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INTRODUCTION

Science journalism is changing, but the ability to recognize and sharpen important ideas, ask incisive questions about complex subjects, and tell accurate, compelling stories will always be essential. The best science journalists do far more than translate the latest scientific discoveries into lay language; they provide nuanced context and critical analysis. Such expert synthesis and critical analysis takes thoughtfulness and skill. The Open Notebook (TON) is a non-profit organization (funded in part by a grant from the National Association of Science Writers) that provides unique tools and resources to help science journalists at all experience levels hone their craft.

What We Do

- In our Story-Behind-the-Story interviews, we ask journalists to deconstruct their working process for specific stories. (Many interviews include supplementary features such as pitch letters, notes, draft excerpts, and edits.)
- Our topical features focus on specific elements of the craft of science journalism—for example, finding an effective narrative structure; taking good notes; finding and sharpening story ideas; or pitching stories well.
- The Open Notebook’s Ask TON series invites science writers to submit craft-related questions, which we then pose to experienced writers and editors, allowing journalists of all experience levels to tap into the expertise of their peers.
- The TON Pitch Database contains dozens of successful feature queries to a wide range of publications.
- TON’s Natural Habitat series invites writers to share their working spaces and the accoutrements that help them do their best work.

Who we are

The co-founders of The Open Notebook are:

- Jeanne Erdmann, a freelance medical science journalist based near St. Louis, Missouri, whose work has appeared in the St. Louis Post-Dispatch, Nature, the HHMI Bulletin, Science News, ScientificAmerican.com, Chemistry & Biology, and Cure.
- Siri Carpenter, an award-winning science journalist in Madison, Wisconsin. She has written for The New York Times, The Los Angeles Times, O, the Oprah Magazine, Science, Science Careers, Scientific American Mind, Prevention, and many others.

About this document

This electronic publication contains a sampling of materials that have been featured at The Open Notebook. We have assembled these materials specifically for AAAS Mass Media Fellows, with an eye toward the questions that young science writers commonly encounter as they embark on a new career.
PART 1: FINDING IDEAS

Lost and found:

How great nonfiction writers discover great ideas

(by TON guest contributor Brendan Borrell)

In June 2010, Michael Finkel needed a new idea. The Bozeman-based author of True Story: Murder, Memoir, Mea Culpa and writer for GQ, National Geographic, and Men’s Journal wasn’t satisfied with the stack of print-outs in the two-inch deep brownie pan on his desk. And none of the hundreds of ideas in a Word document on his computer struck his fancy. So, he opened up his web browser and typed a query into Google: “Amazing human feats.” That nebulous search brought him to a YouTube video of a blind man careening down a trail on a mountain bike, and by the end of the day he had a killer one-paragraph pitch for Men’s Journal: The Incredible (Yet True) Way That (A Few) Blind People Can “See”: Echolocation. [editors’ note: Find Finkel’s pitch at The Open Notebook’s pitch database.]

There are whole books on interviewing, and whole books on structure, but finding ideas remains one of the most mysterious and frustrating parts of journalism. “Nobody teaches you how to come up with ideas,” Finkel says. “It’s alchemy.” As a freelancer, I find that there are few things worse than running out of ideas and becoming paralyzed in front of the computer, wondering what I am supposed to write about next. It’s not writer’s block, exactly. If I had the idea, I could start the research, and if I could start the research, then I could start the writing. It’s that old catch-22: I don’t want to invest time researching a topic that may not turn into a sellable story, but if I’m not researching that topic, I’ll never find that story.

If ideas are essentially information without context then the skill of the feature writer is to recognize their significance, pluck them out of the data stream, and put them to good use. Sometimes the tidbit you stumble upon leads you down an investigative rabbit hole. Other times, you may already have an intriguing story topic, but you’ve never been able to crack it because you’re missing that nugget that turns an academic idea into a riveting narrative. I know how I fumble in the dark for inspiration, but I imagined that some writers out there might be a little more professional about things: What tricks do they have to keep the momentum up, and what do they do when the well runs dry? How do they recognize a good idea when they see it?

Perhaps it makes sense to start with Jonah Lehrer, a contributing editor at Wired and a columnist for the Wall Street Journal. Lehrer is just about the most ideas-oriented journalist you can imagine. His beat is mostly neuroscience, his website organizes his clips under the rubric of “ideas,” and, after the publication of his second book, How We Decide, he became a sought-after speaker delivering 30 to 40 lectures a year. He’s a thinker, but he certainly doesn’t spend his days staring at the wall. “Even the very idea-centered pieces begin with this social spark,” he
says. As he discovered reporting “The Eureka Hunt” for The New Yorker, people who have eureka moments don’t have higher IQ scores, but they tend to have widespread social networks and lots of acquaintances. A dinner in Toronto led him to the man who cracked the lottery, while a conversation with a scientist for another story put him on the trail of The Decline Effect, a piece on scientific results which don’t seem to stick.

In February 2009, Lehrer was backstage at a conference in Boston preparing to give a talk when he struck up a conversation with another speaker. Lehrer asked the man what he did for a living. “Oh, I work in floor cleaning,” the man replied. “Oh my God, this is the most boring conversation,” Lehrer thought. “How did I get here? What am I doing?” He was calculating how he could pry himself away from the tedium when something remarkable happened—the man began to talk about how he invented the Swiffer™ to replace the mop. Bingo! That quirky and unexpected tale opens Lehrer’s upcoming book, Imagine: How Creativity Works, which will be published in March 2012.

Many writers I spoke to agree with Lehrer that cultivating a wide social network is key, but they also maintain a diverse media diet. Finkel is partial to New Scientist and Science News for research briefs that hold feature potential at a general interest magazine. Elizabeth Svoboda, a contributing writer at Fast Company and a contributing editor at Popular Science, periodically checks in at Eurekalert for news ideas, but she finds that feature ideas come from reading broadly and getting a handle on the larger questions in a scientific field. She collects ideas in Firefox folders arranged by potential outlet and then she checks back on when she has time to pitch. One of her favorite sources for profile subjects is university research magazines at the University Research Magazine Association. “Sometimes it seems the harder I look for ideas, the more they squirm away from me,” she says. It’s true that it’s often easier to find a new idea when you’re out reporting on another story: Svoboda learned about a Florida cardiologist sending patients abroad for stem cell treatments—which she later wrote about for Popular Science—when she was working on a long news piece on stem cell tourism for Fast Company.

Yudhijit Bhattacharjee, a staff writer at Science and a contributor to Wired, Discover, The Atlantic, and other magazines, regularly reads science journals and press releases as part of his day job, but he also looks at Indian newspapers and regional newspapers in the U.S. to find stories that haven’t broken out nationally or may have an untapped science angle. That’s how he kept track of the organ trade in India, and learned about a self-taught surgeon who ran a kidney trafficking ring. Since he’s a generalist, he finds it hard to keep in touch with old sources, but if he writes a story he thinks they may be interested in, he’ll send them a link and a quick hello. “That has led to some of the most privileged information coming to me,” he says.

Of course, recognizing a good idea—no matter where it comes from—can also be a challenge. “I feel like knowledge and ideas are sometimes in conflict,” Bhattacharjee says. “If you don’t know anything, you are more receptive to ideas.” One day he was flipping through a 2008 report on organized crime from the Department of Justice when he noticed that the U.S. was cooperating with European law enforcement to battle cyber crime. He called up a few people on background and the town of Râmicu, Romania popped up in an interview. It’s the kind of detail that might slip past a beat reporter looking for the big picture. But for Bhattacharjee it was the first step to
a Wired feature in February 2011: **How a remote town in Romania has become cybercrime central.**

Finally, writing can be a personal endeavor and some of the best ideas just come from looking inside yourself. “This is kind of embarrassing,” Svoboda says before launching into a tale of self-discovery. During American history class in high school in California, she coughed up a pea-sized white chunk into her hand. “Is this a piece of tumor?” she wondered. She was frightened and horrified, but forgot about the incident for many years. Until it happened again. She hunted for information on the web, but never found anything. “I came to the conclusion that I was the only one with this problem,” she says. Then, one day, she discovered that the harmless condition had a name—tonsil stones—and there were entire forums on the topic. She decided that if it was so hard for her—a science writer—to get the straight story on tonsil stones, it had to be worth writing about. *Editors' note: read Svoboda's pitch here.* *The New York Times agreed.*

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Ask TON: Saving string

I’m a freelancer, and I want to move from doing straight news stories to features, but I don’t really know how to start looking for ideas. People talk about “saving string” for features, but where do they look for the string? Should I read a lot of scientific journals, or go visit random scientists in their labs, or what?

Science and technology writer Katie Greene:
One way to get started with features is to look for a person to profile. Try to find someone who’s solving an interesting problem in an interesting way. It’s important that this person is a character with quirks, conflicts, or some other compelling attributes.

In reporting news stories, you might actually have some potential profiles right under your nose. When you interview sources, ask them about future projects or big questions they want to answer. Ask them about the unsolved problems in their field. Ask them about colleagues they think are doing interesting work. These conversations could help you see trends that might have been invisible before. A trend plus a personality equals feature gold.

Science reporter Robert Frederick:
If you don’t already ask, “What else are you working on?” of your straight-news-story interviewees, then start. To extend the “saving string” metaphor, the interviewee’s answer to that question is the loose end of the string. It is up to you how much you want to tug at it. Indeed, your interviewee may not want to say much, but if you get a sense there’s an interesting feature story there (and not just a topic, but a story), ask who else is involved in the work and find out who the interviewee’s competition is, if any. Then, talk with all those people, too. But really, try to avoid a feature-length story unless the story really interests you. In particular, you’ll just be doing that kind of feature for money, and it is hard to sustain such interest (without getting cranky) for as long as a feature takes. Indeed, if you’re not interested in a feature-length story revealed by your string tugging, the best thing to do is to pass the information along to another freelance journalist who may have that interest—eventually other freelancers will start “saving string” for you, too.

Nature features editor Brendan Maher:
The short answer is, yes. Get out of your office and visit people, extend your interviews on other topics to see what people are thinking about and reading about right now. Consult the literature and the lay press and look closely for those unanswered questions that nag at you. Any of these could be the source for a feature length story. The longer, more difficult answer is that you simply never know where an idea will come from. It will rarely be one single piece of evidence, but rather one or two things heard in passing (i.e. reading a paper, or talking with a trusted regular source at a meeting, or having a random conversation on a plane, or seeing a single line in a news story that makes you go, “Huh. I wonder if there’s something more to that!”). Saving string is a good metaphor for it, but it’s a more active process if you want to get to the level of a pitch. I often think of it as trying to start a fire. First you need tinder. So you look in your pockets for lint, the residue of other stories and reporting projects. Lint is great because it flares quickly, but it also dies quickly. You’ll have more duds than structure fires. So, you have to go search for tinder, kindling, and larger pieces of information. This often means targeted
phone calls to key sources. Does that little lint ball of an idea that you’ve been keeping in your pocket have any worth? Does it catch their attention? Do they want to know more about it? Most importantly, does that little ball of lint start a fire burning in you to want to tell this story? If it does, you might be ready to pitch.

Metaphors are cheap, however; what you probably want are examples. A few years ago, I saw a number of short news pieces mentioning the first time fMRI evidence was being used in court to help show that a convicted criminal was a psychopath. Several pieces noted the basics of the story, but I wanted more. If this was unprecedented, why [was that the case]? And what were the chances that it would work? What factors about the research would have to be proved in order to get the evidence considered, and what does it say about science’s—particularly neuroscience’s—role in the criminal justice system? The germ was there, and looked promising enough that I asked a freelancer with whom I’d been talking about similar ideas to pursue it. She took on the task of gathering the kindling and bigger pieces of wood and developing the pitch. The story became part of a package about science in the courtroom.

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Ask TON: From idea to story

What questions do you ask yourself about a story that you’re considering pursuing? How do you decide whether it’s a good idea?

Freelance science writer Doug Fox:
Like everyone else, I run into a lot more story ideas than I could ever possibly have time to write, so I do think that it’s important to choose carefully the ones that I do propose. Here are some of the questions that I consider in deciding which ones to pursue…

- Is the primary source(s) cooperative to the degree that I’ll be able to dig up what I need to make the most of the story? This may entail taking 2 solid days of their time while visiting their lab, or having them take me into the desert for a week, or allowing me to talk to a bunch of their students or even blood relatives to reconstruct some important past event.
- Does this story have a real narrative arc to it that unfolds over months, years, or decades? I’m not looking for stories that are driven by some longstanding mystery or question in a field, or an individual’s curiosity or obsession. Does the story inadvertently reveal something about how ideas evolve, or how people are driven to make important discoveries sometimes by their own personal quirks? The best stories have protagonists whom the reader (and reporter!) can empathize with, who have pressed through multiple failures, or who had their career changed by the pure serendipity of noticing something accidentally. These are the stories that you can undress for the reader, slowly, tantalizingly, one slinky anecdote at a time, over the course of 4,000 (or hopefully more!) words.
- Is it important? To someone, at least? Even if the topic or discovery isn’t so important, sometimes the process of telling the story reveals other important observations, say about how science works.
- How much have other journalists stomped around in this area? Is there anything left to be said? Can I bring some insight to this topic that’s unique and new? That’s a high bar to get over, but it should at least be the goal every time. It doesn’t have to be an area that you specialize in, either—but it’s important to be able to report deeply enough that you get to a point of insight without having spent 300 hours on it and effectively bankrupted yourself for the next 6 months!
- Is this story actually attainable? By me? Right now? I hate to admit it, but I see some stories that could probably be great, but I don’t know how to tackle them, or know whether I have the skills, or know how to get the necessary access quite yet… These are the ones that get pushed to the back burner year after year…
- Most importantly of all, am I just plain excited about this story? There are stories that I think I should cover because they’re in an area that I specialize in, like glaciers or neuroscience—but inexplicably am just not excited about. Every story will put you through the meat grinder at some point—whether the process of convincing an editor, or figuring out the structure, so it’s best if you know up front that it’s true love.
I probably research (and do interviews for) 3 stories for every 1 that I end up proposing somewhere. Some of those stories that I never pitch end up resurfacing 2 or 3 years later, and when they do it’s suddenly clear that the time to embrace them has arrived.

*Journalist and author Ellen Shell:* When considering an idea, the most important question I ask myself is: does this story matter? Does it have implications beyond the immediate news, the immediate scientific discovery or issue? Does it have historical or cultural relevance, economic significance, political ramifications? Are there many intricate pieces, all of which will come together in a gorgeous whole by the end? Does it have psychological complexity and subtext? Is it counter-intuitive, that is, do few people really understand its importance and significance? If the answer to several of these questions is yes, this answers the question of whether I want to do the piece. To answer the question of whether I can do it—I become more practical. Is there a great character and/or a clear story arch? Do I have access to all the major players, and if not, can I get it? Can I think of a suitable publication with the interest—and resources—to back such a piece? Do I have the time to do it justice?

Reasons I might pass on what might otherwise be a good idea:
- Fluency in a foreign language required, or deep knowledge of a particular field with which I have little comfort (astrophysics comes to mind)
- Inside baseball—the story is important to those in the know, but not to the general informed reader.
- The cost of researching the proposal—international travel, months of in depth interviews—exceeds what I could possibly recoup
- The heart of the piece lies in a place I do not want to be (either physically, or psychologically)
- Important, but too wonky—too much yacking, not enough action/color/human interest/resonance for the average reader

*Science writer Brendan Borrell:* I am always on the lookout for feature ideas that are surprising, cinematic, and—if I’m really lucky—timely and unexplored. When I am considering an idea’s potential, I focus on its narrative possibilities because that’s what really gets me psyched to start my research and what will ultimately determine where and how I will pitch a story. Many science stories just have a protagonist on a quest of some sort, so you know your story is a winner if you’ve also got a real strong antagonist. Then there are other questions I ask myself: Do I anticipate multiple turning points and obstacles for the characters? Or is there just enough material for a descriptive opener and a closer? Has most of the action been completed or is the story still developing? Is there something remarkable about the place where the story occurs, its history, and the social environment? Finally, any editor is going to ask you about the wider significance of the narrative, and you better have a convincing answer for that. I find it useful to think about what is at stake for the subjects (life, love, money) and for the world (renewable energy).

*Journalist and author Deborah Blum:* Well, I usually start by asking myself if it’s an idea or story I’d actually repeat to someone I like. If I can’t see myself asking “Did you know…?” or saying “Let me tell you about….” to my
husband, kids, friends then I usually let it go. Obviously we can’t be so fussy about every story—some are just news driven, but for longer features, this is usually my first filter. If I think there’s something there, then I’ll do a little more research and see if it holds up. And by that I mean both the strength of the story and the strength of the sources—is there a good case for my central idea, are the scientists who support that case doing solid and well-reviewed work on the subject.

I always remember Charlie Petit (now at the Knight Science Journalism Tracker but when I first knew him at the San Francisco Chronicle) talking about “stories too good to check.” I’ll let a story go if my preliminary checking makes me think that the foundation of the story doesn’t really hold up. But there’s one other essential question for me and that’s: is this a story that I could tell well? Does it suit my particular story-telling abilities? I lean toward the narrative end of story telling so I’ll also look for a strong main character, a good plot line, an emotionally compelling issue, or a story with some humor or charm to it that I can play with. I like telling science stories that are people-centered and when I find one of those, it usually fizzes up to the top of my list.

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Ask TON: Finding international stories

I’d like to do more international travel as part of my work. I don’t really know how to begin finding stories in foreign countries, either in advance of travel or while I’m there. What are the best ways to do this?

Freelance science and environmental journalist Doug Fox:
When I was getting ready to embark on a 4-month reporting trip to Australia in 2001, I used a brute-force approach to idea hunting before I left. This consisted of repetitive Pubmed searches. I searched for all papers in the last 10 years or so with an author affiliation of “Australia” in high-profile journals, plus a list of other journals that were of specific interest. This had the problem of sometimes yielding papers in which an Australian was one of the authors—but the main work was happening somewhere else. So I combined this with other, more region-specific search terms like: marsupial, monotreme, macropod, stromatolite, Ediacaran, Archean, reef, crocodile, opal—or really, anything I found interesting. I viewed probably 5,000 abstracts, marked 100 that were interesting, followed up with 20 researchers, and ended up with 6 features in New Scientist plus 1 in Discover. It was an incredibly uncreative approach—and probably would not have yielded much in many developing countries where a lot of the local scientists are publishing in journals that may not be listed in major databases (or where the stories aren’t centered on academic researchers in the first place). But for my purposes it worked surprisingly well, and I repeated it for a second trip a couple of years later.

Freelance journalist Emily Sohn:
One of the great appeals of being a freelancer is that you can go anywhere and write, but the reality is usually less glamorous. Editors are very quick to spot (and reject) a “let me write about my vacation!” kind of pitch, and magazine travel budgets, unfortunately, are not what they used to be.

Still, I think opportunities are there if you go about it the right way. I’ve had a lot of success getting stories out of trips and vacations that I’m planning to go on anyway, and starting with those trips can be a great way to get the experience you’re craving. The key is to do plenty of legwork before you go (and to give up on the idea that your vacations will ever be completely relaxing or work-free again)!

My usual strategy is to start with a mega-research blitz via Google. I am drawn to animals and conservation topics, so I’ll search exhaustively for environmental groups working in the area I’m heading, starting with major international organizations and working down towards highly local groups. Then, I send out tons of e-mails and I make lots of phone calls, with the goal of finding someone—anyone—who will be conducting research in the field while I’m there. Be prepared to turn up a ton of projects that are not very interesting and plenty of really cool-sounding work that is not going to be in progress during your trip.

Eventually, though, I almost always find at least one or two possibilities and then I set up very specific plans to meet with the scientists at a certain place and time so that I can follow them around and see what they do. For me, this strategy has led to some really interesting situations: an afternoon checking camera traps with jaguar researchers in Costa Rica, a visit to a camel
research center in India, and a week with a lemur researcher in Madagascar (during my
honeymoon!), just to name a few. Another way to go about it is to scan published literature or
university websites, looking for scientists doing research in the area you’re going. Contact them,
and they might offer to let you visit their labs or tell you about colleagues you might want to talk
to. I took one trip—a week on a dive boat in Fiji—as the guest of a coral reef conservation
organization.

Turning those visits into stories is a separate and often, much harder, step. It’s absolutely worth
pitching what you turn up before you go, but editors are often wary to assign before they know
what the “story” is going to be, and it’s really hard to know what the story is going to be until
you’ve lived it. It can help to communicate before you leave with editors who you have
longstanding relationships with. Even then, though, I most often get responses like, “Sure, if you
find something good, I’ll consider it.” So, there’s some leap-of-faith behavior required, but I
figure if I’m going to be there anyway, it can’t hurt to meet up with someone interesting whose
work might fit somewhere into some story someday, hopefully sooner but maybe later. Almost
always, a fun visit in the field produces plenty of fodder for a really colorful and convincing
pitch. Sometimes, I send these pitches while I’m away. Other times, I wait until I get home and
am ready to do the hard work. My personal motto has always been that writing makes my
traveling better and traveling makes my writing better. So even if nothing comes out of a self-
funded field trip (at least not directly), there are many indirect benefits to having fascinating life
experiences and meeting new people. And if you do manage to sell something from the trip,
boom! You now have a great clip that proves you can report from abroad, and that can give you a
big boost in your future pitches about international stories.

No matter how you look at it, the conclusion is the same: Go!

Print and radio journalist Cynthia Graber:
I feel like there are two ways to approach this question, and they depend on whether you already
have a country in mind, or whether you’re just look over the options. So I’ll give you suggestions
based on two different types of reporting trips.

Trip 1: You have a country in mind, but no stories at all.

I was visiting a friend in Hong Kong, and then we were going to spend a weekend together in
Thailand. I knew I wanted to stay for a week in Thailand and work. I was looking for stories that
fit the show where I was a part-time producer, which covered issues of international poverty and
justice. And, following my personal interest, I was particularly interested in science,
sustainability, and conservation issues.

I started doing random searches on Thailand on Google and LexisNexis. I looked at what was
being covered about the country. I read local Thai newspapers in English, which was a great way
to find stories that might have international appeal but hadn’t been covered in the international
press.

This is how I found out about a movement of monks working on behalf of AIDS patients. I
looked into the topic and made some phone calls, and it turned out that the monks were crucial in
facilitating acceptance of AIDS sufferers in the greater community. And they still worked in villages all over northern Thailand, bringing food and comfort, helping create jobs, and even teaching sex-ed. I knew it’d make for great radio. (How I ended up reporting this story is an adventure in itself, and contains many lessons about what to do when you finally arrive.)

Another story also spun out of an idea I’d found while still in the US, and then that story spun into not only a radio feature, but two print stories. There were additional challenges there, because I reported much of one of the magazine features from back in the U.S. after my trip. But that, again, is a story unto itself.

**Trip 2:** You have a story that you really want to do in country X, but you need to bulk up the trip with more stories.

This happened last year with a reporting trip to Peru. I was inspired by a particular topic, and I wanted to go to Peru to cover it. The same radio show (which has since folded) was willing to fund the trip, but they needed a package of stories.

Again, I started conducting random searches on Peru. But this time, I focused my research on the topic I was already covering, and looked into different angles, or related stories. I found an article from the Guardian from 1997, and I discovered that the current work of that nonprofit had morphed into something that would make a great story. I also exchanged emails and spoke on the phone with a press person at an agricultural research center that is somewhat related to my original interest, and I found the angle that I wanted to cover. Finally, I found a story from last year that had received extensive coverage in the UK but almost none in the US, and I knew that it could be both updated and expanded.

The aforementioned radio show folded after I had planned my stories but before I had gone to report them. I ended up selling all three to the radio show The World (before I went), sold one to Smithsonian.com (also in advance), and left myself open to other story ideas and other venues. I managed to report all planned stories, and an additional one came about serendipitously. I met someone with whom I’d corresponded from the U.S.—I visited his family’s farm, and I was fascinated by some breeding research conducted by his father. I conducted a spur-of-the-moment official interview, which spun into a section of a magazine story.

Lastly, in looking for stories and doing research on Peru in advance—and certainly in reporting from Peru—it helped that I was able to speak Spanish.

