

Scholar-Practitioner Q+A . . .

An Interview with Ed Yong

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Keywords: communication – science writing – storytelling – on writing –
Not Exactly Rocket Science

In the foreword to the inaugural volume of *The Best American Science and Nature Writing* series, published in 2000,¹ series editor Burkhard Bilger describes in detail the struggle of locating “great” stories for the collection.²

“Science writing, in the main,” Bilger states, “is still a didactic genre” that “starts with a few mildly diverting sentences and then gets down to business. . . . Most of the time that’s all for the best—who wants storytelling when you’re trying to understand particle physics?—but it leaves slim pickings for anthologists. Even science bestsellers like *A Brief History of Time* tend to be admired more for their lucidity than for their literary daring.”³

One of the science-writing subgenres most in need of daring is what Quammen labels “straightforward science reporting”⁴—coverage that aims to deepen public understanding of scientific discovery and research but regularly falls into a superficial cycle of “press release-driven pack journalism,” as John Rennie, former editor-in-chief of *Scientific American*, has observed.⁵ That progress has been made in the last eighteen years is owed in part to British science journalist Ed Yong, staff writer at the *Atlantic* and author of the 2016 book, *I Contain Multitudes: The Microbes within Us and a Grand View of Life*.⁶

Born in Malaysia in 1981, Yong was raised in London and educated at the University of Cambridge, where he earned a master’s degree in zoology. He jumped into science writing in 2006 by way of a blog called *Not Exactly Rocket Science*, which Yong started on a whim, to fulfill an urge to write that



Photo by Kate McQueen

his day job didn't meet. As the title suggests, Yong's blogging style was conversational, humorous, and occasionally irreverent—a delight, in other words, for the curious lay reader. It also found favor with close observers of the field, like Rennie, by treating scientific publications less as isolated news events and more as what Yong has called a “stream of discovery,” a narrative-friendly process that emphasizes the accrual of ideas, research trends, and people.⁷

Not Exactly Rocket Science was acquired by *Discover* and later *National Geographic* (where Yong shared space with the luminary Carl Zimmer) and accumulated 1,800 posts before Yong retired the site in January 2017, to concentrate on longer articles. These have appeared in *Nature*, *Scientific American*, *New Scientist*, the *Guardian*, the *Times*, the *New York Times*, the *New Yorker*, and last but not least, the *Atlantic*, where Yong became the first staff writer to specialize in science coverage, in 2015.

Yong's approach to science journalism, in particular his use of multimedia storytelling, has garnered science writing awards from the U.S. National Academies of Science, Engineering, and Medicine; the Association of British Science Writers; and the Euroscience Stiftung's European Science Writers Awards, among many others.⁸ Story was also a factor in acclaim for Yong's book, a wide-ranging and deeply researched natural history of the microbiome. In addition to synthesizing hundreds of scientific papers, offering on-scene reporting, and contemplating mysteries of the self, “*I Contain Multitudes* has a terrific story to tell,” Jonathan Weiner wrote in his *New York Times* review, one that “sweeps from the personal to the planetary; it changes the way you look at human bodies, birds in the air and leaves of grass.”⁹

I called Ed Yong in Washington, D.C., on November 29, 2017, and we talked about the challenges of integrating storytelling strategies and other literary craft into science journalism. The conversation was edited for length.

Kate McQueen: You've got a science degree under your belt. How did you get interested in writing? Did you start with an interest in doing research and then shift, or were you always interested in pursuing a career in science communication?

Ed Yong: I originally had no ambitions to do this at all. I wasn't really a writer of any kind. I didn't do writing at university. I had no journalism training. I did have a science degree, and from there I decided I wanted to go into research. So, I spent a couple of abortive years as a PhD student in a molecular biology lab before realizing that I was catastrophically unsuited to it, in both skills and temperament. And then figured out simultaneously that I really liked the process of explaining science to other people, and that I was much better talking and writing about it than I was actually doing it.

