Editor-in-Chief's Note

Troublesome News, Fake News, Biased, and Incomplete News

"You can fool all the people some of the time, and some of the people all the time, but you cannot fool all the people all the time."

-Attributed to Abraham Lincoln

Mary Jo Bang begins her poem about September with these words: "September is work to the center/Of arguments and controversies./Prejudgments and incomprehensions."¹ Although not explicitly about the 9/11 tragedy, this poem, written in 2007, triggered in me thoughts about the incomprehensibility of that horrific event and how many prejudgments, arguments, and controversies about it persist, including conspiracy theories.² We often hear variations of the phrase "History repeats itself," or the French quip "The more things change, the more they stay the same." Looking back at some of the events from 2007 supports the veracity of these views³: (1) Adam Air Flight 574 disappeared over Indonesia-all passengers were lost at sea; (2) I. Lewis "Scooter" Libby, Chief of Staff for US Vice President Dick Cheney, was convicted on a number of counts of perjury and obstruction of justice, and was pardoned in April 2018 by US President Donald Trump⁴; (3) the US Department of Justice released an internal audit noting that the FBI had acted illegally when it used the post 9/11 Patriot Act to justify obtaining personal data on American citizens; (4) the US Supreme Court, by a one-vote majority, upheld the ban on partial-birth abortions; (5) major earthquakes occurred off the coasts of Japan and Peru; (6) a gunman using a semi-automatic rifle killed people in a mall in Omaha, Nebraska; (7) former Pakistani Prime Minister Benazir Bhutto was killed by a suicide bomber; and (8) six cruise missiles armed with nuclear warheads were accidently loaded onto a US Air Force bomber and flown over the United States from North Dakota's Minot Air Force base to Louisiana's Barksdale Air Force Base. Troublesome echoes repeat themselves, some identical, others reframed to fit current times and events.

FAKE AND PREDATORY PUBLISHING

Last year I wrote about fake and predatory journals.⁵ About a generation earlier, I had been a member of a National Institute of Mental Health–convened investigation panel which recommended that charges be brought against Stephen A. Breuning, PhD, for scientific misconduct and the publication of fraudulent data.^{6,7} Publishing altered or fabricated data is considered anathema in science. Those who do so violate ethics codes and also undermine public trust in science. Daniele Fanelli attempted to quantify the extent of this type of scientific misconduct and reported a "meta-analysis of surveys asking scientists about their experiences of misconduct."⁸ The analysis concluded that about 2% of scientists, by their own admission, had modified, fabricated, or falsified data or results at least once. About a third acknowledged other inappropriate actions, such as "dropping data points based on a gut feeling," and "changing the design, methodology or results of a study in response to pressures from a funding source." In other surveys that asked about what colleagues had done, "fabrication, falsification and modification had been observed, on average, by over 14% of respondents, and other questionable practices by up to 72%." A colleague and I have written about the importance of not excluding outliers, a form of omission inconsistent with transparent research.⁹

Tandoc and colleagues¹⁰ published a typology for fake news. They proposed subdividing such potentially misleading material into six types: fabrication, propaganda, satire, parody, advertising, and manipulation. Although it is possible that some scientific articles may fall discreetly into one of these categories, it is possible that these distinctions are not orthogonal—articles may have considerable overlap. As a journal editor, my

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major concern is fabrication. Fabrication can involve using fake author names, falsified institutional settings, made-up data, or the recommendation of nonexistent reviewers (these usually turn out to be pseudonyms linked to the author¹¹). I propose a seventh category, false expository. *Expository* usually means to explain or describe something. I use it to mean to clarify or reveal something. A *false expository* is a preplanned, deliberately fabricated paper intended to expose the improprieties of a publisher or journal. If any reader can offer a better term, I would like to hear from you.

The first false expository that I found is sometimes referred to as the "Sokal hoax." In 1996, Alan D. Sokal, PhD, submitted a fabricated paper to the journal *Social Text*. Sokal's intention was to test the review process and rigor of that journal. He submitted it under his own name. The accepted and published paper contained made-up hypotheses and ideas about quantum gravity that were consistent with Sokal's knowledge of the editors' views.¹² The title alone was wordy enough to challenge almost anyone's intellect: "Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity." Shortly after its publication, he acknowledged his deception. Sokal considered his exposé serious but also somewhat satirical.¹³ A variation of Sokal's hoax was carried out in 2005 by three computer science graduate students at the Massachusetts Institute of Technology. They created a computer program called SCIgen to generate nonsensical papers for submissions to conferences.¹⁴ Their paper "Rooter: A Methodology for the Typical Unification of Access Points and Redundancy" was submitted to the World Multiconference on Systemics, Cybernetics and Informatics. In subsequent years, quite a few efforts were made to expose the shoddy or nonexistent peer-review process associated with some journals.¹⁵ Even though the paper was submitted using a nonexistent author from a fake institution, it was accepted by 157 journals.

The most amusing example of a falsified article is the paper by Dr. Martin Van Nostrand (a pseudonym for John H. McCool, a nonphysician medical writer and editor) in the journal Urology & Nephrology Open Access Journal.¹⁶ McCool submitted a fabricated case report based on a 1991 episode of the Seinfeld TV show, called "The Parking Garage." McCool's patient, mimicking Jerry Seinfeld, suffered from "uromycitisis," a made-up illness characterized by urinary urgency, intense abdominal and lower back pain, nausea and vomiting, and severe shaking. McCool's stated goal was to reveal that fictitious material can be published as genuine—"for a price."¹⁷

HEALTH MISINFORMATION

In this segment, I want to shift our focus to false or incomplete health information news. It is not unusual for me to be annoyed by direct-to-consumer (DTC) health ads in magazines and on TV. DTC ads rarely strike an appropriate balance between benefits and risks. Moreover, risks are usually in small print, stated too rapidly, or spoken or printed against a diverting background. The US Food and Drug Administration (FDA) calls these "distracting elements."¹⁸ Even more troubling are claims made about ineffective agents. This is particularly true regarding treatments for cancers—frightening diseases that evoke fear, desperation, and hopelessness in patients and families.

There are many illustrative agents. I will focus on only two that became popular in the early years of my career and are still around today, over 60 years later. One example became known to me even earlier. When I was in high school, I traveled with my father to Georgia, where he contracted with farmers to grow watermelons. It was bandied about by farmers and others that watermelon juice was a cure for cancer. The same claims are made today. For example, in an article in *Better Homes and Gardens* promoting 12 anticancer foods, Linda Kallman wrote that watermelon "contains lycopene, the famous cancer-fighting substance. ... Plus, recent studies show that eating more fruits and vegetables leads to a lower risk of lung, oral, esophageal, and colon cancer."¹⁹ She provides no references to support this assertion. Elizabeth Somer, advisor for the National Watermelon Promotion Board, states that one in three cancers "could be prevented by lifestyle changes."²⁰ She goes on to write that watermelon "may help inhibit cancer cell growth, boost immune function, and protect against oxidation and inflammation." Ty Bollinger, writing on the website TheTruthAboutCancer.com, says, "lycopene has been studied extensively in humans and found to be protective against prostate, lung, colorectal, endometrial, and breast cancers. Lycopene has also been shown to help prevent heart disease."²¹

Watermelon is indeed rich in lycopene. It is also a good source of vitamin C. It should also be noted that the amount of lycopene in various red-fleshed cultivars of watermelon (aka Citrullus lanatus) can vary; seedless

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