Overall advice: Choose a country. Read all sorts of random articles. Find topics that interest you. Find centers conducting research that interests you. Examine angles of stories you hope to cover, and see if there’s anything else to report. Send emails. Pick up the phone and call people. And once you go, just talk to everyone, and be open to surprises.

**Writer and editor Hillary Rosner:** I tend to plan things out before I travel, because there’s usually a time constraint—and also because I like to get assignments ahead of time whenever possible. If time is no issue, then just get on a plane and go—stories will unfold before you! But to home in on potential stories
beforehand, there are two main ways to begin: hunting around on your own, and asking people you know to hunt around for you. Doing both is your best bet.

Let’s say you like to write about conservation biology, and you’re headed to London. First, email a half dozen conservation biologists or people related to the field who you’ve interviewed in the past. Tell them you’re going to London, and is there anyone they could suggest who’s doing interesting work in the UK. Then, start searching on your own. Pick a handful of universities in or near London and look up their conservation biologists. See what they’re working on. Email them and tell them you’re coming and looking for interesting stories. Then move on to conservation groups—either ones based in London, or big international ones. Next, think about other research centers or groups—in this case, museums or societies (like the Zoological Society of London). Contact them. Crumbs of stories will present themselves, and you can follow the trail from there.

If you’re talking about traveling to a smaller or more remote place—say, Malaysian Borneo—you’ll want to start by identifying the individual scientists who do fieldwork there. Often the best option is to start with a very broad web search and pursue different leads until they reveal something good or dead-end—kind of like a choose-your-own-adventure book. Start with a web search on really basic terms (Borneo, rainforest, biology, conservation, etc), and drill down. Meantime, start reading the local press and set some Google alerts.

Freelance journalist Brendan Borrell:
International reporting is a stressful, headache-causing, time-wasting, break-even and, sometimes, money-losing proposition. Think about all the things that can go wrong with a story in the U.S.—now add in travel arrangements, foreign bureaucracies, and language difficulties. If you’re not dissuaded, then let’s talk about the process of finding stories that can get you onto a plane. There are basically two ways this is going to happen for a beginning freelancer. The first is that you have a bombproof feature idea, and you already have a good relationship with a magazine that has a big travel budget. Barring that, Plan B is to just drop into the country of your choice and hope to make a splash with editors stateside, as Phillip Robertson did when he snuck into Iraq on an inflatable raft.

Even after six years of freelancing, my approach is often a combination of the two. I start with one good story idea that gets me psyched for going to a particular destination, and then I try to find other stories in the same region. Last year, for instance, I met a scientist at a conference and became interested in a story in the remote Indonesian province of Papua. It was a good feature, but I knew that the places where I could sell it would not expense my entire trip on top of my story fee. So I read Indonesian newspapers every morning, talked to lots of scientists and conservationists, and just had my story compass pointed towards Asia. It didn’t take long before I had commitments from several editors, and an itinerary for a five-week trip that would theoretically net a profit.

If that’s too scary for you, it’s also worthwhile to look into grants like those offered by the Pulitzer Center on Crisis Reporting or the International Reporting Project, but that adds another layer to the process.
Science magazine’s Asia News Editor Richard Stone:
When it comes to finding stories in foreign countries, there’s no substitute for living abroad. Many ideas germinate over coffee or a meal with sources, or from monitoring local press reports. Being close to the news, one hears about interesting things faster. But while you may be at a disadvantage reacting to developments or searching for stories from far away, don’t despair. As with any other story that you undertake proactively, let your curiosity guide you. If you intend to pitch an editor on an overseas trip, to be persuasive you better be passionate about the topic. Of course, before you start digging, save yourself time and heartache and check whether the outlet you intend to pitch has recently covered that ground.

I’ve long had a fascination for Angkor Wat, the ancient temple complex in Cambodia, and several years ago was determined to find a story that would take me there. I was surprised that Science hadn’t published more than a tiny blurb on Angkor. I figured there had to be interesting archaeology going on there, and via the Internet learned about a researcher at the University of Sydney who had a provocative new hypothesis about why the Angkor kingdom collapsed.

To get a green light for my dream trip to Cambodia, I’d need to thoroughly research the story in advance—much more so than for a story that doesn’t involve travel. I talked to as many experts about Angkor as I could before flying there. I had to verify that the researcher at Sydney had credibility, size up other hypotheses for the demise of Angkor, and see if there were other threads to the story that I hadn’t immediately grasped. A story may change—and if so, it’s much better to modify your reporting plans before the trip.

Casting a wide net may also tip you to something that never would have occurred to you otherwise. For example, I had sold my editor on a trip to Kazakhstan to report about lingering health effects of fallout from Soviet atomic bomb tests in the 1960s. One scientist urged me to ask the Kazakhs about plutonium in the soil at the defunct test site. That led to the revelation of a U.S. military program to prevent the plutonium in Kazakhstan from falling into the hands of terrorists. Although the health effects were my main objective at the outset, they became a sidebar to the sexier expose.

In many countries, access to scientists and facilities is much harder, generally speaking, than you might be accustomed to in the United States and Europe. Some years ago I intended to write about physicists who risked their lives working inside the damaged nuclear reactor at Chernobyl in Ukraine. I arranged to visit the Chernobyl power plant, but because a meeting with the physicists wasn’t explicitly on my itinerary, I wasn’t given access to the scientists. Instead I was given a tour of the power plant, and ended up having to make a second trip to Ukraine for the story. Fortunately I was based in Russia at the time, so it wasn’t hugely expensive. But the lesson I learned from the initial failure was priceless.

There’s a lot of ground to cover overseas, and fewer intrepid journalists than you might think. Just follow the Boy Scout motto: Be prepared.
PART TWO: PITCHING

Ask TON: How to pitch

What are the main things I should know about how to write a good pitch letter?

Men’s Journal senior editor Tyghe Trimble:
- If you don’t have a relationship with the editor, don’t pitch a 6,000 word feature. Period.
- You don’t have to do all your reporting before pitching, but you must mention who your sources will be.
- Don’t pitch the news. Pitch a story that needs to be told, complete with laser focus and brilliant angle. Then put the news peg up top, the icing on the cake.
- Read two recent issues of the magazine, front-to-back. Lose your preconceptions. A brand is not static. If you know Popular Science from ’60s, the Men’s Journal of the ’90s, or National Geographic from the ’80s, you don’t know the magazine. Your pitches will reflect a stereotype—and we’ll discount you entirely.

Freelance science writer and Science News contributing editor Alexandra Witze:
- Be timely; be thorough; make clear why this particular story is a good fit for this publication at this time. And spell everything correctly, including the publication and the name of the editor you’re pitching.

Science magazine online news editor David Grimm:
- Pick the right outlet. Don’t pitch a technology story to a publication that only covers health, or a hard-core molecular biology story to a general interest magazine.
- Do your homework. Figure out what types of stories the outlets want. If in doubt, e-mail the editor and ask him/her what topics they’re interested in.
- Always write “Pitch” or “Query” in the e-mail subject line. Otherwise, it could end up confused for a press release—and ignored.
- Pitch in advance of embargo lift/public release if possible. No outlet wants to be late on a story.
- Never call. Always e-mail.
- The pitch letter itself should answer the following questions: What’s the story? Why should we want it? Why you? Why now? I usually advise summarizing the story in a graf or two; telling the editor why it would make a good story for that particular outlet; talking briefly about your qualifications (your writing experience, your experience covering that particular field, etc.); and mentioning the embargo date/public release date. I also suggest including a sample lede, talking about multimedia (if appropriate), and—if you really want to go the extra mile—talking to an outside expert to get his/her take on the study.
- As a daily news site, we [ScienceNOW] want fresh news, so that means ideally stories released that day, and at the very least stories released that month (assuming no other coverage). Remember, you’re trying to give an outlet fresh, exclusive stories.
Journalist and author Maryn McKenna prepared notes for a short course on pitching (part of a magazine journalism course at the University of Georgia). She sent us her “not-comprehensive” notes:

**A good pitch requires a fleshed-out idea**
- It is not enough to have a topic. A topic is not a story. Topic + news, or + characters and narrative arc, make a story.
- A pitch should be newsy but not time-sensitive.
  - For most magazines, the minimum production timeline, if pitch is accepted immediately, is:
    - 1-2 mos reporting/writing
    - 1-2 mos editing/production
  - So you can see that something that is news today will be old when a magazine comes out—and therefore will not be a successful pitch.

**For a successful pitch, you must do research**
- Expect to spend at least 10 solid hours on this. (Yes, this is unpaid work.)
  - Google
  - Lexis-Nexis or Factiva
  - PubMed
  - interviews
  - If the pitch is successful, these will become your first round of story research
    - Therefore, you must take good notes and keep your research organized.
    - If you sell the story, you will be required to prove where every quote and fact came from, so start being organized now.

**For a successful pitch, you must also research your target publication**
- Identifying the right editor is the LAST task.
- The first task is ensuring that your idea matches, or can be tuned to, the magazine’s target demographic
  - E.g., women’s magazines:
    - SELF, women 18-35
    - Health, women 20-45; aspirational
    - More, 40-60; upper income, professional
    - Good Housekeeping, LHJ; 30-50, more likely to be moms with kids
  - Your idea and your characters/quoted sources must match the target demo.
  - Therefore, you must research the magazine.
  - Go to a library and analyze the paper magazine.
  - Magazines that exist on paper and the web are still making decisions on the basis of how the paper magazine is organized (front of book, middle/back of book).
  - Websites, even iPad apps, to this point do not allow you to assess the decisions that magazine has made, about placement and relative value of a story

**Expect to have several rounds of communication with an editor**
• Initial introductory email
• Pre-pitch email, one-graf description
• If they agree to look at more, then:
  • First-draft pitch email
    • Discussion by email or phone
    • Second-draft pitch email
    • Usually requires additional research

Successful pitches accomplish several things at once
• Demonstrate you understand the magazine
• Display your comprehensive idea
• Show that you have done some research
• Showcase your compelling writing
• Give the editor ammunition for pitch meetings (more on that below)
• Do not provide any reasons for hitting the delete key
  • bad idea, poor demographic choice, talkiness, bad spelling

Most pitches have a fairly rigid form. This is not the time to get creative.
• Short version: Why this, why now, why you.
• Long version: The basic components are:
  • Topic background
  • Story proposal (literally: “I propose a story about…”)
  • Whom you will speak to (and have already)
    • In some magazines, which academic research you will review, with titles and links
    • Whether this has been covered before and where
    • How long a story you envision
    • Why you should write it and who you are
• There are variations:
  • Some magazines request 1-page only.
  • Some ask for long pitches. It is possible for the initial pitch to be longer than the final assignment (1000-word pitch v. 750-word story.)
  • Some look for anecdotal-lede pitches, but if you use an anecdotal lede, it must be short.

At most major magazines, an assigning editor does not make the pitch decision alone.
• Your pitch may be reviewed by:
  • Executive editor and editor in chief
  • Editorial board of editors competing for space
  • Monthly pitch meeting of editors with veto by EIC
• Therefore, your pitch (and phone conversations) must give the editor you are talking to enough information to allow him/her to defend choosing your story

Rejection is common
• Do not take it personally. Be pleasant and positive
• if they like their interaction with you, they are more likely to think of you for an idea of theirs
• Do NOT say “another magazine is interested”
  • Do not simultaneous-pitch. (Writers disagree about this but editors universally hate it.)
• Do be prepared to follow up:
  • Re-send 1x
  • Augment email or seek phone convo 1x
  • Then be prepared to re-pitch elsewhere.
  • Pro tip: Assume you will be rejected. Redraft your pitch as soon as you send it. Then it will be ready to send again as soon as it is rejected.

Sources of help:
• publications, e.g. Writers’ Market
• online publications, e.g.: MediaBistro’s “How to Pitch” series
• databases maintained by professional organizations:
  • Association of Health Care Journalists,
  • National Association of Science Writers
  • American Society of Journalists and Authors
• pro bono and academic sites:
  • The Open Notebook
    • www.theopennotebook.com/pitch-database
  • Stanford Univ: Future of Freelancing
    • freelance.stanford.edu/pitch

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Douglas Fox recounts an Antarctic adventure

(Interview by Siri Carpenter)

In 2007, freelance science journalist Douglas Fox traveled to Antarctica with a team of glaciologists studying rivers and lakes buried under thousands of feet of ice. He and the researchers spent four weeks tent-camping on the ice. They spent up to 10 hours a day on snowmobiles, installing monitoring equipment at key sites on the West Antarctic Ice Sheet, always mindful of the bottomless, hidden crevasses that could claim their lives. Fox describes the trip as the most grueling and most satisfying experience of his career. [Icemen Cometh: The Ground Zero of Climate Change appeared in Discover in September 2008. Fox's other stories about the expedition are available here.]

Here, Fox tells the story behind the stories:

How did this Antarctica project come about?

In 2004, someone from the U.S. Icebreaker program who had seen a story I had written for Conservation in Practice, not related to polar science at all, contacted me and asked if I wanted to look into polar science. I went out to dinner with him, never thinking a little person like me could do a story about this. I don’t know why—it’s not like I hadn’t already traveled, for writing projects, to Australia, Mauritius, Papua New Guinea…but somehow I equated going to Antarctica as being way, way more expensive, akin to persuading NASA to let me go into space in the shuttle.

But I started looking into it anyway. I did massive searches of papers, looking at abstracts to find the few studies that would be interesting—most of the papers were asking really micro questions, but I was looking for big, compelling questions. I found Slawek Tulaczyk, at UC-Santa Cruz, whose group was watching as the ice rose and fell on the ice sheet. I loved this idea that there are lakes filling up under the ice, there are rivers running under the ice, mountains under the ice. That was the thing that hooked me. I imagined this story that would begin: “There is a place where rivers run uphill. Everywhere else on earth, water obeys gravity, but here, water bows and bends to the demands of the river responds to a different god, and that god is pressure…”

I called Tulaczyk to talk about his research, and he said, “Want to go?” And I said “Sure!” They were already going, and he wrote me into his grant. Then the grant got turned down once or twice. At that point, I had probably spent 50 or 60 hours on this whole thing, and I remember saying, “Well, that was a waste of time.” Then in 2007, I got an email from him saying, “We’re going.”

What did you do to prepare?

In March of 2007, eight months ahead of time, I spent a day weighing batteries on kitchen scales because I had to tell Tulaczyk everything I would be bringing, because transport is really limited. I had a whole spreadsheet on this—I literally figured out how many hours a day I would be using my computer so he would be able to figure out how much propane to use. I found out I would
have to store any electronics in big Ziploc bags with tons of desiccants, so I planned out how much desiccant I would need. I also tested everything in the freezer. I bought $5,000 worth of camera equipment and put it in the freezer to test it—that made me nervous. I knew that pens weren’t going to be useful, so I loaded up on pencils, especially colored pencils.

Why colored pencils?

Because I wouldn’t be caught dead without. It helps me take notes, be organized, draw stuff if necessary, et cetera. It’s an idiosyncrasy of mine, and this was just an extension of that.

How many magazine assignments did you have before you went?

I had a letter of interest from Discover dating back to 2005. When the grant came through and I finally, naively, sent a formal pitch in June or July of 2007, a conflict had come up with another assignment, and I found out in mid-July that Discover couldn’t take it. My editor was really apologetic. I pitched it to Wired, Smithsonian, National Geographic, National Geographic Adventure, Men’s Journal…but it was one disappointment after another. Men’s Journal had said “maybe,” but by September 20, the editor was no longer responding to my emails.

What was it about the story that made it so hard to sell?

One thing was that this was essentially Antarctica and ice. With climate change, people are kind of tired of that. But there were different reasons. At Wired, they kept asking, “Are they doing something that hasn’t been done before? Is this the newest, first time ever of something?” With Smithsonian, the feeling I got was that they get so many Antarctica pitches from the media fellows, and it’s hard to tell the difference. Men’s Journal asked, “Well, does the scientist look like?” They care about the character, and they’re going for a particular kind of audience, and therefore a particular kind of protagonist. National Geographic said, “Whoa, you gotta give us more lead time.” National Geographic Adventure said, “Ice, depressing; melting ice, depressing.” Someone else—I won’t say who—said, “Well, if you’re the only one that survives, it’ll be a great story.”

In retrospect, as soon as I knew that I was going I should have contacted Discover and taken care of getting a contract. Maybe I would have gotten a yes, and if not, I would have had more notice. As it was, I was still trying to place the assignment as of about two and a half weeks before leaving. Pitching this story probably consumed about 120 hours of my time—it cost me thousands of dollars in lost productivity.

The uncertainty must have been demoralizing.

This ended up being the most satisfying time I’ve had in my career. But when I was getting so many “no” responses in a row…that time was pure hell. I had invested thousands of dollars and I knew there were going to be great stories, but I just couldn’t convince anyone of that; and I couldn’t bring myself to back out of the trip. It was just toxic frustration. But it was also a real exercise in being able to see stories through the lens of how editors see them. I look back on it now and I think a lot of those pitches maybe weren’t as good as they could have been.
Finally, about two weeks before I left, the *Christian Science Monitor* said yes, they wanted two or three stories. We worked out about half a dozen ideas that seemed reasonable. Then about three hours later, I got an email from *Men’s Journal* saying, “Good news, we’re going to commission you.” They accepted that I had made other plans with the *Monitor*, but the *Men’s Journal* story was going to be the big story about the expedition.

**What happened when you got to Antarctica?**

I was in McMurdo Station for seven days, then we were stranded by weather at Siple Dome for nine days, and then we were at the field site for about four weeks. In McMurdo Station, I was hardly sleeping; I was so busy doing things to get ready—collecting food and tents and things. I also did snow-survival training—Happy Camper School, where we got taken out onto the ice and shown how to dig snow shelters and stay overnight in them.

And then I was looking for stories. I had three or four months sunk into this, and I realized ahead of time that the only way to make this trip survivable financially was to get as many stories as possible. The thing about McMurdo Station was that it’s always daylight—there’s always something happening. There was one day when I was working with Slawek and our team to get our equipment ready, and then I went to dinner, and then I went and spent some time with the Andrill [Antarctic Geological Drilling project] people, then I went and had a second lunch at midnight, and then I went out for beer with a guy whose job is dynamiting crevasses, and then around three in the morning I walked out of the bar—into bright daylight—and went to talk to the Andrill people again because it was a different crew of people. You could be awake and working 24 hours if you wanted to. I used as much of it as I could.

**Once you got to the field site, how did you report the story under such extreme conditions?**

I was soaking up everything I could during the days, scribbling down dialogue as it happens. This was the most intense and unrelenting onsite reporting I’d ever done. The wind was always blowing, so you had to be right on top of people with your recorder. You’re writing with a pencil, which isn’t as fast, and colored pencils are worse. You have to take your gloves off, and then your hands are really, really cold. It’s a lot of crap to handle. And some of it’s happening while you’re on a snowmobile—sometimes you think you’ve got something on your recorder and then you listen to it later and all you’ve got is whistling wind.

At night, I would go back to my tent to scribble ideas for a couple of hours. I found that really valuable time because at night, there’s some sort of deeper, larger reflection that happens, and everything that happens during the day fits into a larger context and you start to understand what’s going to be important for your story.

Reflecting in my tent at night while everyone else was asleep, I was also thinking about what did and didn’t work. This trip was a better chance than I’d ever had before to learn how to report on site. I had opportunities to make mistakes, and opportunities to learn from them and get it right the next time. I learned when to just let people talk, and be on the fly on the wall, and when it worked better to dive in and poke the animal with a stick to get it to talk.
You were also doing photography.

Yeah, I probably spent about 60 percent of my effort on photographing, and I learned a lot. I started out being really polite with the camera, and the shots were like crappy vacation shots. It was only when I learned to be merciless with the camera, and really get in peoples’ faces, that I started to get better shots. But it was really hard to be both the reporter and the photographer because you have to be in different places for the two things.

How did you juggle that?

I decided that I would devote blocks of time to being either a writer or a photographer—a couple of hours, or a whole day. That was the right decision, but it was hard because you’d miss stuff.

You write about a horrifying moment when you actually stepped into a crevasse without realizing it was there.

Yeah, that…that was very scary. It was matter-of-fact and utterly calm and emotionless at the moment it happened. But for weeks (and to a lesser degree months) after that I would suddenly jolt awake with these images of the event having turned out differently, of me being wedged deep inside the crevasse and beyond help. Even before that happened, though, I could feel this tension about the crevasses. One thing that struck me when we were there was how much of our lives was about crevasses and not being on top of one. I was just getting every little bit of that down in my notes because I just felt this tension build up over the weeks. I did use some of that in stories—but I used about one quarter of what I had.

Did you spend much time actually writing while you were in Antarctica?

When I was in McMurdo, I was just soaking in stuff—I wasn’t writing at all. I would burn my recordings to CD every night, and back up everything like crazy. I had three hard drives. At night, I would scribble thoughts and things in my notebooks, things I wanted to try out the next day, questions I wanted to ask. It was only when we got to the field camp that I actually started doing any real writing, because it was only then that I had a couple of 1,200-word assignments solidified with the Monitor. For the big story for Men’s Journal, I just did a lot of outlining, constantly changing it, scribbling vignettes.

The field camp, I have to say, wasn’t a good place to write. We each had a very small tent like you would take backpacking. In the main tent, where all the electronics were, you couldn’t really get work done when there were three other people in there—you couldn’t think straight. And then when they left for the day, you just got so cold. I would intersperse writing with running out and doing a whole bunch of digging or something, because exercise was the only thing that would warm you up.

How is it that your big story ended up being for Discover instead of Men’s Journal?
When I got back, *Men’s Journal* wanted to see the photos first, while I was still working on the manuscript. That was telling, that it was the images that were going to make the story work for them. The story ended up getting killed by the photographs. One huge lesson was that if at all possible, you should bring a photographer. If I’d brought a photographer, I probably wouldn’t have had the story killed, and I would have been able to spend all my time being a reporter. I might have gotten a lot more dialogue if I hadn’t been fiddling with a camera all the time.

Another lesson was that the photos that I took were hugely important for the story, even if they weren’t publishable—they were great note-taking.

After Men’s Journal killed the story, I started shopping it around again, without success. I didn’t know what I was going to do; I was struggling once again. At one point I was finishing up another story with my editor at *Discover*, and she said, “How did that Antarctica trip go?” and I explained it to her, and she said I should send her a pitch. I sent her a new proposal—way better than anything I had written before I had gone, because I had the good material. She showed them the proposal, and they said yes.

Another thing that I would have done if I could have is that I would have gotten more high-quality multimedia out of it. Even if you don’t sell it, you can put the video on YouTube and link to the story, to drive more people to read the story.

**Will you go back to Antarctica?**

I thought that trip was going to be a once-in-a-lifetime thing. But it turns out that I’ve ended up going three years in a row—one more by plane and once by ship. On those trips a photographer was assigned to the story, so we went as a team on my second and third trips to Antarctica, in 2008-09 and 2009-10.

Having tackled one project like this has led to other things that I didn’t expect. More than ever before, I came out of this with what feels like a ready-made beat. You’re talking to somebody who never took a single earth sciences class in his life. Not even in high school—I skipped that one. But I discovered that I really like earth sciences. I put so much effort into this trip, not only the science but the lore and the history of Antarctic exploration, and I came out of it feeling more in touch with an area than I ever have before. For a career, I think it’s a positive thing to develop a beat—you can make deeper observations and ask better questions.

**A glimpse behind the scenes:**

- Field notes
- Unsuccessful pitch letters:
  - *Discover* (2005; pre-pitch); *Discover* (2007); *Wired* (2007); *Smithsonian* (2007);

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Pitching errors: How not to pitch

(By TON guest contributor Laura Helmuth)

Writing a good pitch is really tough. Writing a bad one is easy. Editors see the same mistakes over and over again, even from good writers. A few weeks ago, seven editors from a variety of publications participated in a round-table discussion, in a series of group emails, about how NOT to pitch. I started the conversation off with questions, and then we talked among ourselves about our horror stories, pet peeves, and practical advice. Think of The Open Notebook’s Pitch Database as a lesson in how to make editors say “yes.” Below, dear writers, is how to inadvertently make us say “no.”