And so, from there I joined a cancer charity as an information officer. I was a spokesperson for news interviews, I worked on public health campaigns, I wrote stuff for our website, and it became clear quite early on that what I really wanted to do was write. I really enjoyed it, I wanted to do more of it, and so I started a blog called *Not Exactly Rocket Science*, which I used as a way of practicing those skills, of proving to myself that this was something that I care about and wanted to do. And as a way of building up a portfolio of work that I could then show to editors, to pitch for freelance stories.

McQueen: Can you talk me through the transition from writing for your blog to writing long-form articles and, recently, your book on microbes?

Yong: It was a slow process. It didn't happen overnight. At first, I wrote for the blog at about 600–800 words in length for a year and a bit. I slowly made the move to feature articles. I wrote for places like *New Scientist* and *Wired*, and I've written several dozen features now. I don't know the exact number, maybe fifty. After a few years of doing that, I started working on the book, which is by far the longest project I've done. Currently at my work at the *Atlantic*, I specialize in long news pieces, so pieces that have a news peg but tend to weigh in at a 1,200- to 1,400-word count. So definitely not a feature but much longer than a typical news story.

It is challenging to scale up in length. A 2,000-word feature is not just three 800-word blog posts stuck together. And a 100,000-word book is not thirty-three 3,000-word features stuck together. I'm always mindful about structure. I think about it a lot; I make a lot of active decisions about structure as I'm writing. It becomes almost exponentially more complicated the longer the piece of work you're crafting is. It has to be structured well on so many scales. Every sentence needs to flow into the next sentence, the paragraphs need to be cohesive blocks of ideas, each paragraph needs to flow into the next, and so on. You can't just repeat that process if you triple the length and go to a feature. Now you need to think about this new macro-scale and how the different sections are flowing into each other. How do you create breaks in the momentum when necessary; how do you create a sense of dynamism?

If we think about a piece of music, if it were just the same note played at the same rhythm all the time, it would just be really boring. Which is why music has phrasing, it has key changes, changes in pace and volume. Really good writing has all of those elements too. You can jump around in time, you can introduce new characters, you can cut away from scenes, you can go from super detailed accounts of a particular experiment to massive, sweeping sections that detail centuries of work in a few short paragraphs. And the juxtapositions of these things—the change in detail, abstraction, time, place—all

of these things over the length of a piece make it come alive. So, that element of it becomes more necessary the longer you get.

McQueen: It's interesting that you mentioned music when you think about structure. Even on the sentence level, your writing is anything but dull. Your book, in particular, is full of beautiful word sounds and exciting, sometimes unexpected word choice. I wanted to ask you about other literary craft, such as your approach to using metaphor. Perhaps even more than other genres of journalism, science writing relies heavily on exposition as narration. Science writers spend a huge amount of effort *explaining* things. And beloved science writers are often masters of metaphor and other forms of analogy. How do you approach using metaphor in your work?

Yong: Okay, so a few things on all of that. First, language. It means a lot that you said that, because I do think a lot about this too. I care about science and I like it, but I also love language. I love words, and I love playing around with them. I don't think I would still be writing, and I don't think I would be as passionate about what I do if I didn't love the artistic and literary side of it. I love playing around with words. Finding interesting, unusual ways of describing things that go beyond the standard exposition that dominates science news is important to me. The book that I wrote draws on the humanities, from . . . everything from the title to references throughout it. And I care a lot about that. I feel that it doesn't happen enough in science writing. Science communicators spend a lot of time doing the science of pop culture. You get a lot of the science of *Game of Thrones*, or Harry Potter, or Spider-Man. There's less integration of general literature into the mix, and I think that's unfortunate.

