

Terrorism and Timeliness: Scientific Periodicals Respond to September 11 and Its Aftermath

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In the months after the terrorist attacks against the United States on 11 September 2001, terrorism as a scientific topic held a prominent place in broadcast and print news media. The stories generally were produced quickly, given the demand for timeliness. Publishing timely pieces presents a challenge for scientific periodicals. Generally articles in such publications are products of long research, undergo time-consuming peer review, and appear according to production schedules that may include several months between acceptance and publication. With such constraints, timeliness requires changes from usual routines.

Although terrorism has recently generated considerable media attention, the topic is not new. What is now called terrorism has been written about ever since people began writing about battles. Today several journals, such as *Studies in Conflict and Terrorism*, deal specifically with issues, theories, and research related to terrorism. The number of articles about terrorism increased dramatically after the attacks of September 11. Much of the coverage consisted of articles in the popular media and reports by the US General Accounting Office (GAO) for the new Office of Homeland Security. In addition, many online links to previously published articles were established. Many scientific journals have published timely articles about topics related to terrorism. However, as of early 2002, most were not peer-reviewed articles.

Nature Managing Editor Pete Wrobel said, "We have been covering issues related to bioterrorism in two ways: in news and feature stories and in peer-reviewed articles. The news and feature pieces are driven by

our normal news values, although as it happened we had also published in May 2001 a feature on bioterrorism that we were able to republish on the Web."

Wrobel said that on 23 October 2001 *Nature* published online, at www.nature.com, two peer-reviewed papers about anthrax. "The site also has links to the Centers for Disease Control and Prevention [CDC] information pages on anthrax and to CNN's coverage." "The peer-reviewed articles are precisely that—peer-reviewed", Wrobel explained. "We do not commission original research papers, and we would not publish any that did not meet our normal standards. . . . What we have done is ensure that publication after peer review is quick."

Periodicals in the sciences have provided Web links to previous articles related to terrorism. *Scientific American* Executive Editor Mariette DiChristina said her staff met with the publication's Web editors to compile a list of previous stories for the *Scientific American* Web site (ScientificAmerican.com). "We knew our readers would be seeking information about these topics", DiChristina said. "We also are striving to keep up the coverage of these topics on our site." However, DiChristina explained, "we have not changed any of our traditional editorial-review processes. Most of our feature articles are written by expert authors, but *Scientific American* is not a peer-reviewed journal; it is a magazine written and intended for a lay audience of nontechnical readers."

DiChristina recalled that "the board of editors at *Scientific American* held special planning meetings to discuss the unfolding events and what our editorial reactions should be. We discussed a variety of possible treatments for the topics and which ones we preferred." She said that the November issue, on the newsstands 2 weeks after the attacks, included several news stories related to the terrorist attacks, as did the December issue.

"Another, perhaps equally important part

for our readers was to plan how we would address those 'second-day' issues in future articles", DiChristina said. "For example, we had long been working with two authors—an Indian and a Pakistani—who were collaborating on an article about the issues related to nuclear proliferation in the Indian subcontinent. We were able to get that article, 'India, Pakistan and the Bomb', into the December issue."

The editors, DiChristina said, pursued some enterprise reporting of their own. "For instance, an article in the December 'News Scan' [news section] discussed how chemist James M Tour had been trying to raise awareness about the possibility that terrorists would buy chemical-weapons materials through the mail. Tour has argued that anyone could buy these materials. To prove it, he ordered the ingredients for sarin nerve gas from Sigma-Aldrich, one of the nation's most reputable chemical suppliers; he got his order, in full, by next-day mail. A staff editor, George Musser, tested that by placing his own order through a different chemical supplier, and he received his order with no questions. *Scientific American* included this finding in the 'News Scan' article, helping to bring this important issue to light for the public."

The *New England Journal of Medicine* (*NEJM*) used its Web site (www.nejm.org) to provide almost immediate links to previous articles. Also in early November *NEJM* posted two articles slated for the 29 November print issue: a review article on anthrax and a report of the first fatal inhalation-anthrax case in the United States after September 11. In the 8 November print issue, *NEJM* published a letter dealing with bioterrorism preparedness and the September 11 attacks. The 15 November issue included an editorial related to the attacks and a report of a survey of stress reactions after them. The researchers used random-digit dialing 3 to 5 days after the attacks to interview a sample of 560 US adults, and they approached *NEJM* about

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publishing their findings.

NEJM Executive Editor Gregory Curfman explained, "We wanted to do something for the medical community—things that we thought would be instructive and useful. We felt that we had some responsibility to deal with the medical components of this disaster in the best way that we could. On several occasions our publication schedule was thrown into disarray, but our staff took a lot on their shoulders and understood the issue. We actually learned a little bit about ways that we might develop some protocols for use in the future." The journal had already established a committee to deal with facilitating early release of articles, and that experience moved the process along.