Editors participating in the discussion were:
David Corcoran, New York Times
Christine Dell’Amore, National Geographic News
David Grimm, ScienceNOW
Meg Guroff, AARP The Magazine
Laura Helmuth, Smithsonian
Robin Lloyd, Scientific American Online
Adam Rogers, Wired

Laura: Let’s start with one logistical question: email or phone?

Robin: Email pitches please.

Christine: Yes, definitely email pitches.

Meg: Email by a mile. The phone is intrusive. Email lets me see how you write; lets me forward your pitch to colleagues for consideration; and lets me ask follow-up questions or send a quick “no thanks” without getting dragged into a 20-minute conversation.

Adam: Glad to see I’m not alone in preferring emailed pitches… and then emailed again, because I will admit to being the kind of editor who probably needs a prod to respond. Email is great for time-shifting, obviously; but the risk to the writer, especially one whom I don’t know, is that unless the idea is a killer the email could fall below my horizon. And in truth, I often prefer a little preview-teaser email with just the logline of the idea, allowing me to say, “sure, tell me more,” instead of the full pitch. It’s weird how off-putting I have come to find the experience of clicking open an email only to have to wade through a two-graf anecdotal lede I’m not sure I’m going to care about. The best sales pitches, I think, start with a personal connection—and an opportunity for me to tell a writer, “Nope, I’m the wrong editor for this, you should email TK.”

David G: Calling is a definite no-no in my book. I find it very unprofessional, and I especially hate when press officers do it (which is becoming a more common occurrence).
David C: Agreed on e-mail pitching. I don’t like cold calls and I respond to them coldly. Freelancers seem to have gotten the message, because I get very few phone queries these days (and several a day by e-mail). PR pitches are another matter, but let’s not talk about them.

Laura: What’s the most common mistake you see in pitches?

Robin: Most common mistake—pitching a topic, rather than a story.

Christine: The most common mistake I see is freelancers who don’t do their homework and read our website first. I.e., the majority of new pitches we get are for 10,000-word feature stories, like you’d see in National Geographic magazine, whereas we publish mostly 600-word-or-so news stories.

Meg: I’ll agree with Christine that a lack of familiarity with the publication is the most common. Another is presenting a story as something you’re dying to write, rather than as something our reader would be dying to read. Successful pitchers don’t lead with their own desires or credentials. Instead, they focus on what’s amazing about a story and how the story would fit into what the publication is trying to do.

Adam: The most common mistake I see is a lack of familiarity with the magazine—pitches that are aimed as web articles, pitches on subjects we’ve covered (that don’t advance the story), pitches for stories in a format or with an approach that Wired would never do. As an editor, I only want to feel loved, like the writer knows my true soul. Otherwise: no relationship.

David G:
— Not knowing the outlet (i.e. pitching us technology stories, which we almost never cover)
— Just forwarding a press release
— Pitching the same stories everyone else is pitching (i.e. Science, Nature, etc)
— Pitching after the embargo has lifted

David C: The single most annoying thing I see in first-time pitches is a lack of awareness of context. Why is this story suitable for the Times? What, if anything, have we said about it before? What makes it new? Why should a reader care about it now? This is basic homework every writer should do; if I don’t see it, I’m most unlikely to read on. (I do try to respond to all e-mails that were individually sent to me.)

Adam: Ooh, can I add one more tiny pet peeve? When a pitch consists solely of a writer saying, “Hey, did you see this? Might be worth a piece.” And then copies in a URL. That is…not helpful to me. And it happens a lot.

Laura: It’s nice to see that many of these mistakes are universal—and so easy to avoid. Writers, use the search box. I often get pitches for stories we ran a few months earlier. Especially if it’s a story that’s been around a while, writers shouldn’t assume they’re the first ones to tell us about it. If they have some fresh angle, that’s fine—but they have to spell out why their story is different.
David C, one of the mistakes I often see—and I bet everyone else does, too—is a writer pitching a story from Tuesday’s Science Times. I tend to get these pitches on Thursday. Do they think I don’t read the NYT? Or that I forgot the story within two days?

Adam, I love the relationship image. We want to be taken seriously, loved for who we really are!

As for how to tell a story from a subject, I hope any journalism professors out there invest some more time in teaching this distinction. Better to learn from a classroom, workshop, conference or TON website than to learn from years of failed pitches.

Laura: *If you’re comfortable revealing this, do you keep a black list? If so, what sort of pitch-related behavior does it take to get on that list?*

David G: I only put people on the black list after they write for me, usually because they either plagiarized or because their writing/reporting/attitude was so horrendous that I never wanted to work with them again.

Robin: It’s not pitches that induce aversion to a writer; it’s the quality of their writing and rewriting afterward, for me. Some writers send extremely weak pitches such as Adam described, but I’m still willing to work with the writer on those pitches at times, because I know they will do a good job in focusing/finding the story, and in writing and rewriting.

Meg: As for blacklists, there are a few writers whose tone-deaf pitching behavior demonstrates that I can’t rely on them to represent me or the magazine appropriately. I had one writer pitching me periodically for years on the idea of profiling a particular 1970s rocker of whom she was enamored. No matter how frequently, gently, or baldly I declined this proposal—at first on the merits, and then because she was clearly not objective on the subject—it kept coming back, to the point where I was morbidly delighted to see it in my in-box. But of course I couldn’t assign that story to her, or anything else for that matter. I just didn’t trust her judgment.

Adam: You guys have better blacklist stories than I do. I can’t think of a writer I’ve decided never to work with based on pitches alone. It’s always a function of what comes after the pitch—how good the work is, how easy the writer is to work with. I think I have a complicated cost-benefit algorithm involving the time it takes to produce a story versus the quality of the story, the quality of reporting versus the quality of writing versus the willingness to be edited, the quality of ideas (and their timeliness) versus the ability to execute them…I don’t know. When they replace us all with AIs the EditBot 6000 will be able to articulate all that much better. (But will it dream?)

Repeated mistakes, too, are a good way onto my blacklist. Rudeness or lack of cooperation with fact checkers gets a yellow card and then a red card if repeated.

Meg: I’ve used writers whose pitches demonstrated they would not be able to pull off the story without a lot of help…but it had to be a truly brilliant, original idea, or a story that only they
could tell… doesn’t happen often. Right now, I’ve got one would-be personal essayist with an unusual story who kindly agreed to be written about instead of hired.

**Laura:** *What’s the most horrible, ridiculous, epic-fail pitch you’ve ever gotten?*

**Laura:** Mine involved one of the mistakes we covered already—forwarding a press release or news story—only the writer put a special twist on the mistake by not revealing that he was simply forwarding the guts of a newspaper story. He made it look like his own deeply reported pitch. The pitch was about animal cognition and it listed several then-recent examples of surprisingly smart behavior. You’ve probably heard of most of these studies—sheep that recognize individual faces, jays that stash food in different places depending on which other birds are watching, a New Caledonian “cow” named Betty that could bend a wire into a hook to extract food from a bottle.

Not knowing that the writer was merely forwarding a story from the Guardian, I asked some follow-up questions. I mentioned that I assumed he’d just mistyped the cow business and knew, of course, that it was a “crow” named Betty.

Next mistake: he didn’t believe me. No, he said, his “source” confirmed that it was a cow. That’s when I did a search and found the Guardian story and figured out that he’d plagiarized the whole pitch.

He was right, though: his source did confirm that it was a cow. On second reference, the story referred to her as a “bovine” that could bend wire into a hook—another reason publications should have editors with at least a smidge of science knowledge.

**David C:** Wow … I can’t top that, and can’t really think of the pitch from hell. I get a lot of mediocre pitches but nothing dramatically, howlingly awful. There was the correction from hell, which resulted from a freelancer’s completely misunderstanding government data and confusing reported problems with actual injuries—a distinction the writer seemed incapable of grasping even after his sources explained to him that he’d gotten it wrong. This required me to write a whole new corrective article for the next week’s section. Needless to say, he has never written for us again on anything remotely involving interpretation of data.

**David G:** As far as worst pitch, that would have to be a freelancer who pitched me a couple of years ago about an AIDS study. It was a very controversial study, promoting (if I remember correctly) an unusual therapy. Fortunately, I passed the pitch by our AIDS expert, Jon Cohen, who did some digging and found out that the freelancer’s mother-in-law was an author on the paper. I confronted the writer about this, and he told me it wasn’t a conflict of interest because he could be objective about the study. As we were going back and forth I noticed something else troubling: The freelancer himself was mentioned in the paper’s acknowledgments. When I brought that up, I didn’t hear from him again.

Top that! :-(

**Robin:** I can’t remember an epic fail pitch, but almost every pitch I get is fundamentally flawed—overly topic-driven (not a story), not tailored to our publication(s), full of structural
problems, too long, too short, too publicity-driven, or has factual errors in it. So I’m starting to rethink pitching and consider adopting these positions: a) pitching well is very hard to do, especially to multiple publications with their diverse audiences, tones and themes, and b) it is my job to work with writers who pitch to me to see if there is a good story in there for SciAm and to help guide them/us to it.

**Meg:** Ha, I defer to the son-in-law and the wire-bending cow. Most of my favorite horrid queries never get anywhere close to acceptance—they tend to involve writers going on for pages about themselves before mentioning a story idea. Once in a while I’ll get a pitch from someone who wants to profile a celebrity, but wants my assurance that we’ll take the story before even approaching the celebrity to request an interview! As if the mere fact that this person had heard of the celebrity were enough to merit an assignment.

**Adam:** Worst pitch ever: I don’t remember. I mean, the really bad pitches are easy. You just politely say no, and you never speak of them again. And the really great pitches are easy: You say, “Writer, here is money to do the thing you say you can do for me. Please don’t suck.” The really hard ones are the pitches that almost get there. A pitch with a great idea embedded in really terrible writing just kills me. What do you do? Take a flyer on the writer? Make an inevitably ham-fisted attempt to buy the idea but assign it to someone else? No good options there. A well-written pitch about something that isn’t right for *Wired*, or that we already did, often earns a “no, but please pitch again.” A great idea in a pitch that won’t get past our meeting process engages me—I work hard to develop pitches before my colleagues ever get a chance to evaluate them.

**Meg:** On a seasonal note, does anyone here respond favorably to Christmas cards from writers they’ve never hired? I’m on several of these lists and I think it makes the writer seem sort of lonely and bad at prioritizing. It’s not a blacklisting offense, but not something that makes me want to hire the person, either.

**Christine:** To answer Laura’s question, I don’t keep a black list. I can’t think of an epic-fail pitch, though there has been epic-fail behavior. We had a writer a few years ago who would pitch us a story then obsessively follow up. For one, he’d call each of us not long after emailing the pitch (we all sit in the same room, so each of our phones would ring in turn) and email us continually asking for an update. He became so annoying that eventually our managing editor had to remove him from our contributor roster. So I guess there is a limit to telling writers to be persistent!

I’ve never gotten a holiday card from a person we haven’t hired as a writer, though I think it’s nice to receive them from contributors. (That said, I think birth announcements, which we often get, are a bit weird!)

**Laura:** Christine’s anecdote about the writer who followed up obsessively immediately after sending in a pitch raises one question: How persistent is too persistent?
Laura: We occasionally have a writer pitch a story to one editor, get turned down, then send the identical pitch to a second editor, get turned down again, and pitch again. That is too persistent. And a good way to get blacklisted—it’s sneaky, and this business requires a lot of trust. I usually reply to pitches within a week and don’t mind getting a polite nudge if a week has gone by. If it’s sooner than that, or not so polite, that’s too persistent. (Exceptions for breaking news or a story with travel arrangements that need to be made immediately.)

Robin: Being reminded every two weeks on a pitch to which I’ve yet to respond doesn’t bother me. More frequently than that is a bit annoying but sometimes it works too—at least for writers with whom I regularly work and who I know could probably sell a story elsewhere if I don’t take it. I know they have to make sales, and that if I tarry, I am holding back their income and they are entitled to pitch elsewhere after some indeterminate amount of time. Relationships matter, again.

David G: I have a current freelancer, who, about two months ago began pitching three to four stories a day (I’m not making this up). He’d send them in a batch, or—even more frustratingly—send them one after another as soon as I rejected the previous one. I could tell from his pitch letters alone that he wasn’t a good writer, and his machine gun pitching was irritating the heck out of me. But… he was finding some good stories. So I let him keep pitching, and occasionally I took some of them. But to cut down on the pitching, I told him he couldn’t pitch me more than one story a day. I still cringe a bit when I see his name in my inbox, but at least it’s not as incessant as it was before.

Meg: It’s a good idea to ask the editor when you should check back. Depending on the publication you’re pitching, the proper interval could be daily, weekly, monthly… I appreciate a polite pester in the time frame I’ve suggested—it shows me the writer is eager and can follow directions.

Christine: I’d say anything beyond an email a week (unless, as Laura says, there’s a time-sensitive element) is too much. Also, phone calls are not really preferred—it’s better to respond to the person after I’ve had a chance to run the idea past the other editors.

Adam: On persistence, I’m reminded of something Atlantic editor James Gibney said at a panel I was moderating: “There is a special place in hell for editors who don’t call people back, and I am going there.” I would say, if I haven’t responded to your email in five working days, you should email me again and ask what’s what. I will then make some kind of pathetic apology and dedicate some time to what you’re pitching.

David C: I don’t fault persistence, even to the border of rudeness; these writers are trying to make a living, whereas I have a relatively secure job. But as noted before, a writer who is clueless about our needs is unlikely to have the wherewithal to write a decent story for us.

Laura: Does bad pitch hygiene get in the way of your relationships with freelancers?

Laura: I mean relatively trivial things like someone not changing the subject line when they send a new pitch. Or answering a question but not appending the earlier email exchange, so I
can’t tell what the original question was. Or copying and pasting a pitch to some other magazine without changing the name of the magazine. (I get pitches all the time for stories that would be “a perfect fit for National Geographic.”)

Adam: “Pitch hygiene” is a great term for something that I’ve never been able to name. Like, I know I probably should just let it go when writers think they’re being helpful when they embed a ton of links in a pitch (even though my build of Entourage unembeds them and leaves me with a document shot through with full-sized URLs, rendering it unreadable). I know I shouldn’t hold it against them when a pitch shows up in three different font sizes, five different fonts, and a lot of boldface. And I know that it’s an honest mistake when someone gets my name wrong, or the section I edit, or the name of my magazine.

But I’m going to come clean: This stuff makes me nuts. I am begging of you, dear writers: Make it easy for me to read your pitch. Let me introduce you to my friend, Plaintext. I think you would like each other.

Hey, that sending-pitches-to-multiple-editors thing is hilarious, huh? Six of our assigning editors sit within 30 feet of each other, with no walls between us. That double- (or triple- or quadruple-)teaming thing is something we notice, and are not kind to.

Robin: Thumbs up on pitch hygiene. It slows me down particularly when earlier exchanges regarding a pitch aren’t appended. Then I have to go find the old email, and guess what… I won’t. It’s close to a kiss of death to your pitch. I have so many stories in my brain buffer daily—it’s not that easy for me to remember your pitch/email from a few days ago without context.

Meg: Don’t title your email “From [Your Name Here].” It indicates that you may be an idiot—all email programs tell you who the emails are from. I agree that links aren’t great, but they’re better than scads of attachments. I’ve had people send clips as PDFs, one PDF file per page. If you can’t master this sort of thing, get your parents or children to help you.

David C: Thanks, all. I can’t really add to those good thoughts, except to say multiple pitches are especially annoying—especially three or four in the same e-mail, or the same week- or two-week period.

Christine: I’d say not really that much if the person has already proved herself/himself as a solid writer/reporter. I also tend to give people the benefit of the doubt at least once, probably because I’ve made similar mistakes myself as a freelancer!

Adam: I do agree that I don’t need to see a flurry of PDFs. When I’m ready to look at clips, I’ll ask for them. Odds are if I’m thinking of working with a writer I’m going to Google him or her myself and root around, anyway.

Laura: Do you have any advice for good writers (not the ones who misspell your name or pitch subjects rather than stories) about how they can make their pitches clearer, stronger, more efficient?
Robin: For writers with whom I have a relationship, sometimes they figure that means they can send short, two-sentence pitches all the time. I’d still prefer a longer pitch of three or so brief paragraphs. Some pitches go on for four or five lengthy paragraphs, or longer—that is too long for my purposes.

David G: Final advice:
— Always write “pitch” or “query” in the subject line, so I know it’s not a press release (and so I don’t automatically delete it).
— If you’re not sure what to pitch, write me and ask me what sorts of stories I’m looking for.
— Don’t pitch the big stories from Science and Nature. That’s what everyone else pitches. Find me the cool, under-the-radar stories that will become exclusives.
— Since you’re pitching me a web story, always mention if there’s multimedia. Sometimes that can put a mediocre story over the top.

Robin: Oh yes. I want to underscore these points of David’s:
— write “pitch” in subject line please
— don’t pitch from Science, Nature, PLoS or PNAS—I’ve got those covered
— if you’re not sure what to pitch, email me and I will send back a standard “what I seek” email that I have prepared for such purposes.

Meg: Advice for good writers: Trust your story. Don’t start your pitch with who you are or who we know in common. Grab me with a lead-in that shows what a fantastic idea you’ve got and what a fantastic writer you are. Then you can briefly state the qualifications that make you perfect for the assignment, including anyone I know who can vouch for you, if there’s anyone. Don’t offer to provide photographs unless they are rare historical images. We’re a glossy magazine that works with top photographers, and unless you regularly shoot for National Geographic, your photos are not going to cut it. The offer makes you look like you don’t understand what we’re doing.

Be nice. Life is short and editors are human beings. I would much rather work harder to coach someone who is open-minded and pleasant than invite a known jerk into my life, no matter what their copy looks like.

Christine: In our writing guidelines, we ask freelancers to send us a potential headline and 135-character summary along with their pitch. This helps zero in on the news quickly, especially if their pitch is rambling or unclear.

Echoing my first comment in this thread, I can’t stress enough that the person shows some knowledge of the publication in their pitch. If they’re pitching a news story about a new species of Indonesian frog, mention that covered another species in the genus in March 2010 and this would be a great follow-up, etc.

Adam: Meg, I disagree with you about starting a pitch with a zinger of a lede. Even if it’s great, that’s two paragraphs I have to slog through before I know what the story is about—assuming it’s a magazine-y anecdotal thing. I’d much rather my first round with writers—whether I know
them or not—be less formal to start, on the order of, “Hey, I have a story about TK; it’s important for these reasons… would you maybe be interested?” I may be wrong about this, but I also prefer that kind of informal exchange as a way to assess writing skills. It’s all an audition, right?

Advice for good pitches? Don’t write a pitch longer than the story you’d be assigned. Our front-of-book section stories rarely go longer than 300 words. Know what section you’re pitching, and maybe even what kind of item. Start essay? Prototype? Feature? Using the terminology of my magazine has the double benefit of making my life easier by saving me from having to think about something, and also proving that you know whom you’re pitching. Be clear and concise—there’ll be time for stylistic shenanigans later.

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Samples from the TON Pitch Database

Douglas Fox (Scientific American)

The story

“The Physics of Intelligence” (published online as “The Limits of Intelligence”)
http://www.scientificamerican.com/article.cfm?id=the-limits-of-intelligence [subscription required]
by Douglas Fox
Scientific American, July 2011

Fox notes: This pitch was originally written to peg the story for a special "the end" theme issue of SciAm which ended up running long before this story did. "End of intelligence" was always a stretch, trying to shoehorn the story into that special issue, so it's probably fortunate that I never had to try to actually write it to that theme.

The pitch

The End of Intelligence

Several weeks ago scientists at IBM unveiled the largest computer brain simulation to date: 1.6 billion virtual neurons connected by 9 trillion synapses. The simulation ran on Dawn, a Blue Gene /P supercomputer—one of the fastest in the world—consuming 1 million watts of electricity. Even so, it ran at only 1/600th of real time. At current rates of supercomputer growth, the 1,000-fold greater computing capacity needed to simulate an entire human cortex in real time could be available by 2019. But here’s the hitch: That computer will consume up to a billion watts of electricity, equal to a nuclear power plant—an annual power bill of $1 billion. It raises an unsettling truth: At some point, limited resources—financial and energetic—may constrain our ability to scale up transistors and computers to achieve bigger and bigger feats of number-crunching.

What few people recognize is that biological intelligence—brains—may well face similar limits. These limits stem from the very nature of neurons, axons, and the statistically unreliable ion channels on which they rely. They are rooted in the ways that energy consumption and wiring patterns of brains scale (according to power laws) as brains increase in size from the 2-gram shrew to the 100,000-kilogram blue whale. “The relationship between energy and information is rather deep, and grounded in thermodynamics,” says Simon Laughlin, a theoretical neuroscientist at the University of Cambridge.

If there’s a limit to the intelligence that can be attained by brains made of neurons and ion channels as we know them, then this spawns another, more profound question: Has the human brain—which already devours 20% of our calories—approached this limit? In Scientific American’s special issue on THE END, readers would enjoy contemplating the question of whether hominids’ evolutionary meander toward intelligence has approached
its thermodynamic conclusion. Positive selection for cognitive capacity (if it occurs) might well squeeze a few more IQ points out of our brains in the next 50,000 years—but these gains may be small, and achieved at great cost. Such a thesis is bound to evoke strong opinions, strong responses, and strong readership.

Constraints on intelligence are rooted in the energetics of signal-to-noise ratio. Whether in neurons or digital electronics, doubling the ratio generally requires quadrupling the energy. In brains, noise arises from the fundamental of unit of neural computation—the ion channel, which produces the electrical currents in action potentials. Single ion channels open and close stochastically. Laughlin has found that this random behavior by ion channels places a lower limit on the brain’s ability to miniaturize its axons (the telegraph wires which carry action potentials).

The brain can save energy by having smaller axons with fewer ion channels. But if an axon is too small, the random opening of a single ion channel can trigger an accidental action potential; axons must be fat enough to prevent this happening too often (even so, Laughlin calculates that the brain has pushed miniaturization to its limit: the skinniest axons fire up to 5 spontaneous action potentials per second).

Laughlin and David Attwell have determined that action potential signaling comprises 80% of energy consumed by the brain’s grey matter. If one includes white matter (composed entirely of axons, albeit myelinated ones), then the fraction of energy for the overall brain that goes toward communication is probably at least as high.

As brains get bigger, the cost of communication only grows. Based on brains from the pygmy shrew to the elephant, Terrence Sejnowski (Salk Institute) has determined that the volume of white matter grows faster than the volume of grey matter as brains increase in size. This is because axons not only increase in length as the brain grows; long-distance axons also get fatter. Fatter axons transmit their action potentials more quickly. Samuel Wang (Princeton) has found that the fattening of axons in larger brains means that across a wide range of species with different brain sizes, the fastest transmission times for cross-brain action potentials is surprisingly constant—about 1 millisecond. It suggests that such fast communication is mandatory for effective brain function. And since fatter axons consume more energy, it suggests that as brains increase in size, the energy demands for communication grow more quickly than the size or processing power of the neural network. (As axons grow fatter, spike velocity increases linearly with axon diameter, but energy consumption increases supralinearly.)

Dmitri Chklovskii (HHMI, Janelia Farms) has found that brains have evolved to minimize their wiring costs. So expensive are these long-distance axonal connections that as brains increase in size, the proportion of connections which are long-distance seems to fall. It implies that—for energetic reasons—as brains get larger, a bottleneck is increasingly imposed on long-distance communication.

These same long-distance connections that are so energetically expensive are also probably critical to maximizing the brain’s global computing capacity—that is,
intelligence. MRI tractography, which allows large-scale tracing of long-distance axons, bares this out. A spate of studies presented at the Human Brain Mapping meeting in June 2009 in San Francisco reveal “small worldness”—a critical balance between local and long-distance connections—as a predictor of IQ.

Trim some of those long-distance connections to save energy, and you might well decrease the computational power of the brain. “It’s tempting to speculate whether some kind of coherent [neural network+ behavior can be lost with fewer connections,” says Vijay Balasubramanian, a physicist at the University of Pennsylvania who also studies brain science and information theory.

