you specialize, you can claim an expert knowledge. For example, I specialize in silent speech and its application to technical communication. I make some writing and editing decisions based upon that research. In fact, I just made one in the previous sentence, choosing "upon" rather than "on" to maintain an iambic meter (BASED upON that REsearch).
-While researching, writing, and editing, you may develop an idea for a second article, a third, and so on. Pretty soon, you may have to create a method for organizing your thoughts by project. Before you know it, you may have enough material from jotting down notes to start writing another article.

Finally, do your best to publish your article. Be tenacious. Consider sending it to the following (a short list of publishing avenues with which I'm familiar):

Peer-Review Journals

-*Journal of Technical Writing and Communication*
-*Technical Communication, the journal of the Society for Technical Communication*
-*Reader: Essays in Reader-Oriented Theory, Criticism, and Pedagogy*
-*IEEE Transactions on Professional Communication*
-*Technical Communication Quarterly*
-*Technical and Business Communication*
-*Style and Readability in Technical Writing*
-*New Essays in Technical Communication*
-*The Journal of Business Communication*

Magazines

-*Intercom*, the magazine of the Society for Technical Communication

Conferences (Proceedings)

-STC annual conference
-IEEE International Professional Communication Conference
-Regional and local conferences

Wide-Publication Newsletters

-*IEEE Professional Communication Society Newsletter*
-*Tieline*, the monthly newsletter for STC leaders

Local Newsletters

-The newsletter of your local STC chapter
-The newsletter of your local IEEE Professional Communication Society chapter

Chapters of Books or Entire Books

-Additionally, you have more ambitious avenues, such as book chapters and entire books. These avenues are very difficult to negotiate. They usually require an enormous outlay of your time as well.

Alternatives to Third-Party Publishing

-Also consider disseminating your thoughts through a blog, which stands for "Web log." A blog is a personal Web site that publishes subjects interesting to the owner of the blog.
-A personal or professional Web site is another form of publishing.
-Finally, you can publish through user groups (or mail lists). Although they are technically third-party entities, they are usually so informal that your posts are spontaneous expressions of your opinions (a great way to influence the thoughts of your colleagues). Two user groups that I frequently visit (mostly in lurking mode) are STC Technical Editing SIG group

(http://lists.stc.org/cgi-bin/lyris.pl?enter=stctesig-l&text_mode=0&lang=english) and the Technical Writers Group (http://www.techwr-l.com/techwhirl/techwhirllist/webinterface.html).

No matter what avenue that you choose to present the results of accidental research to the world, don't get discouraged if you have trouble finding a publisher. Keep trying. For example, I was turned down by two journals before finally finding a journal that would accept one of my articles after a peer review (one of my first published articles). I entered the journal article into an STC contest. Despite its being twice rejected, the article won the highest award: Distinguished Technical Communication. Just because you get rejected at one publisher doesn't mean that the article is not publishable. Keep trying, because what you learn from accidental research benefits us all.

Brad Connatser is the president of a technical communication firm located in Knoxville, Tennessee. He is a senior member of the East Tennessee Chapter of STC, a member of the IEEE Professional Communication Society, and a volunteer for the Young - Williams Animal Center. He can be reached at bconnatser@writenowcommunication.com.

Transcript

STC-ETC Officers and Staff

President
Karla McMaster
Karla.McMaster@ctimi.com

President
Laura Purcell
lpurcell@utk.edu

Treasurer
Brad Connatser
bconnatser@comcast.net

Webmaster
Brad Connatser
bconnatser@comcast.net

University of Tennessee Faculty Liaison
Russel Hirst
rkh@utk.edu

University of Tennessee Student Liaison
Carolyn Corley
ccorley@utk.edu

Newsletter Editor
Brad Connatser
bconnatser@comcast.net

Region 3 Director/Sponsor
Beth Tanner
beth@tannercorp.com

What Is STC?

The Society for Technical Communication's goals are to enhance the professionalism of the members and the status of the profession; provide information through publications, reports, and conferences; report on new communication technologies, methods, and applications; provide recognition and awards; provide services to members at all levels of the Society; promote the education of members and support research activities in the field; and give service to industry and academe.

The Society for Technical Communication (STC)
901 North Stuart Street, Suite 904
Arlington, Virginia 22203
Phone: (703) 522-4114
Fax: (703) 522-2075
stc@stc.org
http://www.stc.org/

What Is ETC?

The greatest strength of the Society for Technical Communication is its active regional chapters. The East Tennessee Chapter is one of many such chapters dedicated to supporting local members with programs and activities, training sessions, and networking and leadership opportunities.

East Tennessee Chapter of STC
P.O. Box 5556
Oak Ridge, TN 37831-5556