Then you asked about metaphor. That's actually something that I've been very heavily, . . . I wouldn't say trained, but that's where my background lies. I've had this conversation with science writers who come from a more traditional journalistic background. We've had conversations where I've said, I find it really fascinating the way you get rich character detail into your stories, how you get these wonderful observational riches about the people you meet, and you're describing these scenes in this really rich way. I was never trained to do that, and it's something I try to work on. But one thing I get from people who have that journalistic training is that they are really fascinated by how science writers use metaphors, the quality of the metaphors they use. And that comes from where our "training" lies. I grew up reading popular science books that were written by people who had science as a background first, rather than literature or journalism. And finding rich, complex metaphors for conveying ideas is just part of the game. It's what people do. And it's that skill that I absorbed just by reading.

McQueen: So interesting that you say that. So, you think that your comfort and ability with metaphors has more to do with your exposure to popular science writing done by scientists, and that people with a journalism-first background excel at description at an observational level but are maybe less comfortable with metaphorical thinking?

Yong: Yes, maybe. Certainly, it's not an all or nothing. Those two circles have a hefty overlap in the Venn diagram. I think it's a reasonable hypothesis. I'm totally happy putting that out in the world and seeing what people make of it.

I also wanted to say something about the storytelling you mentioned. I agree that a lot of science reporting is quite expository. And not all of it by any means. There are great journalists out there writing about the culture of science and the process of it. Conveying science as a process, as a human endeavor that involves struggles, and successes and failures, and quests, and passion and ego and jealousy, and all of those things—that's really important.

The format that forms the bulk of science coverage is the write-up of a new paper that has just come out, which lends itself more easily towards that expository style. Your standard is going to be: Here is what someone found, description, description, some context, fancy quote, some caveats maybe, the end. There is a lot of that going around, and I don't think there's a problem with that. It's just not really the type of writing that I enjoy reading or the type of writing that I like to write. So, I have gradually over the last several years moved toward using more feature sensibilities and techniques in stories. Often what I will do with a news story is almost write it as if it were a short feature, with a narrative lead and a more feature-like structure instead of the traditional inverted pyramid. I might still use [the latter] if the subject is, for instance, very complicated, where it might affect people's health decisions or their reactions to health-related stories, and you want to get the top line up front so it's very clear what you're talking about.

But for the vast majority of stories, I want to get in the heads of people who do the work. Often, they have amazing stories to tell, and this is a really good way of getting people who are not interested in science to read a piece about something they would otherwise never have touched. I just published a piece, literally two hours ago, on hummingbirds. It was really fun. If it had just been a piece that said, here is how hummingbird tongues work and had straight exposition about these [scientific] papers, I don't think it would have done that well. And as it is, while we were speaking, that piece is the seventh most popular thing on the *Atlantic's* website.¹⁰ And I think it's because it's as much about the people as it is about the birds. It's about [University of Connecticut Professor Margaret Rubega], who said, "Huh, I don't think this

makes any sense, how can I work out what's going on." And it's about this student who fell in love with hummingbirds and found a way to film them. It's about the process of discovery.

McQueen: How about the balance of putting story and research into a piece?

Yong: You can do entire pieces about scientists and only vaguely hint at what work they do. I don't think a piece is harmed by not including a ton of expository stuff. It depends on your goals for the piece. I wrote a piece last week about the mental health of researchers who study coral reefs and how they're faring in an age when coral reefs are in jeopardy.¹¹ You have to explain some of the science of coral reefs for people who don't understand why they are dying out, but that's maybe two or three paragraphs, and that's fine. That was the goal and intention of the piece. But these things can work really well together, and they are not an either/or. My partner, Liz Neeley, who runs the Story Collider, says that these things are often synergistic.¹² And if you're to persuade people, if you're trying to convince them, then a combination of emotions and facts, of stories and information, is incredibly powerful. I don't think you sacrifice one for the other. The hummingbird piece goes deep into the weeds about how the tongue works, but it doesn't lead with that. If you're going for super details, kind of wonky things, you need to earn the right to tell people that. You need to work for their attention, and you need to get them to a point where they're like, okay, I'm sold, I trust you to keep telling me interesting things even if it is the mechanics of a hummingbird tongue, which before I would have thought, meh, I'm not really sure I want to read about that.