To Balasubramanian it makes sense, given all of these considerations, that evolutionary investments in more powerful brains probably incur disproportionately greater costs for each incremental improvement in computing capacity. “I think there is a law of diminishing returns for many reasons,” says Balasubramanian. “It relates to fidelity of communications, energetics of communication, and possibly even the need for heat dissipation *through an increasingly extensive vascular system*. It will not be a hard limit, but rather a soft-edged limit which is approached asymptotically—similar to legislatures becoming progressively less willing to fund supercomputers with $1 billion or $10 billion or $20 billion annual power bills.

One caveat: It’s tempting to equate brain size with intelligence. Not only has this practice produced some horrible results over the last 300 years—it oversimplifies things. A cow with a 1000-gram brain is hardly smarter than a mouse with a 1-gram brain. In fact, across mammals, brain size grows with body size according to a power law—for the simple reason that larger bodies require more neural housekeeping unrelated to intelligence, such as more skin area to be monitored by tactile nerves, larger eyes and retinas, more muscle mass to innervate, and so on. “What probably matters is how far you are above the line,” says Charles Stevens, a computational neuroscience at the Salk Institute. Humans, he says, possess brains that are triple the size they should be based on body mass alone.

It’s possible to deviate from the line imposed by power laws, as humans have, but only at high energetic costs—and only when rare circumstances of evolution and environment provide a selective force and a means for amassing the necessary resources.

Other limits are sometimes evoked as constraints on intelligence. The width of the birth canal (imposed by bipedal walking) is said to limit the size of a newborn’s brain. But thermodynamic and power laws only deepen these limits. Intelligent brains are probably born immature by necessity: learning and experience (and not some one-size-fits-all prenatal development program) are probably what produces intelligence. But another power law limits our acquisition of experience and learning—the length of our lifespan which scales across vertebrates according to body mass and metabolic rate.

The story which I propose is best written by a journalist in that it goes beyond the work and thinking of any one scientist. My goal in writing this story is not to lay down a new
truth (!), but rather to raise an interesting question—and prod the scientific community into beginning the conversation which will answer it. A number of people are already studying energetic, noise, spatial, and wiring constraints on brains—but no one has yet asked this more profound question. In weaving my argument I’ll draw not only upon friendly views (Balasubramanian and Laughlin), but also views of people less likely to agree (Stevens). “It’s a very interesting point,” says Balasubramanian. “It would be nice to articulate this point. I think the question deserves to be asked.”
Samples from the TON Pitch Database, continued

Laura Beil (This American Life)

The story

“Thugs [Act Two: Lifers]”
http://www.thisamericanlife.org/radio-archives/episode/442/thugs
by Laura Beil
This American Life, July 29, 2011

The pitch

I want to tell the story about a woman who tried to make a difference, and she did, in the life of one young, very disturbed boy. She found him a new home, found his mom a new job, and she got him into a good school. He was going to be one of the success stories, a kid rescued from a cycle of poverty and neglect. But then, the boy let her down in the most horrible way imaginable. Now, the universe has given her another chance.

Here is her story:

Kenneth Williams was not a killer, at least not yet, when Ton’Nea met him for the first time. The boy was 12, brought to her on the second day of her first job. She saw a wisp of a kid, no more than 5 feet tall, with twigs caught in his hair and scratches streaking his face and forearms. Kenneth had just been captured in the woods of Central Arkansas after escaping from juvenile prison. Ton’Nea Williams (with a coincidental last name) was a fresh college graduate, eager to save the world one kid at a time.

Newly hired at the Alexander Youth Services Center near Little Rock, Ton’Nea was to make Kenneth her first project. She had good reason to believe in the kids everyone else gave up on. She herself had been born to a teenage mother who would eventually leave Ton’Nea and her eight siblings in foster care. Unbelievably, she had emerged as an elegant, university-educated young woman, dedicated to helping the most troubled of troubled kids. With the state’s assistance, Ton’Nea felt she could give Kenneth the mooring she never had: a stable home, a consistent education, a trusted mentor.

At their first meeting in 1993, she joked with him about whether he was a distant relative, since they shared the same last name. She found him endearing, the way he answered her questions with “Yes, ma’am” and “No ma’am.” They talked about his mom, who was away from home most nights working two jobs to support him and his sisters. In the years that followed, she put him on a path to productive citizenry, to make him the icon for everything that worked about the beleaguered juvenile justice system in Arkansas. She helped his mother find a better job so she spend more time at home. With state funds, she relocated the family to an affluent neighborhood with a decent school, just around the corner from her own home. She taught him to trust in himself, even paying him on
occasion to babysit her children, just to get him used to the feel of responsibility. Maybe she didn’t love him like a son, but she felt she understood him in a way no one else could.

So no one was more surprised than she when, on a Sunday afternoon in 1998, Kenneth shot and murdered a college cheerleader outside in Pine Bluff, and left her boyfriend for dead. (The boyfriend survived, and was able to crawl to a road and flag down help.)

Ton’Nea Williams has the kind of story *This American Life* was made for. It is the narrative of one woman’s failure to stop a murderer, despite applying everything she and social psychology tells us we need to do. It raises questions that we are uncomfortable asking, but ultimately must: Are some children simply beyond redemption, despite all we do for them? And if we believe that no child is a lost cause—as we all want to—what’s the way to reach them? If Ton’Nea could not save Kenneth, could anyone have?

He was convicted of the Pine Bluff slaying, but spared the death penalty, largely because Ton’Nea testified on his behalf. She thought the police must have arrested the wrong boy, so steeped was she in denial, even as he taunted the victim’s family in the courtroom. The witness stand was the last time they saw one another face-to-face. Less than a month after Kenneth began his sentence, he broke out of prison again, killing a farmer and fleeing in the dead man’s pickup. He had tried to call Ton’Nea just hours before his escape, perhaps feeling the welling of his own desperation and fury, trying to contact the one person who might throw him a lifeline. He was caught after a high-speed chase in Missouri, a chase that left yet another person dead, and is now awaiting execution in Arkansas.

His story ends there, but Ton’Nea’s goes on. For years, the failed mentorship to Kenneth left her, as she says now, an emotional cripple. Even still, she couldn’t let go of the hope that the police had arrested the wrong boy—until recently, when he wrote a 5-page letter to the Pine Bluff newspaper, admitting to the two murders, and even a third he was never arrested for. When she learned of the confession, she could hardly breathe.

The thing is, she hasn’t given up on saving the world. She quit her job at the state corrections department and began a career in education, believing that kids must be reached before they become entrenched in the justice system. Just after Kenneth’s confession, Ton’Nea’s sister, who had given birth to her first baby in the 8th grade, and had three more in rapid succession, lost custody of her four sons. At the time, they were all under 10. With a mother who had been mentally and physically absent, the boys were three grades behind in school. Ton’Nea saw four African-American boys on the brink of becoming wards of the state, boys just like Kenneth the first time she met him—and she’s trying again. She and her husband legally adopted the four nephews she barely knew, even though they already had three of their own children.

She has not spoken to Kenneth since his second conviction, but has written him a letter. Mostly, she wants to know what went wrong with his life. Did she fail him? Was there something else she could have done? Why did he hide his rage from her? The letter sits at home, unsent. She’s still not sure she wants to know the answer.
Today, Ton’Nea is an assistant principal of a high school in Texas, a school with a student body of largely low income, minority children. She searches for Kenneth everyday, in all their faces, haunted by feelings of regret, despair and hope. The redemption she seeks most is her own. Since the day she told me her story, it has stayed with me, and it will stay with everyone who hears it.

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Samples from the TON Pitch Database, continued

Christie Aschwanden (Miller-McCune [magazine has since been re-launched as Pacific Standard])

The story

“Convincing the Public to Accept New Medical Guidelines”
by Christie Aschwanden
Miller-McCune, April 20, 2010

In an interview at The Open Notebook (http://bit.ly/dhfKSl), Aschwanden describes how she pitched this story:

I first pitched the New York Times Magazine in September of 2008, with a recommendation from another editor there, but I never even got a response. Then I pitched it to Mother Jones and got an editor there really interested, but in the end, the higher-ups thought it was maybe just a little too wonky. At that point, it really just kind of sat there. I was feeling a little demoralized, and I was busy doing a lot of different stuff, so I kind of dropped it...In the summer of 2009, I was at the Aspen Health Forum working on a story for the Los Angeles Times, and I was really taken aback by some comments by the then-CEO of the Susan G. Komen Foundation, regarding the new study that had found that mammography was turning healthy women into cancer patients, and that over-diagnosis was a significant problem. This CEO told me straight out that this problem doesn’t exist. I thought, “Wow, this is huge.” ...That re-energized me. So I kept thinking about it, and I pitched it to a couple of women’s magazines, with the mammogram angle. I think people didn’t want to touch it, at least in the way I wanted to write about it. I think they wanted stories reassuring women that it’s OK to ignore these findings...I had a lot of encouragement from a friend, who kept telling me, “Don’t give up on it.” I knew [then Miller-McCune editor] John Mecklin, and although I had never written a story for him, he had invited me to pitch him. I had started reading Miller-McCune and thought it was a terrific magazine and this was a great fit because they did a lot of insightful analyses of complex issues. So I sent him the pitch last November. I didn’t hear from him, so a little over a week later I got back to him and it turned out he hadn’t received it. When I resent it, he assigned it almost immediately.

The pitch

Dear John,

They call it “vitamin I.” Among runners of ultra-long distance races, ibuprofen use is so common that when scientist David Nieman tried to study the drug’s use, at the 100-middle
Western States Endurance Run, he could hardly find participants willing to run the race without the popular drug.

Nieman, director of the Human Performance Lab at Appalachian State University in Boone, North Carolina, did eventually recruit the subjects he needed for his study comparing pain and inflammation in runners who took ibuprofen during the race with those who didn’t, and the results were unequivocal. Ibuprofen failed to reduce muscle pain or soreness and blood tests revealed that ibuprofen takers actually had greater levels of inflammation than those who eschewed the drug. “There is absolutely no reason for runners to be using ibuprofen,” Nieman said.

The following year, Nieman returned to the Western States race, and presented his findings at a pre-race conference. Afterwards, he asked attendees whether his study results would change their habits. The answer was a resounding no. “They really, really think it’s helping,” said Nieman. “Even in the face of data showing that it doesn’t help, they still use it.”

In theory, few would argue with evidence-based medicine's central concept—the idea that medicine should rely on the best available evidence—yet for many patients, and even some doctors, belief and gut instincts still trump scientific evidence when it comes to assessing medical practices. As medical science has grown increasingly sophisticated, researchers have become more adept at testing treatments and medical outcomes, but new evidence often meets with resistance and even outrage when it shifts recommendations away from popular practices or debunks widely held ideas about a disease or treatment.

I'd like to propose a feature about the backlash against evidence-based medicine health reforms. My piece will argue that beliefs, rather than evidence, drive most medical decisions and that if evidence-based medicine is to prevail its proponents must learn to devise narratives about the evidence that will fit into existing belief systems.

This issue is especially timely, because the stimulus package contained more than $1 billion in funding for comparative effectiveness research (CER), which President Obama hopes will help slash medical costs by identifying ineffective treatments and focusing healthcare dollars on proven treatments. Currently, about one-third of health care spending in the U.S. is wasted on ineffective treatments and unnecessary tests. The ongoing healthcare reform debate has mobilized opposition to evidence-based medicine and CER among drug companies, advocacy groups and physicians who worry that EBM and CER will prevent the use of their favorite treatments.

Convincing the doctors who use ineffective treatments (and the patients who demand them) to give them up will be no easier than talking those runners out of ibuprofen, but it’s not impossible. My piece will show that scientific evidence is most readily accepted when it can provide patients and doctors with a satisfying narrative in which to place their belief. When it comes to changing minds, the stories sewn from new evidence are just as important as the facts themselves.
The long-distance runners who were sure that research on ibuprofen did not apply to them are just one example of the resistance that evidence-based medicine faces. Multiple large-scale studies have shown that breast self-exams lead to over-treatment but do not save lives, yet many doctors and breast cancer advocates continue to recommend them, in part because the take-home message provided by the evidence is something like, “be familiar with your breasts but don’t obsess over them. A self-exam won’t save your life.” This evidence-based message does not provide the empowerment or sense of security provided by those who tout the exams, with sayings like “early detection is your best protection.” When the choice is between assurance and uncertainty, the decision is easy, and advocacy groups worry that if they cannot provide a reassuring message their funding may run dry.

My piece will explore the reasons why new evidence often fails to convince, using the breast self-exam and ibuprofen examples mentioned earlier (or any of the many other examples such as controversies about back pain, “chronic” Lyme disease, vaccines and a type of knee surgery) and then turn this around to look at ways to increase the acceptance of new evidence. In my background reporting, I’ve discovered four common reasons people push back against evidence-based medicine.

* The evidence is dismissed as unbelievable, because it refutes a treatment or test that makes intuitive sense.
* The new evidence provides a less satisfying narrative than the storyline provided by a debunked treatment or procedure.
* The evidence-based guidelines contradict a strongly held belief about the illness or disease in question.
* Evidence-based medicine examines statistics about large groups of people, and individuals receiving a treatment feel that the statistics don’t apply to them.

My story will examine these issues and look at how they're coming in to play in the current health care reform debate. The piece will argue that health care reformers and evidence-based medicine proponents need to create a satisfying narrative if they're to sway public opinion.

I have written about the nature of belief before, in a 2007 Bicycling magazine feature that was nominated for a national magazine award.
http://www.bicycling.com/article/0,6610,s-1-9-16564-1-P,00.html

Best wishes,
Christie

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Samples from the TON Pitch Database, continued

Kate Green (Discover)

The story

“Our Data, Ourselves”
by Kate Greene
Discover, December 2011

Greene notes: I had originally sent an almost identical pitch to Technology Review, where I was formerly an editor, but a staff editor was working on a feature that was similar. TR suggested I do an 800 word profile of Bob Evans as a side bar, but I felt like his story needed more space, so I declined the offer. At this point, I didn't have a guarantee that I could place the story anywhere, but I had been wanting to write for Discover. I also knew that my access to a Google engineer was something special, so there could be a good chance that another publication would pick it up. In sending it to Discover, I modified the pitch slightly, suggesting at the end that I'd be willing to approach the story from different perspectives, including one in which I would test out the self-tracking lifestyle.

Another important change was the addition of a personal introduction. My only connection to the magazine was a tenuous one: I was an intern candidate in 2005, which led to a conversation with Corey Powell, the managing editor at the time. Corey is now the editor-in-chief, so I sent my pitch to him. In it, I re-introduced myself in the first paragraph and reminded him of our fleeting conversation five and a half years before. He passed it along to senior editor Eric Powell (no relation), and after a few conversations about story-telling approach and reporting logistics, Eric assigned it to me.

The story based on this pitch ran in the December issue of Discover. It's slightly different than the story I originally conceived. During my reporting, it became clear that the angle on bringing self-tracking to the masses should be played down as the project wasn't going to have as large a launch and impact as Evans had expected. Also the Quantified Self conference that I proposed as a peg was absorbed into general reporting and didn't come out in the final story. But the essence is all there. I'm grateful to Discover for taking a chance on a new writer. And I'm grateful to Evans at Google for giving me unprecedented access to his project. The story couldn't have come off as it did without it.

The pitch

Hi Corey,
It's Kate Greene, a Discover intern candidate from 2005. I went by Katie Greene then, and ended up at Science News for that interning term, but I remember we exchanged a number of emails and a nice phone conversation over the course of the selection process. Well, fast forward 5.5 years, and you're the EiC, and I'm a freelancer with about four years of editing/writing from Technology Review under my belt.

My point: I'm interested in writing for Discover, and I have a feature idea that I hope interests you.

My pitch: Personal Data Mining, by Google

I've been talking to a researcher at Google who's developed a personal data-mining app for iPhone and Android that the company has been using internally for about a year. The app, called PACO, does essentially what Nathan Eagle (founder of the startup txteagle) and MIT prof Sandy Pentland's reality mining phones did back in 2005 (http://reality.media.mit.edu/): it collects a person's whereabouts, interactions, activity, feelings and sentiments, and makes sense of them—giving a person a quantitative view of herself. But unlike an academic project, PACO has the potential to reach the public.

The Google researcher, Bob Evans, is in the engineering productivity department, and has purposely designed the app to be customizable. You can use PACO to write your own "experiments" like an app that tracks your allergy symptoms and correlates it to weather forecasts and pollen counts. You could use it to make your own RunKeeper, diet, mood, or sleep tracker. Human resources departments could use PACO to write employee surveys that ask questions throughout the day or week, getting a more accurate read on what makes specific people and teams productive. Scientists could use the app to build surveys that collect instant sentiment or real-time data, solving the problem of inaccurate recall from which most surveys suffer.

Privacy is a big deal to Evans and he explained to me that the phone is a unique platform for behavior monitoring because it's with you all the time and everything can be stored, securely, on the device. If a person chooses to backup their data to a server, or to participate in a broader experiment in which they share their data, the information is encrypted and anonymous.

Of course, privacy experts might scoff at the idea anyway—Google controls so much of the world's information and now it wants intimate personal data? But Evans sees no reason for Google to store and mine this information. Rather, he wants to give people the tools to do it themselves. It's an idealistic approach that will be interesting to watch evolve.

The time peg for this piece is the Quantitative Self Conference in Mountain View, May 28-29. These quantified self folks have been tabulating their daily habits for years, but they often use a piecemeal approach, cobbling together apps, using spreadsheets, and forming support groups to talk about their sleep problems, among other personal details. Evans plans on presenting PACO at the conference—I think this could really
revolutionize the way this fringe group collects their self-data, but I think it could also be the true birth of practical, personalized reality mining.

I see a narrative unfolding in a few different ways. One, I could use the app to get to know myself better, figuring out ways to improve my productivity just as the test Googlers have. The background story of the quantified-self movement, the MIT research, and Evans' developing the all-seeing app would be interwoven here. Or, vice versa. The main story could be Evans developing the app internally for Google, interwoven with background on the QS movement and my personal story of self discovery. Or, I could take myself out of it completely. I'm open to hashing out the story structure with you if you're interested in the topic.

Also, I hope you're doing well! I'll be in NYC in the summer and would love to stop by and meet you properly.

All the best,
Kate

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Samples from the TON Pitch Database, continued

Evan Ratliff (*National Geographic*)

The story

“Taming the Wild”
http://ngm.nationalgeographic.com/2011/03/taming-wild-animals/ratliff-text
by Evan Ratliff
*National Geographic*, March 2011

*Ratliff notes that the information in this pitch letter has not been verified, and some information changed substantially in the reporting of the story.*

The pitch

The domestication of animals, anthropologists argue, is one of the most crucial developments in the course of human history. Yet for such a seminal event, the science behind domestication remains surprisingly opaque. Basic questions remain, in particular, about the biological conditions that allowed humans to gain dominion over animals. Why is domestication so rare, for instance, with only 14 of the 145 large mammals ever having been tamed? Why do domesticated animals often differ physically from their wild counterparts—with floppy ears and spotted coats, for example—in similar ways across species? (Something noted by Darwin himself, in *The Variation of Plants and Animals Under Domestication*.) And perhaps most tantalizingly: why could species like the horse be tamed, while close relatives like the zebra, despite numerous attempts, could not?

Increasingly, researchers believe that the answer to these questions is imbedded in the animals’ DNA, and even in our own genes. Using advanced gene sequencing techniques in species ranging from pigs to domestic dogs to zebra fish, scientists are on the trail of the “domestication genes” that hold the key to tameness and the physical characteristics that go with it. It is a pursuit with implications not just for our fundamental understanding of evolution and animal behavior, but also for the future of food production and the conservation of endangered species through captive breeding.

This story would examine that pursuit, centered around what is widely considered the most remarkable evolution experiment ever conducted. The study, begun by the Russian geneticist Dmitry Belyaev in Siberia in the 1950s and continuing today, involved selectively breeding two sets of wild silver foxes. Those least afraid of humans were mated in an attempt to create a tame population, while another set was selected for aggressiveness. In just 35 generations, the researchers created a group of perfect pet foxes that bond deeply with humans, alongside a group that attacks or flees humans on sight. They’ve done the same more recently in rats and—less successfully, but just as interestingly from a scientific perspective—in minks. Compressing what was assumed to be millennia of evolution into 50 years, they’ve almost single-handedly established that
physical traits like floppy ears, short noses, and spotted coats, “free ride” on tameness genes.

The experiment itself has a strange and colorful history, dating to a time when the Soviet scientific establishment rejected Mendelian genetics. Belyaev’s older brother, also a geneticist, was sent to a labor camp based on his work, and died there. So Belyaev started the fox study in Siberia, away from the eyes of the scientific bureaucracy. Eventually, as attitudes changed, he became a renowned Soviet biologist. Since his 1985 death, a woman named Lyudmila Trut has continued the research, now in partnership with a Russian researcher at Cornell.

With the help of researchers in the U.S. and Germany, today they are using the most advanced quantitative genetics techniques to pursue domestication genes in the foxes and rats. They’ve already shown that tameness is associated with surprisingly small changes in the brain’s gene activation, and undermined some long-held beliefs about the evolution of dogs. They’ve also built a genetic roadmap that they hope will lead them to the genes themselves in the next two years.

Other researchers are attacking the question across a variety of species. Another Russian scientist based in Siberia has a parallel study of pigs, examining the genetic basis of a pig’s fear of humans, while French researchers evaluate how those genes also may regulate the pig’s eating habits. (Scared pigs, in other words, equal skinny pigs.) At a lab at the University of Idaho, and another at the University of Turku in Finland, researchers are studying the genetics of domestication in rainbow trout and zebrafish, to see how the genes of fish change as their behavior adapts to captivity. Those findings that could be significant for the growing aquaculture industry. Still other geneticists are taking apart the genome of cattle and comparing it to samples from ancient cattle bones, and lining up the DNA of the domesticated chicken alongside the wild red junglefowl.

A story that explores these efforts, anchored in the Russian fox study, would offer a wide variety of photo opportunities, across wild and tame species. The Belyaev study has been written about sporadically over the years, but not in tremendous depth, not in a broader context, and not since the researchers have advanced significantly into the genetics phase of the research. Finally, despite a superficial similarity, this would not repeat the concepts of the 2002 National Geographic story “Wolf to Woof.” Here we will be attacking fundamentally different ground: not showing the history of our pets, but investigating what it means for an animal to be tamed, and the biology underlying animal domestication. 

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PART THREE: REPORTING

Ask TON: Dumb questions

I’ve heard people say it’s important not to be afraid to ask “dumb” questions. What is your favorite “dumb” interview question when interviewing scientists? What has gotten you the most useful results?

Freelance science journalist Christie Aschwanden:
- I usually start an interview by asking a really basic question. For instance, let’s say I’m writing about epigenetics. I might ask the researcher, “What exactly is epigenetics? How would you explain the concept to someone at a dinner party?”
- I always try to start with an easy question (that I know the answer to) just to give the source some space to warm up. For the first five minutes or so, I don’t try too hard to control the interview. I want them to spit out their talking points first thing so that they can relax.
- If they seem hostile to my question (this stupid journalist doesn’t even know what the term epigenetics means!) I’ll explain, “I know the answer, but I also know that you can do a much better job of explaining it than I can, and I’d rather quote you.”
- Another standard questions is, “why is this research important?” I usually already know the answer to this one too, but it usually yields some quotable information that can put things into context.
- Sometimes I’ll ask, “what made you decide to study this in the first place?” This question usually leads to some interesting backstory and color.
- Throughout the interview, I try to talk as little as possible. The more I talk, the less material I get. When I know a lot about a subject, it’s really tempting to show the source how much I understand. It’s a good way to gain the source’s trust, but a really bad way to get good quotes.
- Of course, I always end the interview with, “what did I neglect to ask you? Is there anything I’m missing?”