The *Journal of the American Medical Association (JAMA)* created links to previous articles about bioterrorism on its Web site (www.jama.com), and its 7 November 2001 print issue included a "Medical News & Perspectives" article about whether the recent attention to antiterrorism would distract public-health efforts from the fight against AIDS. In the regular section of *JAMA* containing items from CDC, bioterrorism updates appeared beginning with the 14 November issue. The 28 November issue included two "JAMA-Express" articles (fast-track peer-reviewed articles) and an editorial about anthrax and bioterrorism.

The impact of September 11 has also been addressed in *JAMA*'s "A Piece of My Mind" section, which contains personal essays related to medicine. The 16 January 2002 issue contained an essay in which a patient compared living with terrorism to living with cancer. *JAMA* Associate Editor Roxanne K Young, who edits "A Piece of My Mind", said she received "quite a number of manuscripts" on terrorism and sought to publish material providing new perspectives rather than what had already been covered by the news media. Young noted the effective use of metaphor in the 16 January piece. "I think the parallels [the author] drew between terrorist activities and diagnosis, treatment, and recurrence of cancer worked pretty well", she said. However, she pointed out, "the health effects of bioterrorism have been an important topic for *JAMA* for some time. We had published a number of medically relevant articles on bio-

terrorism even before recent events. In 1997 we devoted an entire theme issue of *JAMA* to biological agents as weapons." Young said that the entire *JAMA* team (editors, production associates, graphics staff, and so on) worked together to publish the reports in the 28 November issue quickly.

Clinician's Research Digest, an American Psychological Association publication that summarizes journal articles relevant to clinical psychology, devoted its January 2002 issue to posttraumatic stress disorder (PTSD). Editor Elizabeth Altmaier said, "When the events of September 11 happened, I talked with my editorial staff about the possibility of doing an issue related to trauma." In deciding on a specific focus for the issue, Altmaier explained, the staff members "cast as wide a net as possible", maintaining their standards for acceptable-quality research, and settled on PTSD. "We haven't given up the topic either", she said. "Our April 2002 issue deals with critical-incident debriefing, and we will continue to maintain some focus on these subjects."

The most obvious increase in terrorism-related articles has been in the US General Accounting Office, which has been releasing reports weekly since September 11. One database abstracted 20 reports on the topic from GAO in September and October 2001; this was a substantial increase over the three reports released in the 2 months before the attacks.

Even before September 11, the number of journal articles related to terrorism had been increasing. A possible factor was that in 1994 President Clinton called for the Department of Defense to prepare for bioterrorist attacks and in 1999 Congress directed CDC to add a bioterrorism program. The articles on terrorism before September 11 appeared in publications in a wide variety of disciplines—science and medicine, tourism and travel, and so on.

As the number of articles related to terrorism has grown, a debate has arisen over how much information is too much. A column in the September 1999 issue of *Scientific American* addressed the idea that publishing some types of information might aid terrorists. "Some people . . . are concerned that allowing full access to the data to anyone who wanted them, anywhere in the world,

might make it easier for would-be terrorists to attack", the author wrote. "The issue of public versus limited availability is going to come up time and again as we try to get used to the Internet and its capacity to make anything posted on it instantly accessible worldwide", she concluded.

In November 1999 the *American Journal of Public Health (AJPH)* published a piece arguing that the United States has spent a lot of money on preemptive biopreparedness programs rather than developing immunization programs, which would address immediate public-health concerns. "Perhaps public health would be better served by preventing the millions of illnesses and thousands of deaths from food-borne infections that occur annually", the authors wrote. Hence the title of the article: "Bioterrorism: Public Health in Reverse?"

In the November 2001 issue of *AJPH*, a commentary by Editor-in-Chief Mary E Northridge included reference to the September 11 attacks. In the December issue, a letter addressed biopreparedness and public health. The acceptance date listed for the letter was 17 August 2001.

Another timely coincidence was the publication of an article titled "The Growing Threat of Biological Weapons" in the January-February 2001 issue of *American Scientist*. The article, which dealt prominently with anthrax as a biowarfare agent, warned that "the terrorist threat is very real and it's about to get worse."

Uncanny coincidences aside, in the weeks and months after 11 September editors of scientific periodicals worked hard and successfully to provide timely content related to terrorism. Use of their publications' Web sites aided in giving readers new information and supplying ready access to previously published articles. Mechanisms for rapid publication also served well. Science editors' recent experience in presenting timely content related to terrorism may well facilitate more rapid and effective provision of scientific information on a variety of topics. And it may be worthwhile to continue seeing how science editors address challenges posed by publication on terrorism. Unfortunately, as Roxanne Young of *JAMA* has observed, terrorism is a timeless topic, one that scientists and editors will grapple with for years to come. 