McQueen: I'm wondering about your experience writing for publications on both sides of the Atlantic [Ocean]. Do you have to adjust your style of writing depending on your audience? Or take cultural framework into consideration for the content you want to address?

Yong: Not really, because I've always written for the internet. It's dominated by America no matter where you are. There [are] probably going to be some good data out there about cultural difference perceptions of science. But I don't know enough about it off the top of my head.

McQueen: And in terms of how you frame your stories, the use of storytelling strategies in science, for example, do you feel like those are pretty much universally embraced and enjoyed by readers no matter where they're from?

Yong: Certainly Western readers, I am pretty comfortable saying that. And just more broadly, different cultures may have different attitudes toward structure, but stories feel like a universal thing. They tap into aspects of the human condition and experience that are broadly felt: Our struggle to do

better. Our desire to learn more. How we cope with failure, how we push ourselves. All of these things are a part of science and a part of science stories.

McQueen: Have you experienced pushback from the scientific community for taking a more literary or creative approach to science writing?

Yong: Yes, for sure. I do a pretty good job of ensuring that work is accurate. I haven't had any complaints about that. In terms of the storytelling approach, you see it all the time. There is definitely a significant portion of scientists who just want the science and think that the human-interest story somehow distracts from it. In my talks recently, I've started showing people one of my one-star Amazon reviews from my book, where someone goes into this at great length and bemoans the lack of seriousness in the book, and how there need to be more charts and tables and lists and figures. And that all these feelings and emotions are distracting from the science. I think that's just a very sad and perverse way of looking at the world. The idea that science is equated with complexity, and lists and tables and charts, and seriousness, and that feelings and emotions are somehow antithetical to it, is just so deeply and sadly wrong. Science is done by people. There are feelings and emotions that drive the scientific endeavor in the first place. To think of science as just a set of results, or just a set of papers, is laughable. It's like saying all there is to know about food is contained in recipes.

I also think that there is this common trope in science communication that you use the human element to sneak the science in. You hook people on the feelings and emotions and then you use that to get them interested in science. Well sort of, but not really. It's not a trick—I'm not hoodwinking people by trying to lure them under false pretenses and then hitting them with the science. To me, the human feelings and emotions are the science. They are an inextricable part of the science story. They are a part that is left out of most publications, but they are so, so important. This goes back to what I said earlier about literary and narrative storytelling and expository writing about science: They don't have to be in counterpoint. They are in fact happy bedfellows. It's not that you have to use one to get people interested in the other. You put them together because collectively they give you a version of science as a total human experience.

McQueen: I feel like your work falls comfortably into that "Third Culture" space between scientific and literary culture. If I could single in on just one quick example: The title of your book borrows from Walt Whitman's poem "Song of Myself": "I am large, I contain multitudes." How did you come to choose it?

Yong: I wish I had a better story for this, but that was always just the title. It kind of sprang fully formed from my head, partly because it so beautifully

conveys the central concept of the book, and it's from a reasonably well-known Whitman poem. And I did specifically want to do that to signpost to people that this is not going to be a typical, stiff, science-y read. I am aiming for a lyricism in the prose, and yanking the title off Whitman feels like it hints toward this.

And the subtitle: We actually had a hell of a time trying to figure out what the subtitle was. The basic brief was that I really wanted to convey the sense of changing people's views of the world around them. And since the title didn't do this job, the subtitle had to mention microbes somewhere. I think it was my U.S. editor, Hillary Rudman, who wrote the subtitle. We were battling some ideas back and forth and I was getting jaded and frustrated, and she said, well what about the microbes within us and a grander view of life. And I said that's perfect. Let's go with that.