Freelance science journalist Ed Yong:
- This isn’t a question, but I find genuine expressions of joy or wonder really get people to open up. The odd “Wow! That’s incredible” can really change the entire course of an interview—it says, “You and me? We’re on the same page. Now, tell me of the coolness.” Obviously, that’s not appropriate if you’re doing an investigation or writing something critical, but when you cover a beat like science, it’s not hard to find moments where such interjections can be genuinely delivered.
- I also like questions that get at the process of doing research, which so often gets left out in favour of some grand practical speculations. I find that “Was that hard to do? It *sounds* hard to do” gets better material than “What are the implications for people?”

Science writer and editor Hillary Rosner:
• I don’t have a specific dumb question that I always ask, but I do think it’s important generally to not take for granted that you understand what the scientist is saying or that readers will. So I will often ask for clarification multiple times—“So what you’re saying is…” or “What does that mean, exactly?” or “Can you explain that in simpler terms?” Scientists who are used to talking to the press or used to discussing their work for a general audience tend to have great metaphors on hand, but I find that even those who are a bit less practiced have useful and simple ways of thinking about their work—it can just take a bit more effort to coax it out of them.

• Asking scientists to explain how they got interested in their current research topic almost always yields fascinating stories, and it’s also a good way to break the ice.

• I also tend to make jokes, which probably make me look dumber than I’d like to think I am—but it can humanize things and also put the scientist at ease. Of course, if they don’t have a sense of humor or don’t find my joke funny, it can backfire. But even then, they may take pity on me and tell me something really good as a result.

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Taking good notes: Tricks and tools

(By TON guest contributor David Grimm)

Whether you rely on a digital recorder or a laptop or a ragtag collection of mismatched notebooks, you need to take good notes. That doesn’t just mean that your handwriting needs to be legible—though that matters too. It means that your notes capture the essence of what you have observed, from the words your sources uttered to—in some situations—the direction the wind was blowing as you spoke. Every situation calls for different note-taking strategies, and every writer has his or her own preferences.

Recently, Science’s Online News Editor David Grimm offered us a trove of advice on note-taking, which he assembled for students at Johns Hopkins University’s science writing master’s program, where he is on the faculty. Grimm polled colleagues about the best way to take notes during interviews. Here’s their advice:

Prepping for the Interview

- **Plan of attack:** Go to an interview with a plan and an expectation of what the interviewee is going to say. If the person says something surprising, write that down. If a person has a great quote or turn of phrase, write that down. Though you may not be writing much, keep your pen moving by writing down points you expected the person to make—that way you can guide your interviewee to make sure he/she actually makes the points you need for your story, and you don’t wonder later, “Am I making this up or did the person actually say something like this?” Continually writing also helps your interviewee think you’re interested in most of what he/she is saying, so the interviewee might give you something that he/she might not give to other interviewers. (Robert Frederick) /Whichever medium I’m working in, I go over my notes right after the interview, fill in blanks from short-term memory, and clean up any mistakes or illegible patches. (Robert Coontz)

- **Questions:** I always draw up a complete list of questions before an interview and then put the list aside. I don’t consult it at all during the interview, concentrating instead on keeping the conversation flowing and following up right away on points I don’t understand or need more info on. Then at the end, I pull out my notebook and quickly scan the list to see that I’ve covered everything I needed to, and if necessary ask any remaining questions. Usually though I’ve covered all the points, and often gotten far more than anticipated from a source. (Heather Pringle)

How to Take Faster Notes

- **Shorthand:** The only reliable method I think is shorthand. I don’t know shorthand, so in this situation I try to filter info as I’m putting pen to paper—jotting down sure-bet quotes, key data, etc. it’s hard to keep that up. Sometimes I drift into a robotic trance where I’m trying to jot down every word. (Richard Stone)

- **Speedwriting:** We discuss interviewing a lot in my class. I advise them to start learning Speedwriting as soon as possible (a more user-friendly version of shorthand which can be used right away, while you’re still learning). Amazon has various courses available:
Speedwriting for Notetaking and Study Skills and Speedwriting Skills Training Course. (Michael Balter)

- **Drop vowels:** I drp vwls. (Jon Cohen)
- **Make up your own shorthand:** I use my own invented speedwriting. My abbreviations change a lot from interview to interview—a capital C might stand for crocodile if I’m doing a story on crocodiles, or might stand for chromosome if I’m doing a story on genetics. I’ll actually try to jot down a few abbreviations before I start an interview, with words I think will be common in the conversation. That keeps me from getting distracted later in the interview thinking about what to abbreviate. I think my biggest stride in notetaking came when I realized I didn’t have to get every word of the entire interview written down exactly verbatim, just the parts I might want to quote (as a beginning writer I recorded every interview, made a full word-for-word transcript of the entire interview, and then would look through it for quotes… sooo time-consuming, but I really thought that’s what was done). Maybe it’s because I got better at immediately recognizing when something is quotable—I’ll focus on getting that down right and not worry if I’m missing the exact wording of some less quotable material that comes after it. When someone is giving me general background information or explanation that I need to understand but probably won’t quote, my note-taking is more like it would be in a class—an outline form or general thoughts and ideas and how they connect. Depends how familiar I already am with the subject area though. (Sarah C.P. Williams)

- **Software:** When I am doing phone interviews, I record and type notes in PearNote. The text is tied to the audio, so I can click on a particular spot in the text and it will play the audio from that time point. The sound comes from my landline and goes into my computer through some weird RadioShack gadget. Also, I use a headset so that I can have both hands free to type. I think PearNote is only for Macs, but MS OneNote does the same thing. When I am on the road, I scribble illegibly in a notebook and use a recorder. I try to remember to mark the time on the recorder if someone says something interesting. (Cassandra Willyard)

- **Hardware:** I’m no techno-geek, but I’d like to make a strong plug for Livescribe, a recording pen. Your written notes—page scans—are uploaded to computer and you can either play back the entire recording or jump around to where you’ve noted juicy quotes or key information. It’s the most valuable tool for my work since the Internet. (Richard Stone)

- **Others:** Particularly if you don’t have much advanced notice of an interview, and so cannot necessarily prepare and come to an understanding of what the interviewee is going to say, learn one of the alternative handwriting systems. Here’s a site that discusses a lot of them: http://www.alysion.org/handy/althandwriting.htm. (Robert Frederick)

- **Or… Write slow:** I use notebook and pen and my own bastard shorthand. One of the benefits of this not very speedy technique is that it creates voids that the interviewee feels obliged to fill. If they finish what they were intending to say, and you don’t immediately come back with another question because you’re scrawling down their words, they’ll often just keep going and say things they might not have wanted to say or make off the cuff comments that provide good colour. Once you sit down to write and are reading through your notes, the most indispensable piece of technology is a highlighter pen. A splash of colour over the juiciest quotes makes them so much easier to find among pages of dross. (Dan Clery)
In the Field

- **Listening/Seeing:** Concentrate on listening; your notes are just going to be a reminder of what the person told you. You’re not going to get every word they say. So you have two goals: understand what they’re saying and get quotes. Oh, three goals: you also need color. For quotes, when someone says something you want to capture, stop listening and concentrate on repeating what they just said in your head until you have it down. Don’t forget the color. That’s the hardest part to get later on the phone. Then as soon as you are back at a computer, type up your notes. You’ll remember things you didn’t write down, and you’ll still be able to remember what your scrawls mean. (I can’t read my handwriting by day two.) With time and practice, you’ll start developing abbreviations that work for you. (Helen Fields) / One thing I want to add is that if you are writing a book or magazine article where you might want to describe a scene, make sure you take notes at the scene about how the place looks, smells, sounds, etc, and take photos or video (great for voices and catching a person’s cadence, etc.) that you can look at when you’re writing. Jot down apt analogies, etc. while the material is fresh. And always date the interviews/times in case you need to use the notes later. (Ann Gibbons) / I think it’s important to not just write up your notes from a lab or field visit within 24 hours, but to actually write scenes in at least as much detail as you’d use them in your article. My notes from the field tend to be a mix of scattershot details and quotes. When I actually start describing the scene, other details I hadn’t thought to note often seem necessary. If I do this within a day or so I can remember them. When I haven’t done it soon enough, I’ve regretted it. (Greg Miller)

- **Photos and videos:** I am loathe to rely on my notes when describing a scene in a story. I take loads of photos not only as potential illustrations but to better reconstruct scenes. I’ve also begun recording short videos for that purpose. (Richard Stone)

- **Computers:** I sometimes use a laptop during an interview in the field, especially if it’s in a setting where laptops are common. For example, at a scientific conference, if I go to a coffee shop with a research during a break, a laptop doesn’t create any distance between us. But if I’m in Nairobi visiting a woman in her wattle, the last thing I’d do is pull out an indiscreet chunk of high tech gear. One advantage to hand notes is I often draw something in the environment. This both helps me remember color and puts me back in that place. I also like to ask people to write their names for me, especially if they’re not used to being interviewed. It increases the likelihood that I will not misspell the person’s name, everyone’s handwriting has a beauty to it, and it creates an intimacy with the source, as though we’ve entered some sort of contract with each other that is binding. As far as electronic letdowns and glitches, handnotes have shortcomings, too. I once lost a notebook. It broke my heart. With electronic files, I can easily back them up, e-mailing them to the cloud. They also are much easier to work with when writing a story (though I typically type in all my handnotes for longer stories). I’ve played with several voice recognition programs. None are all the way there, but, interestingly, Adobe Premiere Pro CS5.5 and Adobe Soundbooth CS5 can do crude transcripts with time logs, which make it much easier to then search your digital recording/video clips. I think we one day will record everything and use these programs. (You can download the Adobe products for free trials and test drive.) (Jon Cohen)
- **Good-old-fashioned notebooks:** I scribble my notes in notebooks, too, and record if I absolutely must, since I truly hate transcribing. I also don’t like reading the pages & pages that come from a full transcription service. Like others, I’ve developed my own speedwriting system—and like someone mentioned adapt it to the story at hand. If I’m writing about Earth, I note it as E, for instance. I prefer notebooks (Rite-in-the-Rain pocket notebooks) for many reasons—they don’t run out of batteries; are pretty much indestructible (unless you lose them; I often “wear” my notebooks, keeping them in a special pouch around my neck or waist or daypack, and never ever put them in checked luggage); and it’s easy to flip through them at the end of the day, or even as an interview is in progress, to review where you are, and what else you need to know. Sometimes new questions arise from the interview itself. I also mark my notebook up with stars and underlines and highlights, and draw pictures, graphs, etc. You do develop a listening skill—you get that sense when a quote is just perfect. I find that I can mentally record those, and I do make sure I get those keepers down fast. (Virginia Morell)

- **Drawings:** I also often draw in my notebooks, and often ask scientists to draw for me—they often think graphically or in diagrams, and this helps me to understand. (Elizabeth Culotta)

### Other Interview Advice

- **First statements:** One thing I often do when starting an interview is to explain to the interviewee what sort of story I’m intending to write. This helps put them at their ease. (Dan Clery)

- **First questions:** My go-to in interviewing is asking people about how they came to do what they do. Most folks like to tell their origin story. (Gisela Telis)

- **Act interested:** And make sure you appear interested. You need to get them to trust you. (Dan Clery)

- **Organize!** I’ve become a big fan of Evernote, which is an app that lets you create notes and organize them into notebooks. It all gets synched to the cloud automatically and pushed out to your other devices, so any notes you take on your laptop are automatically updated on your desktop, iPhone, etc. It also lets you attach files (pdfs of papers, photos taken on a reporting trip, MP3s of recorded interviews) to particular notes. You can also add websites and emails to your notebooks. I really like it because I can keep all the various media related to a story in one place, and it’s all automatically backed up and synched across devices. (Greg Miller)

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Yudhijit Bhattacharjee weaves a tale
of scientific rivalry and Nobel celebration

(Interview by Siri Carpenter)

The three cosmologists who shared the 2011 Nobel Prize in physics for the 1998 discovery of the accelerating universe were only a few of the dozens of scientists, working on two competing teams, who contributed to the discovery. In a show of team-spirited solidarity, those fortunate enough to be recognized by the Nobel committee invited their colleagues—some of whom were bitterly disappointed to have been overlooked—to join them in Stockholm, Sweden, for a week of Nobel festivities. In a story that brings fresh perspective to a famously fierce rivalry, Science staff writer Yudhijit Bhattacharjee used the events of those seven days in Stockholm as a storytelling frame through which he recounted team members’ personal and professional journeys leading up to the groundbreaking discovery and in the years since. [A Week in Stockholm was published in Science on April 6, 2012.]

Here, Bhattacharjee tells the story behind his story:

How did you come up with the idea for this unusual story?

I started thinking of the story when I was at the American Astronomical Society meeting in January 2012. I was talking to Nick Suntzeff [the Texas A&M University astronomer who co-founded one of the teams that discovered the accelerating universe, but who was not among the Nobelists] for a different story. He was telling me what it was like to be in Stockholm, and how he had all of these powerful emotions that he was wrestling with. I could tell that he was disappointed at not having won the Nobel itself, yet he was very proud. He seemed to be getting it out of his system by telling me and other people. So I thought if I could talk to a number of researchers who were there, then I might be able to tell the story about this rivalry between the teams, and the personal disappointments, through a recounting of those seven days—because it seems natural those feelings would come up while everyone was there.

At the outset, how familiar were you with these teams, the High-z Supernova Search Team and the Supernova Cosmology Project, and with their rivalry?

The scientific story was pretty well known and I’d covered it, so I was familiar with the accelerating universe. I’ve also written a profile of Adam Riess [one of the Nobel Prize winners, from the High-z team] in 2008. I remember that I asked him what it felt like to be on the verge of getting the Nobel Prize while still having a whole career ahead of him. I’d gotten a glimpse of those personal rivalries when I wrote that profile.

And I’ve read a considerable part of [Harvard University astrophysicist] Robert Kirshner’s book, The Extravagant Universe [which detailed the High-z team's work; Kirshner was Riess’s doctoral adviser]. It was only when I’d started writing this piece that I discovered that a writer named Richard Panek had written a book called The 4% Universe, which included a full-blown
account of these two teams and their rivalries. I had not read that book, and when I found out about it I quickly stopped searching the Internet and went back to writing the story.

Why?

I didn’t want to start to feel inadequate.

Was it difficult getting the sources to participate?

When I had my first conversation with Suntzeff, I said, “Do you think other people will be as candid as you have been?” He said, “Well, try them.” Once I started approaching them, everyone quickly got what I was trying to do, so that was helpful.

As you did not attend the ceremonies, how did you so vividly reconstruct Nobel Week, including details of setting and dialogue?

It took a lot of reporting. When I thought of the story I envisioned it as a narrative of those seven days, so I was looking to ask people, “What happened at this event?” or “What happened leading up to that event…and then what happened next? Do you remember what you ate? What somebody said that stood out? How did you guys go? Did you take a bus, or did you take a car?” I’d just prompt them with information that I had, and that immediately would clue in the source to the level of granularity that I was looking for, and they would enthusiastically start remembering things. Then, information from one source would be used to jog the memory of the next source.

I was just lucky to be talking to scientists who were themselves pretty good storytellers—and because the event was such a once-in-a-lifetime event for them, their memory of it was very strong. As it was pretty recent, it was fresh on their minds.

Can you give an example of how you acquired certain information, like the detail about the portrait hanging in the cloakroom of the Royal Swedish Academy of Science?

I was asking about the scene, what it was like to go to the reception, and one of the scientists remembered a giant portrait of the 16th century astronomer Tycho Brahe hanging on the wall in the cloakroom. I was trying to capture the epic nature of the ceremonies, so it seemed like a good detail to use, and it also led to my thinking how different the modern scientific enterprise is compared to centuries past.

What other techniques worked for you?

I was particularly lucky to be able to talk to people who weren’t part of the event. For example, I spoke with [High-z team member] Peter Garnavich’s wife, Lara Arielle Phillips, who was very knowledgeable about the rivalry between the two teams but who really was an outsider to the teams. She had a very good recollection of things that happened.
For the dialogue, I had to ask individual sources to tell me what they said at particular events, and whatever they told me is what I put in the story. I used words like “recalled” to make it clear it wasn’t live conversation I was eavesdropping on.

Why did you decide to structure the story as you did, braiding together the narratives of the Nobel Week events and the teams’ long rivalry?

It just seemed the natural device. When the idea for the story came to me, I knew right away that readers would find it appealing to “attend” this big party through the story, and that would become a device for pulling readers through the narrative… not just of those seven days but of the 15 years of science that had gone before it. The history of the discovery is known—books have been written about it—so that was, by itself, not a new story. But I knew that the Nobel had given it a twist and a freshness that allowed the retelling of the story through a different lens. People want to be taken on a journey, taken to another world, another place, and to experience a sequence of events that will make an impression. Everyone knows about the Nobel Prize, and a lot of our readers know about the accelerating universe. But most of our readers have never been to Stockholm, and they’ve never won a Nobel Prize. They do know there’s a lot of pomp and ceremony, so that seemed like that natural thing to leverage to tell the story.

How did you decide how you would structure the story?

Once I thought of breaking out the story into sections as if they were diary entries, that helped me to write one section after another without worrying about the overall structure, which can be terrifying when you’re writing a long piece and you don’t know where you’ll end up or whether you’ll go off track. So that framework came to me because I visualized the layout.

I also insisted that the layout include a picture of every team member, partly because I wanted 50 people to save a copy of the magazine, but also because I felt that the story was a tribute to the teams and if we committed the same “mistake” the Nobel committee had made by picking out some and talking about their story and leaving out the rest, it would go against the spirit of the piece.

What were the greatest challenges you encountered in writing the story, and how did you deal with them?

What I found most challenging was that in most stories, we write about one or two people because that lends itself to narrative. As soon as you write about a group of people, things get diffuse and you can’t hold the reader’s attention same way as if you describe one person. So I had to balance among multiple voices and still convey a single theme. That’s where the device of the events of the seven days became helpful.

It must have been difficult to report two narrative timelines simultaneously. How did you handle that?

Both teams started working on the science in the 80s, so they had been competing for about 10 to 15 years before the discovery was made in 1998. And then the jockeying for credit went on for
many years after that. It was impossible to pick out the defining moments when there are so many. When I would start to ask people about something that happened 12 or 15 years ago, they would start to unleash a torrent of information. I would sometimes be hopelessly lost because I knew that I’d have to write a book to do justice to that. I’d say “No, no, no, this is a very short project so I need to get a broad impression.” But I knew I needed a granular impression of these seven days. It was hard to toggle between the big-picture reporting for that earlier timeline and the detailed view that I needed of the seven days. I was worried about the writing of it—whether I would be able to pull it off without it being too confusing to readers who had to go back and forth. There were several problems to be solved in the writing which I was nervous about.

**What were those problems?**

It was really the structural problem of juxtaposing these two timelines. I was worried that maybe what happened during the week couldn’t be directly related to the scientific milestones that came on the way to the discovery, and I knew that I’d need some seamless transitions to be able to go from champagne at a reception to the origins of the project. So I was worried that I’d make it too complex and yank readers back and forth from Stockholm, to Chile, to Berkeley. Ultimately I wanted it to be very elegant, and wanted readers at all times present in Stockholm. I especially struggled with the second-to-last section, at the colloquium, which was really the grand finale of the rivalry.

**What was especially challenging about that section?**

The colloquium is all on video, so I was able to just listen to every talk and then interview the people who spoke to find out what they implied when they said certain things. When I saw that some speakers had narrated anecdotes from the history in that colloquium, I thought it would be great to report them in real time. But I struggled with that because that would have been a real switch of the timeline. So I gave up on that because it was important to keep readers mentally in Stockholm. I decided I had to just choose one or two things from the colloquium from a long list of anecdotes that were described by one speaker after the other. It might have not been the best literary solution, but it worked for my purposes.

**How did you end up choosing the anecdotes that you used from the colloquium?**

I was looking for some sort of resolution. I wanted the story to go from point A to point B, so you come away with a different view of the world, slightly transformed. The movement in this case was a coming to terms between the two teams, and also for the members who made significant contributions but who did not win the Nobel.

The anecdote that jumped out was the funny one that Peter Nugent told about driving down this Chilean mountain in a Beetle and having an accident, and then Bryan Schmidt, who was on the other team, hurrying out to pull him out of the car and help dust him off. That anecdote got the best reaction, if you watch the whole video. It was just the one thing that implied a reconciliation—the fact that the science was bigger than the personal ego. It also showed that the younger crowd within these two teams was on friendly terms with each other.
The other anecdotes that were more contentious, I left out. There were some mean things that were also said that I filtered out because ultimately everyone that I spoke to said that they came away with a good feeling.

Looking back, is there anything you would handle differently?

I think that I would have reported even more. For example, I got a letter from Bob Kirshner’s daughter saying that when she learned that her father hadn’t won, she wasn’t angry, but she was worried about how he was feeling. In my story I just reported based on my conversations with Kirshner, who said his daughter was upset. Obviously that was secondhand reporting—I should have found out from the daughter exactly what had happened.

There were some other fuzzy spots, like exactly how the fire occurred behind the curtain when the High-z team was having lunch at the restaurant. I would add more depth in reporting for the ring of truth. It doesn’t matter in the grand scheme of things whether a pile of t-shirts burned or just one, but it would have helped me visualize the situation with the fire in more concrete terms, and that visualization gets reflected in the way you write and your writing becomes truthful. To the reader, it might seem like it doesn’t matter, but put all that texture together and it creates the emotional response for a story like this.

Also, I don’t want to admit it, but I don’t think I reported the Supernova Cosmology group’s side as deeply as I did the High-z team. The Supernova Cosmology team had a more hierarchical organization and the rivalries within that team seemed better managed, or didn’t come to the surface. There’s more to that story than I was able to get.

Is there anything people wouldn’t know from the piece that you’d like them to know?

I did a lot of reporting to recreate scenes. People said it was odd that it got dark [so early] in the afternoon—one of them specifically told me the sun set at 2:00 p.m. I looked it up and did some research on the web to confirm that’s when the sun set. I went to Google to see what does this building really look like; what the weather was; what the temperature was; was it really raining this day; what do buses in Stockholm look like; what is the menu at F12. It just seemed very important to reconstruct those things to give people a sense of the place. Those are little things that might end up as a phrase here or a word there, but they bring everything into bold relief.

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Ask TON: Anonymous sources

Should anonymous (unattributed) quotes be used to develop stories which would not be possible without them—such as when individuals are unwilling to go on the record with negative comments?

Science News contributing editor Alexandra Witze:
Anonymous sources need to be treated with care and used extremely rarely, but there should be no unilateral rule against citing them. Reporters should always press their sources to be on the record, over the course of multiple interviews if necessary. And it’s very important to understand and independently confirm, if possible, the request for anonymity. Does the source, for instance, really have a substantial reason for making this negative comment, or does he or she just have an axe to grind with someone else in the story? As an editor I rarely permitted anonymous sources—only if, for instance, we had confirmed that the source was indeed at risk of losing his or her job, or would suffer other severe consequences as a result of speaking out. The bar must be set very high.

Nature news editor Mark Peplow:
Yes, but you must explain in the story why the source is anonymous. Unless there are some exceptional and explainable circumstances preventing it, the fact(s) should be second-sourced.

Science deputy news editor John Travis:
Since I work in Washington, D.C. where political coverage is rife with anonymous sources, I can see both the danger and appeal of citing these sources. A reporter should seek to avoid them at all costs because they can weaken the story in the eyes of the reader, but I would never go so far as to ban them from a publication—sometimes, they are an absolute necessity in reporting known information. Ultimately, the goal of a journalist is to impart crucial or interesting knowledge to an audience; if doing that is only possible with anonymous sources, then so be it. In the end, it’s up to the reader to judge the credibility of a story, author and his or her sources. However, a reporter risks his or her reputation if anonymous sources prove wrong (consider Judith Miller)—if one does resort to anonymous sources, they should be identified as much as possible to note any potential biases.

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PART FOUR: WRITING

Ask TON: Using quotes

A recent NASW post quotes a Slate editor as saying, “We hate quotations at Slate. We almost never use quotes. They don’t do anything. They waste the readers’ time. Only use quotes when you can’t say it better yourself.” Wow! What do other writers and editors think about using quotes? And what do they think about quotes as readers themselves? [editors’ note: The NASW post noted that the Slate editor also said, "I’m against fact-checking because I think it encourages error. The items I’ve made mistakes in are when I’ve been fact-checked.”]

