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# Mass Media and Environmental Risk: Seven Principles\*

Peter M. Sandman\*\*

*1. The amount of coverage accorded an environmental risk topic is unrelated to the seriousness of the risk in health terms. Instead, it relies on traditional journalistic criteria like timeliness and human interest.*

The observation that journalism focuses more on big controversies than on big health risks is neither novel nor debatable. There is a niche for public-service features about smoking, seat belts or radon, but in the absence of a news peg these perennials are bound to get less attention than a hot local Superfund fight. Journalists are in the news business, not the education business or the health protection business.

For example, we did a content analysis of network evening news coverage from January 1984 to February 1986.<sup>1</sup> Using the Vanderbilt University Television News Index and Abstracts rather than the coverage itself, we identified 564 environmental risk stories, 1.7% of the total air time in the evening newscasts. During the same period,

\* Most ideas in this article are grounded in research conducted at Rutgers University between 1986 and 1992, when I was director of the Environmental Communication Research Program (now the Center for Environmental Communication [CEC]). Most was funded by the Hazardous Substance Management Research Center at the New Jersey Institute of Technology, and carried out in collaboration with Kandice L. Salomone, Michael R. Greenberg, David B. Sachsman and other colleagues.

For a longer list of articles, write me at 54 Gray Cliff Road, Newton Centre, MA 02159. Or get the Publications List (and order form) of the Center for Environmental Communication, P.O. Box 231, Cook College, Rutgers University, New Brunswick, NJ 08903; (908) 932-8795.

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<sup>1</sup> Michael R. Greenberg, David B. Sachsman, Peter M. Sandman & Kandice L. Salomone, *Network Evening News Coverage of Environmental Risk*, 9 *Risk Anal.* 119 (1989) and Michael R. Greenberg, David B. Sachsman, Peter M. Sandman & Kandice L. Salomone, *Risk, Drama and Geography in Coverage of Environmental Risk by Network TV*, *Journalism Quarterly*, Sum. 1989, at 267.

networks ran only 57 stories about tobacco and an astounding 482 stories about airplane safety and accidents. Based on number of fatalities, there should be 26.5 minutes of tobacco coverage for every second of airplane accident coverage. Instead, the ratio was 7:1 in the wrong direction. Acute environmental accidents like Bhopal received plentiful coverage (and deserved it); chronic environmental problems like asbestos contamination received much less, typically requiring an “acute” news peg (new and timely information) on which to base the story. Geographical proximity was also a major factor. During the study period, Alabama, Louisiana, Mississippi and West Virginia had about the same number of oil spills as California, Massachusetts, New York and Texas. Yet almost three times as many spill stories were reported from the latter states (where the networks have bureaus and many viewers) than from the former (where they do not).

Seriousness (or “consequence”) is only one of a host of traditional journalistic criteria for newsworthiness. Most others — timeliness, proximity, prominence, human interest, drama, visual appeal, etc. — make a big controversy intrinsically newsworthy even if it is not a serious health threat.

I have used “hazard” and “outrage” to refer, respectively, to technical and nontechnical (a composite of such factors as control, fairness, familiarity, trust, dread and responsiveness) seriousness of a risk. In these terms, the mass media are in the outrage business: They don’t create it, as my clients sometimes suppose, but they amplify it.

*2. Within individual risk stories, most of the coverage isn’t about the risk. It is about blame, fear, anger and other nontechnical issues — about “outrage,” not “hazard.”*

In 1985, we asked the editors of New Jersey’s 26 daily newspapers to send us their best environmental risk news stories from the previous year. The 248 stories that were submitted were content analyzed for risk information.<sup>2</sup> Fully 68% of the paragraphs had no risk

<sup>2</sup> Peter M. Sandman, David B. Sachsman, Michael R. Greenberg & Michael Gochfeld, *Environmental Risk and the Press*, 6-98 (1987).

information at all. Another 15% dealt with whether the potentially risky substance was present or absent, and only 17% of the paragraphs dealt with whether the substance was risky or not. A panel of one environmental reporter, one activist, one industry spokesperson and one technical expert was convened to assess the stories more subjectively. The panelists — who disagreed about most things — emphatically agreed that environmental risk information was scanty in these stories. Technical content was especially lacking. What risk information was provided came mostly in the form of opinions, not evidence.