That [last] bit actually is a Darwin reference. In the end of *Origin of the Species* he imagines a tangled bank and he talked about all the organism's living within a riverbank, evolving and living with each other, and he has this wonderful quote that "there is grandeur in this view of life."¹³ The subtitle is not a direct quote of that but it plays off it, and people who know Darwin and know that quote will appreciate that. If the title is a subtle wink at poetry nerds, the subtitle is a subtle wink at evolutionary biology nerds.

McQueen: Stephan Jay Gould's *Natural History* column This View of Life also popped into my head. I always like Gould's column title because of the way it seems to make room for viewpoint, or a subjectivity even, which neither science nor journalism always readily wants to do.

Yong: Yes, maybe. Certainly as journalists we are trained to be objective and keep ourselves out of it. That doesn't mean that you can't use your own expertise or speak from a position of authority. But there is a difference between doing that and laying out your own opinion on matters. That being said, you don't have to do that to change people's views. You can just offer them a new view, and that's what my book does. It says, here is a different way of looking at the world around you. Readers can take the lead from there.

McQueen: How do you feel about the creation of personality or subjectivity in science writing? Do you often take a first-person approach in your writing?

Yong: Sometimes. It's there in the book. I'm present in several scenes, usually as a foil. I'm usually being dumb or dorky for failing to spot something. I'm like the hapless novice who is leading readers who also feel that way into this field. I try to keep myself out of pieces unless I feel there is real value in me being there. If I'm part of a scene, or there is part of a dialogue between me and an interviewee, or something like that, then sure. But, you

know, the world is already full of self-aggrandizing journalists, and I don't feel like I need to add to that population.

McQueen: You gave a really moving talk about the risk of personality in science communication for Story Collider, the storytelling platform that bills itself as "true, personal stories about science." It was called "Questioning a Hero," about Sir David Attenborough.¹⁴ Could you tell us a little bit about this piece and why you came to write it?

Yong: The science communication field, and maybe the science community generally, has an unhealthy tendency to deify and overly adulate particular people. And I don't want to name any names but all the obvious ones, all the big names in science communication. And I just don't think that kind of hero worship is healthy or helpful. I certainly don't want it for myself. I think it leads to bad work. You want people to judge you based on the quality of your work, and once you start playing the fame game, people start judging your work based on who they think you are, or what they've heard about you, or whether they like you. And that's just bad. It breaks the feedback cycle. In general, the science community has a bad track record in idolizing people who are arrogant or smug or make some of the mistakes I've talked about, like not understanding the social context of science.

Attenborough, I am not necessarily lumping him in that category. I'm mainly wanting to say that here is someone whose work I loved, and who I deemed infallible for a long time, and clearly he's not, because no one is, but even the fact that I had to have that realization is an issue and one that we need to talk about.

McQueen: Apropos of fame, you've been praised as "the future of science news." I'm wondering what you think the future of science communication holds? And what tools and techniques do you find will be particularly effective for reaching emerging general audiences?

Yong: Much is said about this. People are always looking for the big new thing. A new social network comes out, and people jump on that. Is Quora the way to get people excited about science? Or is Twitter, or maybe it's Facebook, or maybe we need to pivot to video. People are always looking for something new—a new platform, a new publication, a new way of doing things. There is a lot of reinvention of the wheel. Fundamentally the future of science writing and communication will be exactly how it's been for the last several decades and even centuries. You just need to be very good at what you do. Learning the art of telling stories, of crafting narrative, of using metaphors and harnessing language, all of these things are the same, whether you're using short form or long form, whether you're writing a tweet or a feature, or you're doing a radio interview or appearing on TV, or any

of that. You need to know the basics and you need to know the craft. And that's what people often forget. How to explain something well, how to tell a good science story, hasn't changed in the last hundred years. Technology and platforms warp around us, but those fundamentals stay the same. And that's what people need to focus on.

McQueen: If I could end with one last question: What authors do you look to for inspiration?