Slate editor Daniel Engber: As an editor at Slate, I’m professionally obligated to share this sentiment, at least in part. But I’d share it anyway—quotes can be a particular blight in science columns.

There are some situations where I would certainly endorse the use of quotes. In a feature, it can be important to let the characters speak for themselves. Not only can their language help delineate their personalities, but the presentation of dialogue makes a long piece easier to read.

For shorter pieces—reported essays, straight news, opinion, etc.—I would say quotes are useful when a source happens to deliver information in a particularly colorful or clear way, in which case you might want to borrow the phrase with proper attribution. I also like quotes taken from a primary text, where the original formulation happens to be particularly telling in terms of its form and content.

In other contexts, quotes can be a problem. My least favorite is when a writer gives an authoritative-sounding quote from someone obscure. This goes double in science journalism: Don’t tell the reader something, then quote Dr. So-and-So from the University of Blah-Blah to back it up. If you’re relying on a random “Dr.” from some “University” to add credibility to your reporting or argument—i.e., if your reporting or argument don’t seem plausible on their own terms—then you’re already in bad trouble. (Also: Why should I trust Dr. So-and-So? There are plenty of quacks around who love talking to the press, and lots of universities that hire fools and lunatics.) The best way to secure a reader’s trust is through a clear and straightforward accounting of the facts: Make it clear, in the way that you write and what you have to say, that you’ve done your research and talked to the right people for the story. Don’t hide behind someone else’s agreements or affirmations.

If it’s a bad idea to use quotes as a crutch—or a hedge against inadequate reporting—then it’s even worse to use them as filler material, larding up a column with rephrasings of basic information. As an editor and a reader, it makes me wonder if the author had nothing more to say for himself or herself.
In the quote (!) that yielded this question for TON, Jacob Weisberg was expressing an official view that goes back to *Slate*'s founding by Michael Kinsley in 1996. Things have changed a bit over the years, so these days you’ll find some standard-issue quotes in the magazine from time to time. But there’s still a “classic Slate format,” in the science section and elsewhere, that eschews the kind of quote-mongering typical of newspapers. When a science writer sends me a draft with a lot of quotes in it, I get the impression that he or she hasn’t spent much time reading the magazine. And that’s a bad sign…

Freelance science writer *Helen Fields*: When I read that post, I thought, “Wow, *Slate* hates my two favorite things: fact checkers and quotes.” I love quotes. I’m very good at saying things myself. But the people I interview have unique viewpoints that come through in their particular word choices and ways of saying things. I once quoted a penguin expert on the topic of finding the dark smear of penguin colonies on satellite photographs of Antarctica: “The poo just sort of stands out at you.” Sure, I could have paraphrased that, but it’s funnier that the scientist says it, and also that he’s British and says “poo” instead of “poop.” And the “you” reaches out and engages the reader. The quote accomplishes things that I, myself, couldn’t have done. Or didn’t want to. I don’t want to be the only character in my stories. I’m not the authority; my sources are, and I think their voices belong in the story.

Nature Medicine news editor *Elie Dolgin*: To quote the early 20th Century American humorist Robert Benchley, “The surest way to make a monkey of a man is to quote him.” Benchley may have been joking that people often sound like fools, but, for the most part, they just sound like real people. Quotes are a great tool for giving a sense of a source’s personality. They provide emphasis to details, evoke images that stick in the reader’s mind and provide a conversational humanity to a story. They also provide a level of transparency, demonstrating that the reporter has done his or her due diligence by talking to, at a minimum, the number of quoted sources (or paraphrased ones if ideas are at least attributed to named sources). However, quotes are often dispatched in a lazy fashion from writers who string together batches of statements from the mouths of their sources and pass that off without a cohesive narrative or thesis. Quotes, which necessarily come with lengthy affiliations, also slow flow at the expense of readability. As a result, non-quoted pieces can sometimes provide a more informative and entertaining read where the writer’s voice takes center stage. Still, with those kinds of pieces, you sacrifice the humanity of the people involved. Plus, the reader has to trust that the writer has done the proper reporting and fact-checking to provide the authoritarian voice they bring to a non-quoted source—something that is increasingly difficult to gauge as the line blurs between blogging and journalism. Clearly, they’re a double edged sword. But please don’t quote me on any this!

Scientific American associate editor *David Biello*: When it comes to science, nothing can enliven the dull detail of research methods like a quirky quote from the scientists themselves. To work without quotes is to discard a very useful tool, one that can humanize what can be a very abstract field of inquiry, or simply add clarity or wit. It’s like saying I love movies but only those without dialogue.
That said, some writers can over-rely on quotes (guilty!) It’s as if we want to say: hey, I talked to four different scientists about this one piece of research and, by golly, I’m going to quote all of them. So there! That’s not good. Quotes should be used judiciously, and only when they add something to the story. Quotes should punctuate an idea rather than explain it outright (there are exceptions to every rule). If brevity is the soul of wit, to paraphrase is often to make wittier and therefore more compelling and easier to understand. After all, to quote another editor I’ve worked with: “a quote can be a wonderful thing, but it comes at a price…. Verbiage.” (Plus it makes you wonder, doesn’t it, what else was said in that ellipsis, no?)

Of course, Slate is a special case. Its metier is the blog and the blog is essentially one long (sometimes rambling) quote from the writer. It can confuse things to start throwing other’s words into that flow. That said, some of the best bloggers whom I’ve had the pleasure of working with or reading (you know who you are), know exactly when a provocative quote can work wonders. And a news story without quotes is likely to be as dull dull dull as, well, the incipient bits of first drafts of history.

Quotes are a window into the thinking and personalities of the people involved in the story you’re trying to tell as a journalist. Abandoning quotes is abandoning the attempt to give them a voice in their own story. And what purpose does that serve?

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Naming the dog: The art of narrative structure

(By TON guest contributor Christie Aschwanden)

A few years ago, I adopted a puppy. I’d picked the runt of the litter and in the weeks that I waited for him to wean, I made a list of a dozen or so potential names. In the end, I used none of them. I needed to spend time with the dog before I knew whether he was a Baxter or a Jack or something else. Turned out, he was Oskar, a name that wasn’t on my list. I simply knew after a day or two that this was the perfect name for my dog.

For me, structuring a narrative feels like naming the dog. The structure falls out of the story itself. I can’t outline it in advance; I need to get deep into the story and the reporting first. I don’t know what I’m looking for, but I know it when I see it. Sometimes I recognize as it’s happening that a scene will become the lede that sets the stage for the story (like when a source’s father slapped me on the head); other times it’s something seemingly random, like a David Bowie tune on the radio that helps me articulate a story’s theme. Once I know what the story is about and have decided on a lede, I look for the ending. With those pieces in place, I start writing. Afterwards, I can look at the story and see that I’ve used a particular structure, but I find it impossible to set a structure and then write to it.

This process of mine works fine, but it can seem haphazard, and I’ve always had a vague notion that there must be a better way to approach structure. If anyone has a method, I figured it would be Sandy Blakeslee, the author of eight books and countless articles for the Science Times. Blakeslee was one of my first mentors, and she’s always struck me as a particularly organized and efficient writer.

When I called her recently to ask about her process, she confirmed that she always sketches out a structure before she writes. “It’s like a crutch for me, I need something to hang on to or else I’m wandering,” she says. “Some people say, ‘Oh, just start writing and don’t worry about how you put it together right away.’ I think that’s the worst advice you can give anybody, because if you don’t know where you’re going, you’re lost.” Before she writes, Blakeslee outlines the story’s beginning, middle and end and then relentlessly sticks to her outline.

Unlike Blakeslee, I never outline, but I do spend hours thinking about my story’s lede and narrative arc before I ever sit down to write. For every hour I spend writing, I spend many more fidgeting (or running or skiing) while turning the story over in my mind. Often I’ll deliberately focus on finding a lede and it’s no accident that my best ones have come to me while running or biking or walking the dog. Blakeslee admits she does this too, and our approaches may not be as different as they seem.

“You’re actually thinking about structure much earlier than you think you are,” says Tom French, a Pulitzer Prize-winning journalist who teaches at Indiana University. “The moment you decide on the universe of your story, you’re making a decision about structure.” As an example, he points to his book, Zoo Story: Life in the Garden of Captives. He wanted the book to explore the notions of freedom and captivity, and when he learned that Lowry Park Zoo in Tampa was preparing to load 11 previously free-roaming elephants into crates to fly them across the ocean to
their zoo, he decided that this elephant transfer would play a central role in his story. French’s decision to focus his book on this incident and the Tampa zoo in particular was a major structural decision that he made before he ever started writing.

Which story to tell is often the most difficult structural decision a writer faces. “When you do the research you have this enormous bolus of information and you could probably write five or six stories, but you’re only writing one and you need to know, what is this story about? What’s the central idea?” says Blakeslee.

Environmental journalist Bruce Barcott uses an old screenwriter’s adage to help him find the story. “Somebody wants something,” says the former Guggenheim fellow and National Magazine Award finalist. This wanting can be a scientist seeking a breakthrough, or maybe it’s two camps arguing over a disputed piece of land or knowledge. In some cases, it’s simply a species that wants to survive. Whatever the desire, it should drive the narrative, Barcott says.

Most stories, French says, fall into one of five basic narrative structures: boy meets girl, there and back (a journey), us versus them, making it (transcending an obstacle), rescuing the princess from the underworld, and the most popular story of all—the Cinderella tale. Kurt Vonnegut called these structures the shapes of stories, and the theories of storytelling he describes in this entertaining lecture can easily apply to science narratives too.

“If you look at these patterns, they’re each a way of seeking meaning—either through love or friendship, the defeat of the enemy or the transformation of the self,” says French. “One of the primary functions of stories is to find meaning out of the randomness around us. That’s why structure is so hard—it’s a way to create order out of something that’s not so orderly.”

For advice about story structure, French recommends the DC Comics Guide to Writing Comics. “Some of it applies only to comics, but the other 80 percent applies to any story, page 32 to 78 in particular,” he says. French advises his students to avoid unnecessarily complex structures. “What you want is for the structure to be as simple as it can be so that the reader has the best chance possible to think about the complexity of what you’re trying to get across,” he says. “The more complex the material, the simpler the structure should be.”

New writers sometimes shy away from a chronological structure out of fear that it will seem pedestrian, but that’s a mistake, says French. John Bennett, an editor at the New Yorker, has said that writers for the magazine can use any structure they want, but at the end of the day they will change it back to chronological. “It’s really hard to jump back and forth in time without giving the reader whiplash,” says New Yorker contributor Jennifer Kahn.

There’s a reason certain structures turn up again and again—they work, says French. One example is the A-B story, in which the narration switches back and forth between story lines A and B, which are told in parallel until they intersect. The Beatles song Eleanor Rigby is a classic example, French says.

In her award-winning New York Times Magazine story What Broke My Father’s Heart, Katy Butler uses another common structure, the broken line, which in this case zig zags between
Butler’s personal narrative about the death of her father and then her mother and her reportage on end-of-life issues. Butler chose this structure early on in her writing process and the decision guided her writing.

“What Broke My Father’s Heart] is basically a bummer,” says Butler. “My father got a pacemaker, it was a terrible idea, his dying was prolonged and it exhausted my mother and then she died.” Butler knew she needed to counteract that prevailing downward arc with some kind of upward narrative. One of the positive narratives she chose concerned her own progress from ignorance to knowledge about the health care system, another concerned her mother’s journey from naive trust of the health care system to a kind of moral autonomy. “Our taking back that ability to make our own choices became a type of upward narrative,” Butler says. “My mother was still alive when I began writing. Her death became, in an odd way, a positive ending. She faced her death in a very clean and courageous way. Her death becomes a triumph.”

The broken line structure is especially effective for weighty science stories. “The reader needs a break from the hard science every so often,” says Blakeslee. “I might be writing about something deeply neuronal and I’ll write eight or nine paragraphs and then I’ll go back into something more entertaining to give the reader a rest. I won’t want them to have to work too hard.” French refers to this strategy as dessert and vegetables. “If you do it well, the reader is glad to have both,” he says.

Some stories lend themselves to a structure involving distinct acts. “I tend to think in terms of parts,” Kahn says, adding that she rarely outlines. In her New Yorker narrative about a controversy surrounding the death of a 9/11 worker, Kahn, a contributing editor at Wired and an instructor at Berkeley’s Graduate School of Journalism, talked with her editor before she started writing and realized that this felt like a three act story. “There was the setup and then visiting with the medical examiner and then visiting with the family.” Once she decided on the three acts, she could focus on the parts and the story came together without a rigid outline.

Barcott just finished a story that used a style of broken line structure found in many magazine features. (For a template of the typical nature essay structure, see Author Brian Doyle’s 2008 Orion piece, The Greatest Nature Essay Ever.) Barcott’s piece opened in the middle of the action, then proceeded to a billboard nut graph followed by a history of the issue, then returned to the present day story and from there, built toward the resolution or the future of the issue. “Usually I don’t outline. I have a groove in my head,” says Barcott. “I’ll know what the general theme of the story is, but a lot of the finer points and sub-themes emerge in the writing. I wrote something last week where I realized, oh, this foreshadows what happens later. Sometimes that only comes out in the actual writing process.”

For the writer sitting on a pile of research and a sense of panic as the deadline closes in, Barcott offers this advice: “Find some similar articles and diagram the hell out of them,” says Barcott. “Figure out that this section does this and this other section does that and then copy that structure. Don’t copy somebody else’s words, but you can use their structure.”

If you really get stuck, watch some movies. Rebecca Skloot finally worked out the structure of her award-winning book The Immortal Life of Henrietta Lacks after watching (and
storyboarding) the movie The Hurricane. If that doesn’t work, spend some more time with your dog—either literally or figuratively. Nothing provides a more reliable source of “a-ha” moments than a walk outside with the dog.

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How Rebecca Skloot built

*The Immortal Life of Henrietta Lacks*

*(Interview by TON guest contributor David Dobbs)*

Rebecca Skloot needs little introduction to most readers of The Open Notebook: Her book *The Immortal Life of Henrietta Lacks* has been a bestseller since its publication in February 2010, and she has toured the U.S. and Europe almost constantly since then talking about the book and the many issues of race, science, and privacy it raises. She’s also been interviewed many times as well. Here she talks with TON guest contributor David Dobbs about two particularly writerly issues the book raises: structure, and the use of the writer as character:

You’ve been interviewed to death about this book, so I’ll limit this to two areas readers of The Open Notebook might be interested in: one is structure and the other is your decision to put yourself in the book and how you handled that.

That’s good. I honestly think that structure is one of the most important tools in writing, yet it’s not something that people often pick apart and really get obsessed with.

Did you carry your concern about structure into this project, or was it something you developed as you wrestled with it?

No, I came to the book already fixated on structure. I did my MFA in nonfiction at the University of Pittsburgh, and Lee Gutkind, who was one of my professors there, taught a readings class where he constantly harped on structure. Every class, the first exercise we had to do with every piece we read was map out the structure. The first day of class we read an essay in class and his first question when we were done was, “What’s the structure of this piece?” We had no idea what he meant. And he wouldn’t tell us. He would just push us and push us, and people would randomly guess things … They’d say, “It’s a profile.” He’d say, “No, that’s not a structure.”

Eventually it clicked for me when he walked me line-by-line through a piece he’d written and said, *See how the piece starts here, then goes back in time here, then forward in time here, but always comes back to that same story I started with, which is actually in chronological order?* The story was about a veterinarian facing tough decisions about whether to euthanize various animals; it did jump around in time a lot, and included sections of exposition, or facts—like the history of the field, or whatever—that weren’t part of the narrative, but when you pulled the essay apart it became clear that the structure was just a day in the life of this vet going from one patient to the next. From that point on, I started obsessively mapping out the structures of everything I read. When I started teaching I made my students do the same thing.

Any student who has ever studied with me would think, “Ugh. Structure, structure, structure; that’s all she talked about.” My philosophy is, once you understand what structure is, then you
can talk about characters and narrative arcs and how to fill in the story. But for me, structure can just completely make or break something.

Skloot’s first visit to Turner Station and the Henrietta Lacks Museum. Skloot says, "Courtney Speed in Turner Station was hoping to turn this building into a museum in Henrietta’s honor; I took this photograph to document the building, its location relative to the sign welcoming people to Turner Station, etc. I then took at least a roll of photos (if not more) documenting every inch of the building that I thought might be relevant someday in the future for describing it."

**What are some key teaching pieces you used?**

I always use John McPhee’s “Travels in Georgia” because it’s such a brilliant structure. Once you figure it out, it’s so basic. But it’s really hard to see it at first. When you say to people, “Read this thing and tell me how it’s structured,” they just can’t. But once you really pick it apart you see he starts in the middle of the story, then he goes forward for a while, then loops back around so by the middle of the piece you’re back at the point where you started, then you continue forward. He’s so subtle and graceful with the structure that few readers even realize they’ve looped back around to the point where the story started because he doesn’t hit you over the head with it. He calls it the lowercase e structure, and once you learn to recognize it you see it everywhere—in so many great stories, books, movies.

**Are there other writers or books who have been particular models for you, structure-wise?**

When I was working on my book, I knew very early on that I wanted it to be a disjointed structure that told multiple stories at once and jumped around in time between different characters. If you learn the story of the HeLa cells by itself, it’s a very different story than if you learn it alongside the story of what happened to Henrietta and her family as a result of those cells. Each story takes on a different weight when you learn them at the same time.

Plus, if I had just told the story from the beginning—“Henrietta Lacks was born … blah, blah, blah”—nobody would have known why they should care who Henrietta was. Then Deborah, Henrietta’s daughter, would have appeared about halfway through the book and the focus of the story would have suddenly shifted completely to her, since she’s really the main character of the book in many ways. Then a few hundred pages later I would have appeared as a character out of nowhere. It would have all been very disjointed and disorienting and wouldn’t have worked.

The other thing I knew was that I wanted my book to read like a novel but be entirely true. That to me is the definition of Creative Nonfiction. So instead of reading nonfiction books as models, I turned to fiction. As soon as I realized I had to structure the book in a disjointed way, I went to a local bookseller, explained the story to her and said, *Find me any novel you can find that takes place in multiple time periods, with multiple characters and voices, and jumps around a lot.* So she did. Some of the most helpful books early on for me were *Fried Green Tomatoes at the Whistle Stop Café*, by Fannie Flagg; *Love Medicine*, by Louise Erdrich; *As I Lay Dying*, by William Faulkner; *Home at the End of the World* and *The Hours*, by Michael Cunningham. I read a long list of similarly structured novels that all proved helpful in some way or another: *The Grass Dancer*, by Susan Power; *How to Make an American Quilt*, by Whitney Otto; *Oral
History, by Lee Smith. I also read a lot of important African American authors to immerse myself in their voices, cultures, history: Zora Neale Hurston, James Baldwin, Maya Angelou, Alex Haley, Ida B. Wells, W.E.B. Du Bois, Toni Morrison, Edward P. Jones, Albert French … it’s a long list.

In a way you have to claim the right to do certain things fairly early in a book, or you can’t do it. In this case you had to claim the right to go backward and forward in time. You wait a while to get you in there—you don’t appear until page 67. But that’s early enough.

Right. This relates to the famous line from Chekhov: “If in Act I you have a pistol hanging on the wall, then it must fire in the last act.” You need to set the reader up early for the story that follows while not introducing extraneous stuff that isn’t related to the plot.

In this case, since I knew the book was going to be a braid of three narratives (the story of me and Deborah; the story of Henrietta and the cells; and the story of Henrietta’s family), I needed to introduce all three strands of the braid up front, so I wouldn’t lose readers later. Doing that lets readers know what to expect and gives you license to play with the structure and timeline because you’ve prepared them for it. I spent a lot of time working and re-working how I’d handle introducing all three stories up front since there were so many things to squeeze in.

How do you get all those into the beginning of the book?

In a way there are three beginnings to this book because there are three different narratives. The prologue introduces the “me” side of the narrative where I write in first person. Then right after that I have that one little page in Deborah’s voice, to get her firmly in there. I struggled with that. I knew she had to be in the beginning of the book so you’d know she was going to be a main, strong character. I made countless attempts at that using different scenes from late in the story (for a while the book started with the scene of her seeing her mother’s cells for the first time, which is now part of the climax of the book in the third section). But none of that worked because it detracted too much from the real beginning: the moment Henrietta walks into the hospital for the first time in 1951. Eventually I realized readers just need to hear Deborah’s voice enough at the start to know there’s something big coming from this person later on that we’ll come back to.

Back to the larger structure. You start at 1950, and you pop back to 1920, and then essentially you come back to mid-century, end of century, mid-century, end of century, mid-century, end of century. And you progressively spend more time around 2000, and at a certain point it becomes more the story of you and Deborah, once you have the backstory established. How did you plot these time shifts?

I actually mapped it all out with index cards. The one chronological story that goes throughout the book is the story of me and Deborah. That’s totally chronological, never jumps around in time. Having one chronological story helped anchor the structure so I could jump around with the other stories more, because you always came back to that one straightforward narrative.
As I said earlier, I saw the structure of the book as a braid, with three stories that wove and wove and wove. But at a certain point the three strands of the braid became one and the narrative was just a straightforward chronological story from that point. That happens on page 231 with the sentence, “That reporter was me.” That’s the moment that all three of the narratives come together, and then it becomes just one. There’s no jumping back in time after that.

The story of you and Deborah is the one with the most classic narrative tension—there’s a suspense about what will happen.

It’s a road-trip—a journey where everybody gets transformed. I thought a lot about that element of narrative tension and how structure can help build the suspense. I learned quite a bit about that from novels, but even more so from movies. My boyfriend is an actor, writer, and director, and he started saying, “You should be watching movies because this jumping-around structure is one of the most standard movie structures.”

So I started watching a lot of movies structured like that and eventually found my way to “Hurricane,” about Hurricane Carter, the boxer. As I was watching it, I just freaked out because after the first few scenes I realized, Oh my God, this is the structure of my book. Three narratives braided together, a journey, etc. So I storyboarded that whole movie frame-by-frame on color-coded index cards (one color per narrative thread). I’d already mapped my own book out using the same three-colored index card scheme, and I’d mapped out a structure, but it wasn’t working.

After I mapped out “Hurricane” I spread the cards out on a bed and put my book’s index cards on top of them, lining up the colors, to see how the film was braiding differently than I was. I immediately realized the problem with my structure was that it didn’t move around in time fast enough. That was the big lesson I learned from movies: that to make this kind of structure work, it has to move quickly. You can’t linger too long in any one time period or you lose the momentum of the other two.

How many designs did you try but throw out?

Oh man … From the very first version I wrote to the first version I considered a first draft, I probably went through easily 15 different structures. And that doesn’t count the many times I revised it after that: I’m a heavy re-writer. Once I had a first draft done, I rewrote it completely at least six times before my editor had to pry it out of my hands. I could have kept rewriting it forever. There isn’t a single paragraph from the first draft that made it into the final book without being rewritten. I’d bet money that there isn’t a single sentence from the first draft in the finished book.

This will give comfort to others who are struggling.

Now I want to move to the second topic. You’ve talked before about your decision to put yourself in the book as a presence, a character. What were the arguments in your own head, either as you saw them then or as you see them now, against and for putting yourself in?
Well, for me the argument for years was all against. I refused to be in this book. I think a lot of potentially great stories out there have been damaged and in some cases ruined by a writer not being able to step out of the story and let the story happen. When I teach, I always harp on my students, “Stop inserting yourself in other people’s stories.”

There are times when I think writers should be in stories. You may be an actual character in the story, or you might be essential as a bridge between the reader and the story—there are some cases where stories are so foreign to readers that having a first person writer in the middle that fully understands the story can help readers relate to it. I wrote a story for The New York Times Magazine about people who spent tons of money on veterinary care for their goldfish; I put myself in there as a sort of sympathetic bridge toward understanding the people I was writing about. Most readers could relate more to me in that story (someone trying to understand why anyone would do MRIs and CT scans and surgery on a goldfish), than they could to the people I was writing about. In the end, I did understand their motives and saw the ways they were similar to motives we all share when it comes to love and difference—because of that, my presence seemed more likely to help readers connect to those characters than if I’d just told their story without my experience alongside it.

