Fact or Fiction? Researchers Examine Our Shared Concern

The Oxford Handbook of the Science of Science Communication
edited by Kathleen Hall Jamieson, Dan Kahan, and Dietram A. Scheufele. New York: Oxford University Press, 2017. Hardcover, 512 pp., Index. USD$170.

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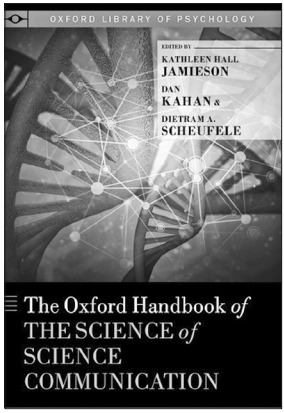

Because the ability to discern fact from fiction in a multitude of public spheres is more important than ever, practitioners and scholars of literary journalism might wish to examine *The Oxford Handbook of the Science of Science Communication*, a cross-disciplinary collection of essays offering well-reasoned explanations for our susceptibility to misinformation. While the *Handbook* focuses on science communicators and the complex task of explaining science to the public, many of the collection's essays contain take-home lessons equally important to literary journalists—especially as more science and nature writers adopt the techniques of literary journalism to communicate science to their audiences.

Literary journalism, according to John C. Hartsock, combines the telling of true stories with "the aesthetics of experience." Whether the storyteller portrays a famine camp in Sudan, describes custom car culture, or recounts the aftermath of the Hiroshima bombing, literary journalism uses techniques traditionally associated with fiction writing, including immersion in the story being told, scene-by-scene construction, and dialogue.

Although reliance upon techniques used by fiction writers might suggest that literary journalism plays fast and loose with the truth, Mark Kramer has written that practicing this form of narrative nonfiction requires that those who call themselves (or whom others call) literary journalists "get reality as straight as they can manage, and not make it up" (25).

In "The Legend on the License," John Hersey—in the earnest but vexed tone he assumed on occasion—set forth one of literary journalism's most important canons: that journalists (New or not) must tell the truth. Some tricks of the fiction trade were acceptable, such as describing a scene in vivid detail or deftly adding a measure of dialogue, but others were not, including adding any kind of invented facts or stretching the truth for the sake of "art" (*Yale Review* 75, no. 2, 1986, 214). But Hersey himself sometimes blurred the truth as he did by creating a composite character from forty-

three different war veterans in his story, "Joe Is Home Now," although he explained what he did and why.

Science and nature writers must also avoid stretching the truth. Rich description of the habits and habitat of a charismatic-but-threatened animal and authentic dialogue between two field scientists are acceptable, but the moment the writer exaggerates or embroiders, credibility as a translator of science is lost.

Lost credibility on the part of the writer is not the only reason for communication failures, however. Sometimes audience characteristics—such as people's beliefs or biases—prevent the message from being received. This is where the *Handbook* can help science and nature writers in particular understand why it is so difficult to reach a skeptical or misinformed audience.

The deficit model of science communication, which suggests that to improve the public understanding of science all we need to do is force feed people more science, is on the ash heap. A group of creative researchers has come together, however, to explore the origins of what editor and author Dan Kahan calls "the science communication problem." In his essay titled "On the Sources of Ordinary Science Knowledge and Extraordinary Science Ignorance," Kahan concludes that members of the public readily adopt bad science because they place more value on the beliefs of those with whom they associate or want to associate than on information provided by experts. Thus, if your friends believe that childhood vaccines are bad, you will adopt that belief yourself to go along with the crowd.

Kahan and company's handbook calls for a scientific approach to understanding and addressing this phenomenon. Kathleen Hall Jamieson—recipient, in April, of the National Academy of Sciences (NAS) Public Welfare Medal for her nonpartisan work on the importance of evidence-based political discourse and on the science of science communication—recognizes that the same factors that distinguish science, such as self-criticism, transparency, and self-correction, can also subject science to criticism by those who don't understand the scientific method and its multiple rounds of hypothesis testing.

According to essay contributors Martin Kaplan and Michael Dahlstrom, narratives animate the abstract and illuminate the human experience, deriving power from vivid portrayals of character and environment that captivate audiences. The danger, Kaplan and Dahlstrom caution, is that being transported by an enticing narrative can weaken a reader's ability to distinguish fact from fiction.

Despite oceans of evidence, established facts and endorsements by authoritative scientific institutions, some scientific messages arouse intense debate. Citing climate change and the childhood vaccination controversy, Kaplan and Dahlstrom highlight how persuasive-but-false narratives have infected the science communication environment. To use a scientific metaphor: water and dust refract, scatter, and bend sunrays passing through earth's atmosphere, changing their intensity and color from bright white to a rainbow palette. Likewise, scientific information might encounter partisans ready to twist and disseminate what once was "true fact" into an enticing, but misleading narrative.

For many, exposure to science ends with high school graduation, notes William

K. Hallman in his essay. Today there is more science information than anyone could possibly learn in a lifetime. Audiences attempting to digest this deluge often rely on faulty mental models and media cues that can muddle interpretation and make the public vulnerable to misinformation traffickers. And upheaval in the media landscape does not help. Nearly half the population gets its science information from the internet. Mike S. Schäfer notes that science coverage has shifted from legacy formats mediated by print and broadcast journalism to internet-based platforms that fragment the public audience and facilitate a plurality of messages.

Brian Southwell examines how scientists engage with the public on social networks. Science communication via social platforms is challenging as users often exist in isolated, self-reinforcing networks. Because not all science topics have an equal chance of becoming part of the conversation on social media, Southwell calls for more research on how framing influences information sharing.

Matthew Nisbet and Declan Fahy, well-known experts in the field of science communication, suggest that perhaps journalists should be required to develop special expertise along with interviewing, investigative, and storytelling skills before they report on important issues like climate change. Whether organizing an elite cadre of scientist-journalists would cure the problems of climate-change denialism and lack of trust in experts needs further exploration.

Kahan, Scheufele, Jamieson, and many of the other contributors address the science communication problem with an empirically based scientific approach. With one voice, this volume of dense but enlightening essays calls for continued study of the science of science communication along with prioritizing development of practical tools with which the public can distinguish science fact from fiction.

As Kahan notes, we understand a lot about how people come to know science. What we need is a cultural and structural shift that protects the science communication environment from misinformation. This handbook is an excellent resource for those seeking to create such a culture.

Whether you write about science and nature or not, learning about the mindset of your audience and the reasons for that mindset might help you choose the right tools—including the techniques of literary journalism—to reach a reluctant audience. John Hersey did just that when he opened his toolbox and found the ideal plot device, the right voices, and the precise tone to convince his audience of war-weary people that the citizens of Hiroshima were human too.