Yong: I listed four of them in the book. And they're not the only ones, by any means, but they are four whose work meant a lot to me. Kathryn Schulz, a Pulitzer-prize winner at the *New Yorker*, wrote a book called *Being Wrong*, which was incredible. David Quammen wrote *Song of the Dodo*, which I read early on in my writing. Helen Macdonald's *H Is for Hawk*, I also read pretty early. And David George Haskell's *The Forest Unseen*, which was massively influential, and his latest book, *The Songs of Trees*, is also a superb piece of work.¹⁵ All these people have very different writing styles, and they're all incredibly strong in different ways. I could go on and on; there are so many great writers out there.

McQueen: Thank you so much for your time.

Yong: Thank you for your interest. It's been great.

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Notes

- ¹ Quammen, ed., *The Best American Science and Nature Writing*, series edited by Bilger.
- ² Bilger, foreword to *Best American Science and Nature Writing 2000*, ix.
- ³ Bilger, x; see Hawking, *A Brief History of Time*.
- ⁴ Quammen, "Introduction: The Vine-Tree," xvii.
- ⁵ Rennie, "Why Ed Yong Is the Future of Science News," para. 1; see also Rennie, "Time for a Change in Science Journalism?"
- ⁶ Yong, *I Contain Multitudes*.
- ⁷ Sample, quoting Yong, in "Stem Cells Research Highs and Lows," para. 8.
- ⁸ National Academies of Sciences, Engineering, and Medicine, "Communication Awards"; Euroscience Stiftung: European Science Writers Award 2016. Yong also won the best newcomer award from the Association of British Science Writers in 2010.
- ⁹ Weiner, "Human Cells," para. 4.
- ¹⁰ Yong, "Hummingbirds Are Where Intuition Goes to Die."
- ¹¹ Yong, "How Coral Researchers Are Coping."
- ¹² The Story Collider is a storytelling project organized around "true, personal stories about science." Stories are told live in onstage events and in podcast form, available on the project's website.
- ¹³ Darwin, *On the Origin of the Species*, 490.
- ¹⁴ Yong, "Questioning a Hero."
- ¹⁵ Schulz, *Being Wrong*; Quammen, *The Song of the Dodo*; Macdonald, *H Is for Hawk*; Haskell, *The Forest Unseen*; Haskell, *The Songs of Trees*.

Bibliography

- Bilger, Burkhard, ed. Foreword. In Quammen, *Best American Science and Nature Writing 2000*, ix–xii.
- Darwin, Charles. *On the Origin of the Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. London: J. Murray, 1859.
- Haskell, David George. *The Forest Unseen: A Year's Watch in Nature*. New York: Penguin, 2012.
- . *The Songs of Trees: Stories from Nature's Great Connectors*. New York: Viking, 2017.
- Hawking, Stephen. *A Brief History of Time*. New York: Bantam Books, 1988.
- Macdonald, Helen. *H Is for Hawk*. New York: Grove Press, 2014.
- National Academies of Sciences, Engineering, and Medicine. "Communication Awards: 2010 Winners and Finalists." The National Academies Keck Futures Initiative. Accessed October 5, 2018. <https://www.keckfutures.org/awards/2010winners.html>.
- Euroscience Stiftung. European Science Writers Award 2016. July 25, 2016. Accessed November 22, 2018. <https://www.euroscience.org/news/euroscience-writers-award-2016/>.