But other than those two situations—the writer as essential character or writer as bridge—I think there is no reason to be in a story.

In this case it offers a substantial gain: By seeing the Lacks family try to deal with you, we’re seeing them try to deal simultaneously with an intrusive world but also with a part of the world that wants to be more sympathetic to them—and a changing view of how human subjects should be used.

Exactly. Pretty early on, when I was struggling with this, I knew this wonderful fiction writer named Albert French who lived right around the corner from me in Pittsburgh. I would talk to him about the story as I was figuring it out. And he kept saying to me over and over again, about the Lacks family, pounding it into my head: “Their resistance to you is part of the story.” At that point I didn’t know why they were resistant to me. He just kept repeating that. I realized I had to figure out why they were so resistant to me and that doing so would lead me to the real story. Which it did.

Plus things started happening between me and Deborah that were not your usual writer-subject things, like her slamming me against a wall … like faith healings and something that resembled an exorcism. I would come home and tell my family and my agent and my friends about what was going on and they just kept saying, “This has to be in the book! This is part of the story.”

Even Deborah started harping on me. She would say, “Don’t you make me be in that book by myself. You’re just as much a part of this story as anybody else now.” That’s when I realized I had to be in the book because I was part of the story. It wasn’t that I was inserting myself. Without realizing it, I had actually become a character in their story.

Like it or not.
Yeah. Like it or not. I was one in a long line of people who’d come to them wanting something having to do with those cells, and in some ways, my presence in their lives was one of the most complicated yet: I was there for more than a decade, exposing Deborah to situations and information she never would have been exposed to. She wanted that, and I couldn’t have stopped her once we started, but some of those situations turned out to be dangerous for her. She came very near a stroke at one point because of information we found together about her sister.

The story of the HeLa cells is about many things—it’s about science and ethics, race, class, medicine, education. But overall, it’s also about unintended consequences: of doctors, of well-intended science, of journalism. I tell the story of all the other journalists who came along before me and the impact they had on the family. Eventually I realized it would be dishonest to not include the story of my own character, the journalist who came and didn’t leave for ten years. I also felt like I needed to include that story as a form of disclosure, so people could understand the relationship I developed with Deborah.

You’ve set up nicely my next question. This is something I’ve been dying to ask you since I read the book. First of all, you break a million rules of journalism—you’re incredibly embedded in this family, completely enmeshed. The story is sort of out of control. Deborah even tells you on page 233, “You have got no idea what you’re getting yourself into,” and you did not.

Clearly.

So reading it I had a strong, growing sense that we had a Rebecca Skloot, a mature writer, who’s writing a book about a young writer named Rebecca Skloot who was smart and fearless but nevertheless inexperienced and on the brink of major trouble all the time.

Clearly. Yes. Right! (laughter)

Really. You end up in dangerous places; you’re dropped in homes of people who have reason to be hostile to you; at one point you seem in direct and immediate danger of assault when Henrietta’s son Zakariyya is standing over you, yelling at you in rage, and you’re saved—this is my favorite line in the whole book—when Deborah, whom you’ve been taking on reporting trips, for God’s sake, saves your ass by popping up out of nowhere at your shoulder and asking, ”Y’all still reportin’?”

Yeah, I know (laughter). I loved that—definitely one of my favorite lines too.

I think that was the moment that this image crystallized for me: of this young writer, not the one writing the book but the younger writer researching the book in the book, skating ever further out over ever deeper water covered by increasingly thin ice—and miraculously never falling through. Sometimes you could hear the ice crack.

To me this created an added layer of tension, and I suspect that for readers who aren’t thinking of Skloot the character versus Skloot the author, it created a tension, too. Did you mean to be one Rebecca writing about another Rebecca? Or did that sort of happen?
I was conscious of it only in that I was constantly arguing with my younger self.

**How do you mean?**

Throughout the book I was learning how to be a reporter and how to write. I started fresh from an undergraduate biology degree with no real training in journalism and no clue about how to do any of this. My notes from my first trip to Turner Station were horrible. I sat down ten years later to write that scene (a scene I hadn’t planned to write because I wasn’t planning to be in the book), and I opened the notebook and thought, “That’s all you wrote down? You moron! What were you doing?” My version of notes of the street where I was driving would be: “Dog. Trees. Brick.” It was useless information.

The thing that saved me was that I took compulsive amounts of photographs. I photographed everything—every room that I was in, every person I talked to, every street that I was on, the sky to capture the weather, you name it.

**So you were over-reporting visually.**

Yes. Also I tape-recorded everything, including just driving around in the car yelling at myself—the 20-something me is in a car trying to convince myself to get out in the most dangerous part of East Baltimore and start knocking on the doors of strangers who I know aren’t going to be happy to see me … I’m driving around yelling into my tape recorder because I’m afraid. “Just get out of the car!”

But I would also hold up my tape recorder and drive and just babble into it: *I’m driving down the street, and there are all these kids running around in the street and they’re wearing these clothes and they look like this and they’re waving at me and their moms are hanging laundry in front of houses that look like this …* So when I went back and transcribed all my tapes, everything was there, including my internal issues, and that, combined with the photographs, let me go back and rewrite those scenes. But I also re-reported many of them. I would go back to the people who were there at the time and interview them about scenes that I had actually witnessed myself, to make sure I hadn’t missed anything. Many times they’d be like, “Weren’t you there? Why are you asking me these questions?” And I’d think, “No, that wasn’t me; that was ten-years-ago me; that’s actually a totally different me.”

Writing the first-person stuff was hard, partly because I was resistant but also because it involved this weird battle with my younger, inexperienced self. Listening to these tapes later, it really registered, “Wow, you were doing something sort of crazy right there.”

**Right. That’s the feeling I got repeatedly: “Oh my God, she just invited Deborah to do the reporting with her!” I was thinking as I read, “This cannot end well.”**

But it did.
People often ask if I wish that this book had taken less time. I wouldn’t trade those ten years. If I had written this book faster, it just wouldn’t have worked. I needed all that time to really understand the story and how it all fit together.

YOUR ENMESHMENT WITHIN THE FAMILY KIND OF GOES AGAINST A JOURNALISTIC IDEA ABOUT INVOLVEMENT AND DISTANCE FROM SUBJECTS AND SO ON. DO YOU THINK IT’S IMPORTANT TO KEEP A CERTAIN DISTANCE, AND IF SO, HOW DO YOU RECONCILE THAT WITH HOW CLOSE YOU CAME TO BE WITH THE LACKS FAMILY?

I think that it’s important to maintain distance in terms of autonomy of the story. So no matter how close and enmeshed I got with the Lacks family, there was never any question that I was a reporter. Deborah would call me “her reporter,” and I think that in part was because I was constantly reminding her that’s what I was. A reporter. I always had my notepad out and my tape recorder on because I felt like it was essential to have that constant reminder there: everything we talked about was going on the record. Deborah had no problem with that. When she had a point to make that she felt strongly about, she’d grab my tape recorder out of my hand and yell into the microphone, then she’d have me play it back for her so she could make sure it got recorded. There was never any question about our relationship being reporter and subject, and that I wasn’t just there to do an as-told-to story of the Lacks family’s life. We talked a lot about the other people I interviewed and research I did because I felt it was important to always be clear that I was telling all sides of this story, not just theirs. Which is what Deborah wanted anyway, so that was never an issue.

That said, I do feel like you have to open yourself up to the emotions of the story and be vulnerable as well. In that way, I’m not a fan of distance. With the Lacks family and everybody else, I have always been a very open writer. I feel like, I’m asking you endless questions and expecting you to answer them no matter how personal; it’s only fair that you be able to do the same to me. I think it helps build trust.

YOU GO IN GUARDED AGAINST DEBORAH AND SHE’S GONNA THROW YOU OUT.

Oh yeah, to win Deborah’s trust, you’d have been that open, and then some. She spent so much of her life being deceived, having information withheld from her, she couldn’t trust someone if she didn’t feel like she knew them.

A GLIMPSE BEHIND THE SCENES:

• A sampling of Skloot’s handwritten notes from her early reporting

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Deborah Blum traces a poisonous history

(by TON guest contributor Jyoti Madhusoodanan)

Pulitzer Prize-winning journalist Deborah Blum’s five books have immersed her in the worlds of animal rights, the psychology of affection, the neurology of sex, the search for paranormal phenomena, and the chemistry of poisons. Her best-selling book *The Poisoner’s Handbook: Murder and the Birth of Forensic Medicine in Jazz Age New York*, published in 2010, traces the origins of modern forensic medicine through the lives of two scientists as they navigate crime and chemistry in early 20th century New York.

Here, Blum talks with TON guest contributor Jyoti Madhusoodanan about the research that shaped the book and the importance of a writer’s perspective:

How did you come up with the idea for *The Poisoner’s Handbook*?

I was just looking for a way to write about chemistry! I love chemistry, it’s a beautiful science. We are a walking collection of chemicals. We drink and eat and swallow chemicals every day and most of them don’t harm or kill us; some are even useful. And also, I really like poisons. What was it about this small group of chemicals that were so uniquely destructive? But I was also thinking about how it would be fun to do this in a subversive way. What if I could tell a story about poisons like an early 20th century murder mystery?

How much of your research and structure was outlined in your proposal, before you started writing the book?

For my previous books I’d always written a firm proposal, in the 20 to 30 page range, defining the idea and structure of the book. With *The Poisoner’s Handbook*, I had just finished doing a narrative history—*Ghost Hunters*—and my agent suggested that I write a short proposal describing this poison idea I kept talking about. So I wrote a three-page proposal saying vaguely, “Poisons are really cool…can I write about them?” and it got accepted.

As always, I signed the contract and spent the advance. And then it really struck me: What in the world is this book about? For other more brilliant people than me this method might work really well, but I was panic-stricken. It would have been much better for me to have figured out the proposal before I was on the clock. But I have thought that I would never have found my two main characters, Alexander Gettler and Charles Norris, if I hadn’t been so desperate during my research later.

How did you come across these main characters?

I was reading everything I could find about poisons—journal articles, textbooks of the time, newspapers and magazines for murder cases. I was searching the archives of the newsletters of the American Society of Forensic Scientists when I first saw a reference to Alexander Gettler as “the father of American forensic toxicology.” And I was hoping to find a biography and
couldn’t. He and Charles Norris were lost in footnotes, and no superficial or obvious search would’ve brought them up, because they just weren’t there.

Then, I also discovered the New York City municipal archives, where I found all the letters of the New York medical examiner’s office from the year Norris started until his death. Then I pulled archives from the New York City DA’s office from that same time period as well. I checked records at Bellevue, where their offices were initially; the New York City Historical Society; and the public library, to find newspapers that weren’t online—like, say, the *Brooklyn Eagle* of 1933. I used ProQuest historical newspapers a lot, which are fantastic because they archive online *The New York Times* back to the first edition, the *Chicago Tribune*, the *LA Times*—and they’ve added more papers as well.

I also got a friend at a newspaper to help me find Gettler’s family. They got me a list of every single Paul Gettler in the New York area and I started calling them all, until I found the right Paul Gettler—it was very helpful in that case to have been a newspaper reporter...you’ve built a career annoying people so it doesn’t really bother you. The Gettler family was wonderful with providing personal reminiscences.

**How did you focus your timeline?**

I knew I was going to be zeroing in on Norris and Gettler for the main narrative arc of the story. I did a previous chapter on chloroform to set the scene of what it was like before they came into office. For the ending—Norris died in 1935 but Gettler died decades later and he’s the toxicologist—did I want to follow him for the rest of his career to the end?

That would’ve made an encyclopedia of poisons rather than a handbook, so I thought I’d end sometime around the time of Charles Norris’ death. I chose to end with the Fanny Creighton case—she’s an arsenic murderess who killed her brother in 1923, and then 12 years later she killed a boarder in her house. The first time she got away with it; the second time she didn’t and was executed. The first time Gettler was a witness for the defense; the second time he was a witness for the prosecution. So she raised all kinds of interesting issues, and she was executed the year after Norris’ death. That really focused all the points I wanted to make about everything that had happened during that time period—why they were able to build this excellent case against her later, which they couldn’t earlier. So I pushed the book just past Norris’ death to Fanny Creighton’s execution.

**How central was the history itself in your research?**

Once I’d established that time frame, I knew I wanted to give it that early-20th-century Agatha Christie-like feel. Even a “chemical” history is still a history set in a particular time period. Floating through my story were World War I, Prohibition, women getting the right to vote, and the whole anarchistic culture of the 20s, where everyone was violating the constitution simply by drinking, and the culture itself was just: “How much can I get away with?”

I did a lot of scene setting to provide a sense of these times, like the carbon monoxide chapter started with this description of this busy street in New York. But more than just setting scenes as
backdrops, I think of the period itself as a character in my book, important for people to understand. For example, why do you have to mess around with 6,000 brains to figure out whether someone’s drunk at the time of death? And where are you getting these brains in a time that alcohol is illegal?

Why did you focus each chapter around a particular chemical, and how did you choose them?

I knew Norris and Gettler were a good story, but is “The History of the New York Medical Examiner’s office between 1918 and 1935” a story worth writing? It had to be more than just a single obvious historical narrative arc. I chose to combine these two lines of the story into a braided narrative of the chemistry and the lives of Norris and Gettler, to come up with the final structure. Part of the story is the history of the ME’s office, but it is also the story of poisons in those times, and how these two scientists tackled each one. I framed each period around one poison, and then re-organized my structure to say, “What’s the poison of 1922?” So that the book would be a story of poisons and the role they played in life then, but it also progresses through the lives of Norris and Gettler and what they accomplished.

How did you outline this narrative structure?

With this kind of braided structure, it is important to remember where the multiple strands of the story come together. For example, in the proposal for the book that I just did (which I’m being very cagey about because I just sent it to my agent) I worked out a very definitive structure involving three scientists in three different parts of the country. Though there are three narrative lines, they can’t be parallel. They have to intersect, physically and intellectually. When creating multiple plots, it’s all about where the strands intersect—where I bring them together or pull them apart, and where will I bring them back together? How long can I continue with one strand before people will lose track of the others?

For Poisoner’s Handbook, I didn’t have such a structured proposal to work with, but during my research I created what I think of as a “living outline.” I created the basic timeline and major arc of the story, so I knew where I was going to start and where I wanted to end, but with the clause, “This will work if I find a good story.” My research had to follow that arc, but if something interesting popped during the research, I’d change the outline based on that.

So I started with a rough outline, and I moved poisons around as I found certain cases that took the story forward. As I continued with the research, I plugged them into my outline. For example, I found a great mercury case where this man is falsely accused of murdering his wife. So then the mercury chapter was structured around that. The other example that really stands out for me is of the government poisoning alcohol during Prohibition. I’d been reading all these histories of prohibition and never saw anything about it, but in searching the newspaper archives, I found several stories about it. It really changed the way I had planned to write about that period.

How did you keep track of this living outline?
During my research, I catalogued obsessively. I set up different files and organizational structures, and I used RefWorks for the standard citations, so I was keeping constant track of my sources. In addition to organizing by year, I organized by poison. Say, here’s every reference about arsenic and the major point it makes. At the same time, I did physical, old-fashioned filing—two cabinets’ worth. I printed out everything about arsenic in The New York Times from 1920 to 1935, and filed them chronologically as well. So I had parallel catalogs, by year and by poison—say, an “arsenic” folder organized chronologically, and an “all poisons in 1920” folder. This way, when I knew I was going to make 1920 my arsenic chapter, I could pull every newspaper story about it in 1920 from that one folder. I also did a kind of cross-referencing of my bibliography according to what chapter I thought the references would be in. Sometimes, in addition to these, I use tools like OmniOutliner to keep track of things.

**Going back to your early career for a moment, what were some of the challenges with switching between reporting a news story and writing narrative non-fiction?**

With newspaper writing I always thought about the start of the story: What’s my lede? And I knew I would wind up with some summary quote. When writing narrative, I tend to think about the end as much as the beginning, if not more. If I don’t have an ending, is it a story still? To me, a story is something in motion, a journey. I’m taking the reader on this journey with me—to where?

Thinking about the ending changed the way I did newspaper pieces also. For example, I wrote this story for the Sacramento Bee called “The Dark Side of Light,” about sisters who have no protection against UV light because of a mutation, so they can never go out during the day. So I kept the boundaries of my narrative to a single day: The sun goes up and they have to draw the curtains, the little girls can’t go outside, and in the end when the sun goes down, they can go out in the dark and play in their little wading pool in the backyard. That’s a classic narrative arc, where you know you’re going to start in the morning and end at night, and as this family moves through this one day, you’ll drop back in places and give the history and tell the story and talk to the experts about the disease and so on. But you are always thinking about how the scenes fit together, and how to eventually get back to that moment in the dark.

**What was most challenging in moving from newspaper writing to narrative books?**

The bigger challenge for me was learning to insert my voice and attitude in my writing. Subtly or not subtly, a book author’s thoughts and feelings about the subject infuse the work in a way that we don’t do as reporters. In newspaper journalism, you learn to stick to the facts, that you’re not part of the story. But there’s NO good book in which the author isn’t part of the story in some way or the other.

To give you an example of that, the first narrative book I did was Love at Goon Park where my main character, Harry Harlow, changed the way we think about love and affection with his work. His message was that holding and comforting a child, a solid foundation of love matters in normal human development. So you’d want him to be this big cuddly teddy bear of a guy, and he wasn’t. He hardly hugged any of his kids, he cheated on his wife, was an alcoholic, philandering, chain-smoking, really difficult, complicated guy—a fascinating and great character. But the book
is infused with warmth; it’s about love. And it’s my deep abiding affection for the notion that love matters that is the personality that infuses the book—not his.

**Where is your voice in *The Poisoner’s Handbook*?**

It is my perspective that makes this a true crime story about forgotten scientists. It’s not like there are no true crime stories, or stories about Norris and Gettler, but this poisoner’s journey through this period is my perspective on the facts. On the surface, it’s just two civil servants plodding in this ME’s office through the decades of their lives. But this particular narrative is shaped by my fascination with crime and chemistry.

I try to incorporate this perspective even on short pieces now, like blog posts. You can do narrative writing of many lengths—I do want to say that it doesn’t have to be this enormous process of me spending two years on multiple outlines. There’s no reason why there shouldn’t be beautiful short writing.

**A glimpse behind the scenes:**

- Working guide to *The Poisoner’s Handbook*
- *Ghost Hunters* proposal
- *Love at Goon Park* edits

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PART FIVE: REVISIONS

Ask TON: Are edits suggestions or demands?

I’m never sure if it’s OK to “just say no” to an editor’s edits. Do you view the edits more as decisions that have been made, or as strong suggestions that can be discussed or negotiated? And how late in the editing process can a writer feel comfortable making substantive changes to a story?

Freelance science writer and editor Liza Gross:

Most every writer has suffered the indignity of seeing her (obviously) pristine copy hacked to bits at some point (usually by an inexperienced editor). But all the horror stories notwithstanding, most every writer can benefit from a skilled editor. And skilled editors usually don’t tinker with prose for no reason.

Ideally, editors and writers work as a team, each contributing their own expertise. Editors know what their outlets and readers need and might tweak the angle, point of view, voice, style, or focus of a story to serve those needs. But writers know their material better than anyone else. After all, we do all the reporting, background research, interviews, fact checking, and obsessing over details. Still, sometimes what we think is on the page isn’t. That’s why I look at an editor’s changes as an opportunity to improve my writing. As Truman Capote once said, “Good writing is rewriting.”

How I perceive and respond to edits depends on how well I know the editor, but, in general, I view any changes as suggestions subject to negotiation. While I don’t typically “just say no” to an edit that I’m not comfortable with, I never hesitate to question the rationale for an edit I disagree with. Chances are the editor was trying to fix something that wasn’t working. If I can see the problem, I’ll always suggest an alternative. If I can’t figure out what the problem was, I’ll ask. If an edit inadvertently introduces an error, it’s my obligation to say so and suggest a way to resolve the issue. You aren’t doing an editor any favors by ignoring an introduced mistake.

A fruitful editor-writer relationship, like any good relationship, depends on keeping the lines of communication open. A good editor expects at least some pushback from a writer. But you should choose your battles. If you think a change destroys your carefully crafted prose without adding any value, by all means, speak up. But don’t make a habit of contesting inconsequential edits.

You should be very careful about making substantive changes late in the process. How late is acceptable depends on the type of story and deadline you have. Longer features with long lead times tend to have more leeway for major changes and rewrites than news stories with tight deadlines. The only time I made substantive changes late in the game was when new data came to light that required recalculating several figures in a follow-the-money feature story. If you happen upon new facts or events that you think change the story enough to warrant significant
revisions, you should tell your editor. But asking for late changes runs the risk of introducing errors, especially for outlets with a small staff. If you find errors that change the focus of the story, your editor will want to know. I wouldn’t ask for late changes lightly, especially if it’s just a question of style rather than accuracy. When in doubt, approach your editor with a sense of humility and respect, explain any concerns you may have, and your interactions will likely go smoothly.

Freelancer Mark Schrope:
I once interned at a newspaper where there had been a writer who was so convinced of each of her story’s perfection that she got angry and even fought with her editor if he changed anything at all. And the editor told me he had to admit that for the most part, there really wasn’t anything that needed changing. Neither that editor, nor any of those that have followed would say the same about the drafts I’ve sent them, and I’ve never had any illusions of such perfection in my writing. But figuring out the right balance between my first draft and an edited version can sometimes be a challenge.

One of the first things I do if I get back a story that is covered in questions and virtual red ink, assuming there’s time, is to let it sit. I’ll give the edited version a quick read, maybe flag some items that are going to need follow up with sources, then leave it alone for a night or so. On first read, an edited version might induce much grimacing—it might even feel like a gut punch. But as any shock fades, I often realize that the editing wasn’t nearly as heavy-handed as it first appeared. And I usually realize that at least some of the changes really helped. As it turns out, there’s a reason we have editors.

Whether possessed with the self-confidence to believe your work nearly flawless, ready to accept every change as needed, or somewhere in between, there are some general guidelines that can help you through the editing process. I try to keep a few things in mind throughout. In the absence of very strong evidence to the contrary, I’d suggest assuming:

1) Your editor wants (just as much as you do) to end up with a good story of which everyone can be proud.
2) Your editor is not a buffoon.
3) Your editor is not mean and has no particular interest in hurting you or making your life miserable.
4) Your editor doesn’t think you’re a buffoon just because he or she felt compelled to do some editing. (Note: Your editor may in fact think you a complete buffoon. The relevant point is that the editing is not necessarily the indicator.)

With those principles in mind, you’ll be looking at your editor as partner, rather than foe. The issue becomes one of picking your battles wisely, though I hate to even mention that cliché, not only because it’s a cliché, but because if you’re really thinking of these things as battles then you’ve left behind one or more of the principles above.

Because a sentence, paragraph, or the entire story looks different than it did when you wrote it is not a good reason to argue over edits. So when my instinct is to challenge, I have to decide if it is a battle worth fighting for some concrete reason.
The most obvious concern is a factual error. The writer is obviously going to be in the best position to spot these, so I try to decide whether an edit has introduced anything even a shade off. If so, I’ll add a note explaining the problem and usually suggesting a correction. This is the kind of thing you have to come back to as many times as it takes to make sure the factual error is corrected.

Sometimes an editor will be bound and determined to take a story in a direction it really can’t or shouldn’t go. They may ask for quotes or facts that simply don’t exist and you have to explain why. When you have this kind of discussion (as with any changes and corrections): if you’ve worked with your editor as a partner and not behaved like a horse’s arse, you’re much more likely to find an editor willing to work with you towards a mutually acceptable solution.

The writer should also consider whether what he or she wants is realistic. In print especially, an upper word count may be set in stone. No matter how much you whine about your limit and contend it should be raised, if that’s not an option, you have to quit worrying about the world you’d like to live in and make the best story you can within the pesky confines of reality.