As part of the same study, we asked reporters to specify which information they would need most urgently in covering an environmental risk emergency. Most reporters said they would want only the most basic risk information on deadline; technical details would be used, if at all, for a possible second-day story. What happened, how it happened, who's to blame and what the authorities are doing about it all command more journalistic attention than, say, data on toxicity.

Many factors contribute to the scarcity of technical risk information in risk stories, among them the relative inaccessibility of technical sources and the “technophobia” of many reporters, editors and audiences. It is easier, more comfortable and more productive to cover environmental politics than environmental risk.

*3. When technical information about risk is provided in news stories, it has little if any impact on the audience.*

Getting technical information into the media isn't only difficult; it is also close to useless. In a 1991 study,<sup>3</sup> for example, we wrote news stories about a hypothetical perchloroethylene spill, systematically varying three dimensions of the coverage: (1) The level of outrage (whether neighbors were angry or calm, whether the agency was helpful or contemptuous, etc.); (2) The seriousness of the spill (how much

<sup>3</sup> Branden B. Johnson, Peter M. Sandman & Paul Miller, *Testing the Role of Technical Information in Public Risk Perception*, 3 *Risk* 341(1992) and Peter M. Sandman, Paul M. Miller, Branden B. Johnson & Neil D. Weinstein, *Agency Communication, Community Outrage, and Perception of Risk: Three Simulation Experiments* 13 *Risk Anal.* 585 (1993).

PERC was spilled, how many drinking water wells were nearby, etc.); and (3) The amount of technical information in the story. Experimental subjects were asked to read one story and answer questions about their reactions to the risk. The results: Outrage had a substantial effect on risk perception; hazard (five orders of magnitude worth!) had a modest effect; technical information had no effect at all.

Technical information might be expected to reassure people that the experts are on top of the situation; or it might frighten them with all those polysyllabic words and scary possibilities; best of all, it might reassure them when the hazard was low and frighten them when it was high. Instead, it simply doesn't matter — or, at least, we have yet to find a way to make it matter. In their focus on outrage rather than hazard, journalists are at one with their audience.

*4. Alarming content about risk is more common than reassuring content or intermediate content — except, perhaps, in crisis situations, when the impulse to prevent panic seems to moderate the coverage.*

In the New Jersey content analysis described above, 10% of the paragraphs asserted risk, while only 3% denied risk and 4% adopted an intermediate or mixed position. Only 29% of the articles contained even a single paragraph to the effect that the situation is not risky; by contrast, 57% had at least one paragraph saying it is risky, and 45% had at least one paragraph in the middle.

There are two points to note here: alarming content outweighs reassuring content, and opinionated or extreme content outweighs intermediate or mixed content. (Of course, advocates of the most extreme viewpoints — “Hazardous waste is a CIA plot!” — get crackpot coverage or none at all.) The tilt toward the alarming side is not, I think, sensationalism or substantive bias; it is news judgment. Missing a problem is a much greater journalistic sin than overstating it. The possibility that X is dangerous thus makes the story worth covering. The claim that X is safe is newsworthy only because someone else claims it isn't. And so the dangerous side naturally gets more attention. As for the middle, how do you make an interesting story out of “further research is needed”?

Both tendencies may be considerably smaller when a crisis occurs. In 1979, I worked with more than a dozen other staff members of the President's Commission on the Accident at Three Mile Island on a content analysis of the first week of TMI coverage.<sup>4</sup> The coverage turned out more reassuring than alarming (and arguably more reassuring than it ought to have been, given that behind the scenes some Nuclear Regulatory Commission experts expected a catastrophic hydrogen bubble explosion). Of media passages that were clearly either alarming or reassuring in thrust, 60% were reassuring. If you stick to the technical issues, eliminating passages about inadequate flow of information and general expressions of fearfulness from local citizens, the preponderance of reassuring over alarming statements becomes 73% to 27%.

*5. Exactly what information is alarming or reassuring is very much a matter of opinion. The media audience tends to be alarmed even by information the experts would consider reassuring.*

Content analysis notwithstanding, we had a tough time convincing the Commissioners that TMI was not a case study in media sensationalism. Those Commissioners who favored nuclear power were especially inclined to think the media had screwed up. Selective perception works weirdly on deeply committed people. While most of us tend to suppose media content to be more in tune with our beliefs than it actually is, the people who care most are vulnerable to the opposite distortion; neutral coverage looks biased against them. As I have already suggested, industry is usually right in its perception that media coverage leans toward the alarming side of the balance — but my industry clients think a mildly alarmist story is incredibly alarmist, and even a balanced story strikes them as offbase.