- Quammen, David, ed. *The Best American Science and Nature Writing 2000*. Best American Science and Nature Writing series, edited by Burkhard Bilger. Boston, MA: Houghton Mifflin Company, 2000.
- . “Introduction: The Vine-Tree.” In Quammen, *Best American Science and Nature Writing 2000*, xiii–xxi.
- . *The Song of the Dodo: Island Biogeography in an Age of Extinctions*. New York: Scribner, 1996.
- Rennie, John. “Time for a Change in Science Journalism?” *Guardian*, January 26, 2011. <https://www.theguardian.com/science/2011/jan/26/science-online-2011-journalism-blogs>.
- Rennie, John. “Why Ed Yong Is the Future of Science News (and You Could Be, Too).” *Gleaming Retort* (blog), February 3, 2011. <http://blogs.plos.org/retort/2011/02/03/why-ed-Yong-is-the-future-of-science-news-and-you-could-be-too/>.
- Sample, Ian. “Stem Cells Research Highs and Lows—Interactive Timeline.” *Guardian*, February 2, 2011. <https://www.theguardian.com/science/2011/feb/02/stem-cells-research-interactive-timeline>.
- Schulz, Kathryn. *Being Wrong: Adventures in the Margin of Error*. New York: HarperCollins, 2010.
- Story Collider. “Home.” Accessed October 5, 2018. <https://www.storycollider.org/>.
- Weiner, Johnathan. “Human Cells Make Up Only Half Our Bodies. A New Book Explains Why.” Review of *I Contain Multitudes: The Microbes within Us and a Grand View of Life*, by Ed Yong. *New York Times*, August 15, 2016. <https://www.nytimes.com/2016/08/21/books/review/i-contain-multitudes-ed-yong.html>.
- Yong, Ed. “How Coral Researchers Are Coping with the Death of Reefs.” *Atlantic*, November 21, 2017. <https://www.theatlantic.com/science/archive/2017/11/coral-scientists-coping-reefs-mental-health/546440/>.
- . “Hummingbirds Are Where Intuition Goes to Die.” *Atlantic*, November 29, 2017. <https://www.theatlantic.com/science/archive/2017/11/hummingbird-tongues/546992/>.

- . *I Contain Multitudes: The Microbes within Us and a Grand View of Life*. New York: HarperCollins, 2016.
- Yong, Ed. “Questioning a Hero.” Story Collider. December 15, 2014. <https://www.storycollider.org/stories/2016/1/1/ed-yong-questioning-a-hero>.

The Recommended Ed Yong

- “A DNA Sequencer in Every Pocket.” *Atlantic*, April 28, 2016. <https://www.theatlantic.com/science/archive/2016/04/this-technology-will-allow-anyone-to-sequence-dna-anywhere/479625/>.
- “Ant Farm.” *Aeon*, July 30, 2013. <https://aeon.co/essays/an-army-of-ants-is-besieging-the-world-s-chocolate-supply>.
- “Consider the Sponge.” *New Yorker*, April 24, 2015. <https://www.newyorker.com/tech/elements/consider-the-sponge>.
- “The Dragon Autopsy.” *Atlantic*, May 28, 2015. <https://www.theatlantic.com/science/archive/2015/05/the-dragon-autopsy/393890/>.
- “How the Penguin Got Its Waddle.” *New Yorker*, March 12, 2015. <https://www.newyorker.com/tech/elements/prehistoric-penguin-waddle>.
- “How the Science of Swarms Can Help Us Fight Cancer and Predict the Future.” *Wired*, March 19, 2013. <https://www.wired.com/2013/03/powers-of-swarms/>.
- “Natural History Museums Are Teeming with Undiscovered Species.” *Atlantic*, February 8, 2016. <https://www.theatlantic.com/science/archive/2016/02/the-unexplored-marvels-locked-away-in-our-natural-history-museums/459306/>.
- “The Next Plague Is Coming. Is America Ready?” *Atlantic*, July–August 2018. <https://www.theatlantic.com/magazine/archive/2018/07/when-the-next-plague-hits/561734/>. (Appeared in the *July–August 2018 print edition with the headline “When the Next Plague Hits.”*)
- “What Mirrors Tell Us about Animal Minds.” *Atlantic*, February 13, 2017. <https://www.theatlantic.com/science/archive/2017/02/what-do-animals-see-in-the-mirror/516348/>.
- “The Unique Merger That Made You (and Ewe, and Yew).” *Nautilus*, February 6, 2014. <http://nautil.us/issue/10/mergers--acquisitions/the-unique-merger-that-made-you-and-ewe-and-yew>.