Another important consideration is if there is something that’s absolutely essential to the story that’s been lost: that usually happens when the editor, like you, is trying to get down to the right word count. If space is an issue and you’re going to make the case for essentiality (I have to confess I didn’t even know that was a real word and fully expected a red squiggle line to appear), then remember reality. It’s generally a good idea to make suggestions about some way to cut an equivalent number of words somewhere else to make room for your essential [pieces]. Sadly, though, unlike factual errors, this is a situation where you may have to give up and let it slide.

Those are the two main categories that have to be dealt with most aggressively, though there are plenty of other possibilities. If I think something sounds goofy, or otherwise doesn’t fit, I’ll try to fix that, but I’m not going to waste a lot of energy if the editor isn’t willing to budge. I assume I’m not the only one among us who has at times received copy back that seems to hardly resemble what I wrote. In those cases, I usually assume it’s unlikely I’m going to get back to something that feels like my own voice.

If you’ve done all you can to address the most important stuff, to fight the necessary battles, and some intractable concerns remain, just remind yourself of how sick you are of reading the blasted thing. Once you accept the remaining edits, then you get to finally move on.

Freelance science writer Amanda Mascarelli:
I view edits as strong suggestions, but I absolutely see the editing process as one that is open to discussion and negotiation. After all, my name is on the story, and I need to be able to stand behind what’s written there. I am the one who reported the story, did the background research, and best understands the nuances of the topic and what the sources said to me.

However, that said, I try to choose my battles wisely. If I’m going to feel sick at my stomach when I see something in print, or ashamed to send the link to my sources, then I attempt to
explain to the editor why I feel so strongly about the edits in question. I’ve been quite fortunate in this area and have never had an editor make substantive changes that I couldn’t live with.

In a couple of cases, with quick turnaround news stories, I’ve had editors write headlines that I thought were misleading or that missed an important subtlety. In one case, an editor changed the title based on my input; in another, the editor pushed back and said that the title wasn’t technically wrong and that the subtleties were explained within the story. I thought he made a valid point, and I moved on.

In another story that comes to mind, I questioned an edit that was made because I was concerned that it might be worded too strongly and may have overstated a potential link. I registered my concern with the editor, and I checked in with a source for a second opinion on the wording of the sentence. After some back and forth with the editor and input from the source, the editor and I agreed to let her edit stand. Although I felt that the story could have benefitted from some additional detail to explain the nuances, we didn’t have the space. I let it go and overall felt fine about it.

When it comes to timing, obviously the earlier in the process you take issue with an edit, the better. I try very hard to do all I can to make my editors’ jobs easier, and I know they appreciate not having last-minute surprises. The further along the story is in production, the harder it gets to make substantial changes without having to do significant rewriting. But sometimes small things jump out at me upon the final read—such as when the story is laid out in galley form and I’m taking a broader look—and I absolutely point them out to the editor. Neither of us wants the story to contain errors, and both of us want the story to be its best. I try to see myself as part of a team with the editor; while doing everything I can to avoid being a pain in the butt, I will speak up when I need to so that I can be proud of the final product.

Finally, Helen Pearson, chief features editor for Nature:
I hope that writers will discuss edits with me and push back—within reason.

Writers should always speak up if an edit has made something factually incorrect, or if the edit creates the wrong impression about a subject. If a writer disagrees with the structure of the story, or the style of the writing in the edit, then I’m happy to discuss and negotiate and I’ll try to accommodate changes if I agree they are important. (I actually worry if the writer accepts an edit with barely a murmur, because I wonder how carefully they’ve read the edit and how much they really care about the story!) There is a limit to how much the edit can be negotiated. I edit features, in which we’re lucky enough to have one or two weeks to perfect an edit, sometimes more. After the first—and biggest—line edit, I expect to have some discussion and push-back. That’s the time for the writer to speak up.

But as the story nears the final version, I really want to keep changes to a minimum. When the story is about to go to press, then changes should only be very minor, for accuracy. (News editors with much tighter turnaround times have much less time for negotiation.) I try to be sensitive to the writer’s words and voice; I really want them to feel happy and confident about the story. At the same time, I hope that the writer will appreciate that I’ve spent many hours working out how best to edit a story, and that edits are made for a reason: to make something
clearer, more logical, more suitable for our audience, or to fit on page. Most writers understand this very well and are a pleasure to work with.

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Robin Marantz Henig explores the biology of anxiety

*(Interview by Jeanne Erdmann)*

*New York Times Magazine* contributing writer Robin Marantz Henig traveled to Harvard and the University of Maryland for a story on the biology of anxiety. Alongside top developmental psychologists, she watched research videos on infant temperament dating back to the 1970s and 1980s, then used the videos to set scenes that would bring to life the scientists’ quest to trace anxiety’s developmental course. [Understanding the Anxious Mind appeared in *The New York Times Magazine* on September 29, 2009.]

Here, Henig tells the story behind the story:

**How did you find the story idea?**

I’ve always wanted to write a book about the history of Valium, but I could never get my agent interested in it. The thing that most interested me about Valium is that the ordinary, everyday anxiety it treats did not exist before Valium came along as a way to treat it. So I thought if I wrote first about anxiety, I might find an original way to write about Valium—and maybe eventually convince my agent about a book.

**How did you decide which angle to pursue?**

I looked for stories about anxiety in the *Times* and other good publications. After a while, whenever you do that kind of preliminary research, you tend to see the same names coming up; this time, the name that kept coming up was [Harvard developmental psychologist] Jerome Kagan. He was a source for at least one other story idea of mine that went nowhere, and I didn’t know too much about him other than he was an eminent psychologist who is really good at giving me a lot of time. I called him because his studies of innate temperament as a risk factor for anxiety were so fascinating. What I especially liked was that he had studied inborn temperament longitudinally, from infancy to young adulthood.

Nathan Fox, one of Kagan’s former graduate students [who is now] at the University of Maryland, began his own longitudinal study in much the same way as Kagan did. He did things a little differently, but he was clearly inspired by what he had learned as a graduate student.

Then of course I had to figure out what makes this a magazine article as opposed to a Master’s thesis. I was excited to find [out about Kagan’s and Fox’s] longitudinal studies on infant temperament and how anxiety and fearfulness play out through development, which began in the 1970s and 1980s and haven’t really ended. That kind of study contains its own story. Also I liked that there were videotapes so it was possible to set up little scenes in the story. The videos helped because it was hard for a topic like this to come off the page and be interesting. I spent a couple of days in Boston, where I spent a day with Kagan going through videos of people like Baby 19. He actually didn’t want to tell me too much more about her and he didn’t want me to talk to her because she’s so fragile, which is too bad because she was my lede.
Was it difficult to get access to the infant videos that made up some of the scenes in your story?

I had to do a little convincing of Kagan so I could view them, but not too much. I had to promise not to identify anybody or to reveal details that would identify patients. I had built trust with him, but it wasn’t me he trusted so much as the New York Times. Same with Fox for the videos in Maryland—I had to promise anonymity, but Fox and his colleagues were really excited to have me around the lab.

How did you use the videos in the story?

Writing scenes is always really difficult for me, because when people are writing scenes and working hard at it you can see right through the tricks. I really try to do it in a way that’s not the expected way, but that makes the writing even harder. I want it to be something other than, “This is a guy with a messy desk”—that’s how journalists usually try to bring science and scientists to life. So I could add Kagan in the room jumping up and down being excited at the video.

How do you organize the material for long stories like this one?

I put a lot of effort into the lede and that changes a lot sometimes. I work on that first section and figure out where that lede is going and what the nut graf is going to be and that creates its own kind of organizational structure when I’m almost hearing myself say what it is about the article that’s interesting.

What were the most challenging aspects of this story?

For this story in particular my editor was very nervous—she told me later that she didn’t think I’d be able to pull it off. I think she was still worried about an article that I’d had killed a full year earlier after many, many attempts at fixing it. I think she wanted to head off another experience like that. In the interim I’d had an article published with very little problems that got a lot of good attention. I felt that she was still remembering the other one that hadn’t worked out. She was much more hands-on than usual. She called me a lot to see how it was going; she sent me emails the minute I got back from Boston asking what happened up there; she asked to see drafts and she wanted to talk about the structure. These are things she doesn’t usually do.

How did you respond to having an editor who didn’t think you could handle the story?

You mean to her or to my husband? (Laughter.) I didn’t complain but I did get worried. The result was that the anxiety article I handed in wasn’t all that good. I had had a lot more in it about the brain itself, and she and her superiors wanted more about what happens when you feel anxious.

What were the other challenges?

It was difficult to get the right kind of anxious people to interview. I wanted the anxious people from the study [like Baby 19, who is now a young woman] but most were hard to find. It was
difficult to get people like Kagan to let me talk to them because they wanted to protect them. All the people I had interviewed were people who were taking meds and going to anxiety clinics and doing cognitive behavioral therapy and doing all of this heavy-duty stuff. They had major anxiety problems and didn’t fit in the story anymore. I spoke to many patients and doctors who never appeared in the article—this happens every time.

I wrote the story many, many times—probably 15 or 20 drafts before the story went to my editor…not 15 or 20 totally different versions, but a lot of different versions. I was going down different lines of research because I didn’t know what I was going to end up with. Most of the clinical anxiety ended up dropping out and I just focused more on day-to-day fretfulness.

How did the editing go?

The Times asks for lots of edits. They tell me what’s wrong and I have to go back and figure it out again. In that system I do probably three or four total rewrites. After I turned in the second draft, the deputy editor, Alex Star, who’s now at the Book Review, and I sat down and he imposed a structure. He decided on three different elements of what’s going on in the anxious mind: the innate way your mind works, the way you behave, and what’s going on inside your brain even though you’re behaving differently. He said, “Here’s theme 1, theme 2, and theme 3. Go home and work on it this weekend when you thought you were going to be doing something fun.”

Since you are a longtime contributing writer for the Times Magazine, how do you pitch them?

I still have to push and get lucky. There has to be something newsy or narrative, which is very hard to achieve. Even though I’m a contributing writer, I have to go through a lot of effort to hear, ”Oh, this is a good idea.” That’s just the way it works. My editor often says, “I just don’t see the article there.” I think the anxiety story was the third or fourth or fifth pitch I had before they took the next one. I finish an article for them, which takes about six months, and then I fall into what I call the “Valley of the Stupid,” and I’m in there clawing my way out for another couple of months. There’s a period when just anything seems like I should pursue it and it should be interesting—a few years ago I actually thought for a while that I should write about spontaneous human combustion. I put in a lot of flailing around when I’m in the Valley of the Stupid. I feel like I’m starting over every time, and nothing I come up with clicks. Somehow this anxiety thing finally did click.

A glimpse behind the scenes:

- Pitch letters
- Outline 1
- Outline 2
- Lede: Draft comparison

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Roberta Kwok tracks an asteroid as it hurtles toward Earth

(Interview by Jeanne Erdmann)

In an award-winning story, Roberta Kwok recounted the story of an asteroid from the time it was spotted until the meteorites hit the Earth. This event represents the first time that astronomers were able to track such a trajectory in real time. Kwok’s remarkably detailed narrative won the American Geophysical Union’s Walter Sullivan Award for Excellence in Science Journalism (Features). [The Rock That Fell to Earth appeared in Nature on March 25, 2009.]

Here, Kwok tells the story behind the story:

Where did the idea for this story come from?

The idea came from Oliver Morton, an editor at Nature. I was doing an internship at Nature after my graduate studies in science writing at UC Santa Cruz. Oliver knew that the paper on the meteorites was coming out in the magazine and he wanted a narrative feature to go along with it. The meteorites story was the first feature I wrote for Nature. Until then, I’d written some online news, blog posts, and briefs for the print magazine. I got really lucky; this was a great assignment.

What were your first steps in reporting the piece?

I had an advance copy of the paper; there were about 35 authors and Alex Witze (then print news editor for Nature and my mentor there) helped point out which sources would be best to contact first. I also looked through some news coverage from a few months prior when the asteroid hit. I also had some information from NASA about this asteroid; so I starting calling sources. I didn’t travel for the story—I did all my interviews over the phone. We had a tight deadline because we knew that the paper was coming out.

How long did you work on the story?

I had to finish up one news story when this assignment came and then after that I worked on it fulltime. I spent a week reporting and writing the first draft, and the editing and revising took place over a week and a half, during which I made follow-up calls. I think I interviewed about 28 people and about half didn’t make it in.

How did you decide how to structure the story?

The structure was in place from the start. Oliver wanted the story to start with the moment the asteroid was spotted and take off from there and then continue to the point where the meteorites were found in Sudan. This was a ready-made narrative with three acts: spotting the asteroid, tracking the asteroid and having it collide, and then finding the meteorites afterwards. I knew that I wanted the human story from each stage: everyone from the guy who spotted it first, to the people tracking the asteroid, to the people picking up the meteorites.
How did that planned structure influence your reporting?

I wanted enough detail to reconstruct what happened at each point and then link those scenes back together. I would start by asking each person to tell me his part of the story from beginning to end. The first question that I asked was “How did you hear about the asteroid?” and then we’d go from there. I didn’t have to do much prodding because most of the scientists were natural storytellers and they gave me detail and dialogue and also other people to contact.

Was it easy to reach your sources on short notice?

Most were easy to reach. The only person challenging to reach was Peter Jenniskens, the scientist who wanted to find the meteorites and helped to lead the expedition in Sudan. The problem was he was in Sudan again looking for more meteorites—without email or phone access—when I was reporting the story. We knew that Peter was in Sudan but we thought he’d be travelling to the Netherlands later that week, where I’d be able to reach him, but he ended up slightly extending his stay. I tried to reach as many people as possible to see if they had heard from him—I was contacting his parents and his brother and his wife and his colleagues, without much luck. No one knew much more than I did. There were a few tense days when I wasn’t sure if I was going to be able to reach him. Peter’s wife gave me his parents’ phone number, but they only spoke Dutch, so the most I could do was ask another Dutch-speaking source to pass on my message to them. I never actually managed to reach his brother; I think I tried calling, emailing, and sending a LinkedIn message, but without success. A scientist, Mark Boslough at Sandia National Laboratories, had mentioned a filmmaker who was with Peter Jenniskens in the desert, making a documentary about the meteorites. So he gave me the filmmaker’s email address and that’s how I finally reached Peter.

Was there any aspect of the story you would like to have done differently?

One piece that’s missing from the feature is the point of view of the students in Sudan who found the meteorites. Ideally, I would have liked to have a scene where we see the students finding those first few pieces as they’re searching the desert. I actually did get one of the students on the phone but the language barrier was too much; we just couldn’t understand each other. Instead I wrote it from the POV of Peter Jenniskens: Someone runs up to him and says that a student found something and he comes over and checks it out; but we don’t have the moment when the rock was spotted.

How did you and your editors shape the draft during editing?

Rich Monastersky, a features editor, helped balance the various points in the last section, where we discuss the implications and significance of the find. Initially, there was more information about the chemical analysis of the meteorites and about possible future studies with those rocks. Instead, he had me focus on the context: the fact that this was one of the most direct links they had found between asteroids and meteorites, what we had known about those links before, and examples of missions that had gone to asteroids.
I remember one change that Oliver made that was really important. In the initial draft, I’d opened with the scientist finding the asteroid and then added the typical nut graf—actually two grafs—foreshadowing what the story would cover. Oliver thought that inclusion of the nut graf drained tension from the story and made him less interested in wanting to read more, so we cut that from the opening and instead just very briefly explained in the beginning that the find was significant because it was the first time scientists were going to be able to track an asteroid in real time. That was good advice, and one lesson I would take with me, from writing this story, is that you don’t always have to follow the conventional structure.

A glimpse behind the scenes:

- Lede: Draft comparison

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Michelle Nijhuis searches for hopeful signs amid a bat plague

(Interview by Siri Carpenter)

You never know when a story idea will land on your doorstep—or in your mailbox. When award-winning journalist Michelle Nijhuis learned about caver and microbiologist Hazel Barton from a friend, she had no idea Barton would be her ticket into a science story she had been itching to tell, about a fungus that is ravaging bat populations in the U.S. with devastating speed—and about scientists’ scramble to understand and thwart the disease’s spread. Getting the story involved some scrambling of her own, including through some of the nation’s most iconic caves. [Crisis in the Caves (published online as What is Killing the Bats?) appeared in Smithsonian in July/August, 2011.]

Here, Nijhuis tells the story behind the story:

How did this story idea come about?

It was really serendipity, where a great character and an interesting topic bumped into each other. Usually I’ll move either from topic to story, or from character to larger topic, but in this case those elements developed on parallel tracks. I first heard about the caver and microbiologist Hazel Barton through a Christmas letter that I got from a friend of mine who is a caver, and who had met Hazel at Carlsbad Caverns. At the time, I had no idea that Hazel was working on white-nose syndrome, but I thought, “Hmmm, she seems like an interesting profile,” and I wrote her name down on my idea list, which is just a messy Word document that I keep of potential stories and pieces of stories.

At the same time, I was following the news about the spread of white-nose syndrome in the Northeast, and I was trying to find a way to write about it that would convey the seriousness of the problem but wouldn’t drive readers away. I hadn’t found a way to do that yet.

Toward the end of 2009, while I was looking for some new ideas to pitch, I saw Hazel’s name on my list, and called her to introduce myself and ask what she was up to. She told me that she hadn’t had much time to continue her work at Carlsbad Caverns, partly because she and her lab had been almost completely occupied with work on white-nose syndrome. She’s based in Kentucky, at Northern Kentucky University, and white-nose syndrome had not yet been discovered in the state. So she was spending a lot of her time sampling the hair and skin of healthy bats, looking for natural compounds that might help them resist white-nose syndrome. I was thrilled, because I thought I might have the perfect ingredients for a story—not only an important, timely issue, but also a terrific central character whose work pointed toward some possible solutions.

Did you have any reservations?
One of the reasons I waited for so long to write about white-nose syndrome, and one of the reasons I was so excited to find Hazel, is that extinction—or near extinction—is such a difficult thing to write about. It’s so important, but everyone feels like they’ve heard about it before, and since there are rarely any easy solutions, extinction stories are almost unavoidably depressing. I can’t blame people for choosing to read about other things in the dentist’s office, or over their morning coffee.

A particular challenge with *Smithsonian* is that the magazine tends to be drawn toward charismatic megafauna—while bats are fascinating, a lot of people don’t find them charismatic, and they’re definitely not megafauna. And like most general-interest magazines, *Smithsonian* doesn’t get excited about “doom and gloom” environmental stories—they will tackle serious environmental issues, but they like to find a positive or at least potentially positive angle.

I couldn’t do anything about the charismatic megafauna problem, but I thought that Hazel’s work might give the story some measure of realistic hope. I started out thinking that the hopeful element might be that Hazel—and her colleague Brooke Slack, who was surveying bat populations for white-nose syndrome—succeeded in keeping the disease out of Kentucky, but white-nose syndrome turned up in Kentucky just as I was completing work on the story. In the end, I found a bit of hope just by getting up close to the epidemic, and spending time with people who were starting to understand it. There is and will be huge damage to bat populations from white-nose—there’s no getting around that—but there is texture to the epidemic, and these researchers are working hard to take advantage of that.

**What were your first steps in developing this story?**

I spoke with Hazel, found out about her work, and made sure that she was willing to spend time with me for the story. She was used to dealing with the media—her caving and her previous microbiology work had been featured in several stories—so she knew what she was getting into, and she readily agreed. Then I spoke with my editor, Laura Helmuth. I pitched it as a story about Hazel’s work to contain white nose syndrome and keep it out of Kentucky.

Laura was really important and helpful to the development of the pitch, suggesting several elements that would make it a better fit for the magazine. For instance, Hazel was doing work throughout Kentucky, including in Mammoth Cave, and Laura thought the story would be more likely to get final approval, and be more relatable for readers, if we could describe Hazel at work in that iconic place.

That turned out to be the tricky part; I ended up having to spend an entire year just waiting for Hazel to go to Mammoth Cave. Every six weeks or so I would call her and say “So, heading to Mammoth Cave anytime soon?” and she would be in another part of Kentucky, or in China, or New Mexico. I knew that white-nose syndrome wasn’t going anywhere, unfortunately, and I thought Hazel was worth waiting for. So I just turned to other projects, and kept calling.

**Once she finally was going and you were able to nail down the assignment, where did you begin reporting?**
I really started with that first trip to Mammoth, in December of 2010. I did some background reading and a few interviews before I left, but I didn’t do a whole lot of background interviews until after that trip.

When I went home, I realized that it would be terrific to take a second trip in March to another part of the region and find out what happened at the end of the hibernation season—whether the disease spread or stalled out, and whether some of the ongoing experiments to protect bats had worked.

I had some fellowship funding that gave me the time to take that second trip. I wish I always had the time and money to take multiple trips to report a story. It gave me a whole other perspective on the story, from both a different time and place, and it gave me a wonderful new character in DeeAnn Reeder, the researcher at Bucknell University in Pennsylvania. Because it allowed me to compare the healthy bat population in Kentucky with an infected one in Pennsylvania, it gave me a much deeper understanding of the effects of the disease. And in a narrative sense, it really completed the arc.

**Did you go in with a clear idea of the scientific territory you would cover as well as the story’s general arc, or did that fall into place along the way?**

I had a rough sense, and having written for *Smithsonian* before, I had an idea about how much scientific depth I would be able to go into without losing readers. One part of the science that I was unexpectedly impressed with along the way, and that I tried to emphasize, was the sort of evil perfection of this fungus—it’s just perfectly suited to take hold in hibernating bat populations. Almost all of the scientists talked about it with a strange kind of respect.

**How much time did you spend with your primary sources?**

I had an eight-hour drive round-trip to and from Mammoth Cave to spend with Hazel, and I also spent time in her lab. With DeeAnn Reeder, I spent most of a day in her labs and also spent a very long day, including drive time, with her and her students on the way to and from the field site. I always find it useful to travel with sources—it’s a great way to get a sense of who they are, what motivates their research and what interests them beyond science. I don’t usually conduct formal interviews on the road. As long as there’s time, I like to just let the conversation range freely. But I don’t hesitate to ask questions relevant to the story, and I do keep a notebook on hand and take notes as I need to.

**This story is full of rich dialogue and illuminating moments. How did you get that?**

I’m always drawn to the unguarded moments that happen during scientific fieldwork. I can usually do the explaining and the summarizing of the scientific findings, as long as the scientists explain their findings to me. Often the most important “onstage” role that the scientists play in a story is to demonstrate their motivations and character. So in the field, I tend to spend a lot of time lying in wait for those moments, noticing how people deal with problems, how they react to what they see, how they interact with each other. I was a biologist-in-training myself and I spent
a lot of time on field crews, and I know how important those kinds of personal interactions are to the researchers and to the research itself. And in case readers are in any doubt, it serves to remind readers that scientists are very human.

**Your descriptions of the field expeditions are very detailed. Did you have any difficulty capturing all that detail while in the caves?**

I was lucky because in most cases there was more than enough room to stand up. But I did just get back from a trip for another story where I was reporting underwater, and I’ve been in places where I’ve been reporting on bumpy roads, or while hiking on trails or standing around in rainstorms. I just try to open my eyes and ears really wide and write everything down as soon as possible.

**What was your reaction when you were in the cave in March and learned, along with the researchers, that the bats hadn’t survived the winter?**

I remember being in the moment in the cave and thinking, “Oh crap, how terrible for those bats. And…how terrible for the story.” But as soon as I got home and started writing it, I realized this is a story of real research, and research often fails, and that’s just as important to write about.

**Are there any ways in which you originally conceived the story that did not pan out the way you imagined?**

I’d hoped we’d see a lot more bats in Mammoth Cave; we didn’t see many, which was a little bit of a loss for me just in terms of having a sort of visceral understanding of what a big, healthy bat colony was like. I did look at photographs, and asked researchers to describe other hibernating colonies they’d studied, which gave me a sense of what I might have seen.

**Looking back, what do you see as having been the most important decision you made along the way?**

In this case I felt like the story really relied on the characters. So maybe my most important decision was to read my Christmas letters closely, and take notes on them.

**A glimpse behind the scenes:**

- Pitch letter
- Edited complete draft

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