Environmental activists commit the same distortion, with less reason. A recent boomlet in the debunking of environmentalist claims, led by Keith Schneider of The New York Times, has triggered endless

<sup>4</sup> Staff of the President's Commission on the Accident at Three Mile Island, *Report of the Public's Right to Information Task Force* (1979).

teeth-gnashing about an “anti-environmental backlash” among activists and environmental journalists (groups whose values and concerns are surprisingly similar). Of course credulously reassuring news stories are no more admirable than credulously alarming ones — and they are more dangerous. But they are also scarcer.

There is another sense in which industry’s complaints are more supportable than activists’. A balanced story is alarming. Consider the following brief “news story”:

Some experts think that your toothpaste has very likely been contaminated with a deadly poison. Other experts think that the risk that your toothpaste is contaminated is exceedingly low.

Assuming you believe it, this story’s net effect on your mood as you prepare to brush your teeth tomorrow morning will not be neutral! Similarly, most people found news coverage of Three Mile Island frightening — regardless of the content analysis results.

A case study analysis of newspaper coverage of dioxin contamination at an abandoned factory in Newark, New Jersey found that “alarming” and “reassuring” are not really characteristics of the coverage itself; they are characteristics of the interaction between the coverage and the audience<sup>5</sup> Consider these examples:

- Experts considered test sample results showing low levels of contamination to be reassuring; many citizens, however, focus more on the presence of the contaminant than on its concentration and find the same content exceedingly alarming.
- Advice on how people can protect themselves from exposure was experienced by citizens as reassuring, although an expert might justifiably claim that such advice takes a small risk more seriously than it deserves and is thus alarming.

<sup>5</sup> Kandice L. Salomone & Peter M. Sandman, *Newspaper Coverage of the Diamond Shamrock Dioxin Controversy: How Much Content Is Alarming, Reassuring, or Intermediate?* (CEC 1991); Kandice L. Salomone, Billie Jo Hance & Peter M. Sandman, *Toward an Understanding of What Constitutes Reassuring Information During Controversies Over Low-Risk Hazards*, poster presentation, ann. meeting, Soc’y Risk Analysis, San Diego, CA, Dec.1992; and Kandice L. Salomone & Billie Jo Hance, *Communicating Reassuring Information During Environmental Controversies: The Diamond Shamrock Case*, panel presentation, ann. meeting, Intern’l Comm. Assn., Washington, DC, May 1993.

- Information that the authorities knew about a problem for many years before they took action may strike an expert as irrelevant to the size of the risk, but it outrages — and therefore alarms — many nonexperts.

Perhaps most dramatic was the finding that explicit statements by official sources minimizing the risk — “the levels are low,” “it hasn’t spread,” “don’t worry” — were considered offensive, incredible and therefore alarming by citizen readers. Such statements would of course be coded as reassuring in any formal content analysis.

Another study asked students to respond to hypothetical news stories about a chlordane spill.<sup>6</sup> Once again, the amount of technical data in the stories had no effect on resulting risk perceptions. The tone of the stories — predominantly alarming, balanced, or predominantly reassuring — mattered more. Alarming stories yielded alarmed readers. Reassuring stories yielded reassured readers, however, only if they were asked to assume that they lived near the site of the spill and faced practical, immediate decisions such as whether to evacuate. Subjects who were asked to assess pesticide risks in a more generalized way were alarmed by both the alarming and the reassuring story; the intermediate, balanced story produced the most positive responses. Apparently one-sidedly reassuring risk information is likely to strike readers as incredible and therefore produce a boomerang effect — unless they face a decision about what to do, in which case their response may be much less skeptical.

*6. Reporters lean most heavily on official sources. They use more predictably opinionated sources — industry and experts on the “safe” side, activists and citizens on the “risky” side — when they need them.*

Government is the number one source of environmental risk news. This was especially clear in the New Jersey content analysis discussed earlier. When unattributed paragraphs are eliminated, government officials accounted for 57% of all paragraphs in the New Jersey study. Industry spokespersons, by contrast, accounted for 15% of the

<sup>6</sup> Kandice L. Salomone, *News Content and Public Perceptions of Environmental Risk: Does Technical Information Matter after All?* (CEC 1992).



attributed paragraphs; citizens accounted for 7%, advocacy groups for 6% and experts for 6%. On network television, government officials still led, but by much less.<sup>7</sup> They were 29% of the on-air sources. When the networks used only one source for a story, that source was a government official 72% of the time. Two-source stories most typically paired government and industry, citizens and industry, or citizens and government. Activists and experts turned up most often in stories with three or more sources.

You can see the journalistic scavenger hunt at work here. For a minor story, reporters may need only one source; if a competing source has something to say, he or she can create a follow-up story another day. But for a more significant story, reporters typically start with a government official, the swing vote. If the government says “dangerous,” they look for an industry source or possibly an expert to say “safe.” If the government says “safe,” they look for a citizen or possibly an activist to say “dangerous.”

This scavenger hunt takes place whether the “truth” is alarming, reassuring, or somewhere in the middle. In the epistemology of routine journalism, there is no truth (or at least no way to determine truth); there are only conflicting claims, to be covered as fairly as possible, thus tossing the hot potato of truth into the lap of the audience.

Different types of sources reliably provide reporters with different types of content. In the New Jersey study, for example, experts and individual citizens were likeliest to address the riskiness issue; industry and government tended to talk about other things. Not surprisingly, activist groups were the likeliest to assert risk; they did so 33 times as often as they denied it. Industry sources, on the other extreme, denied risk 5 times as often as they asserted it. A similar pattern emerged when we asked source “types” to comment on coverage of four case studies — dioxin in Times Beach, Missouri; methyl isocyanate in Institute, West Virginia; dioxin in Newark, New Jersey; and radon in Clinton,

<sup>7</sup> Michael R. Greenberg, Peter M. Sandman, David B. Sachsman & Kandice L. Salomone, *Network Television News Coverage of Environmental Risks*, Environment, Mar. 1989, at 16-20, 40-44.

New Jersey.<sup>8</sup> Panels of journalists, activists, industry spokespersons, government officials and technical experts assessed the coverage, story by story. All five types of panelists judged a story to be higher quality if they thought it was more accurate. All except the government sources thought it was higher quality if they thought it had more risk information. But they differed on the relationship between quality and the alarm-reassurance dimension. The industry, government and expert panelists all gave higher quality ratings to the stories they considered less alarming; journalists, on the other hand, rated alarming stories as higher quality than calming ones. Surprisingly, the activist panelists were unaffected by this dimension in their assessment of quality. On the whole, the findings suggested that there is at last as deep a desire among industry, government and expert news sources to support the status quo as there is among journalists and activists to undermine it.

*7. Although the competition for journalistic attention is tougher for sources seeking to reassure than for those seeking to alarm, coverage depends even more on a different distinction: skillful sources versus inept ones.*

In a variety of ways, most journalists are naturally more allied with their alarming sources than their reassuring ones. This is not mostly because reporters are anti-establishment activists in disguise. It is more because reporters are interested in their careers, and a scary story is intrinsically more interesting, more important, “better” by journalistic standards than a calming one.

The main effect of the “natural antagonism” between journalists and reassuring sources is on the source side of the dialogue. Industry spokespersons and technical experts stereotype journalists far more negatively than vice versa. They anticipate much worse treatment than they get; imagine mistreatment when it didn’t happen and provoke mistreatment by acting defensive or demanding. Ultimately, this may be the biggest reason why the reassuring side of the risk debate gets

<sup>8</sup> Kandice L. Salomone, Michael R. Greenberg, Peter M. Sandman & David B. Sachsman, *A Question of Quality: How Journalists and News Sources Evaluate Coverage of Environmental Risk*, 40 J. Comm. 117 (1990).

inadequate coverage — even bigger than the journalist’s natural affinity for bad news: The sources of alarming information tend to be cooperative and canny, while the sources of reassuring information are mostly lousy sources. They can, and should, learn to do better.

In general, four biases prevail, both in media risk coverage and in readers’ and viewers’ responses: (1) alarm over reassurance, (2) extremes over the middle, (3) opinions over data, and (4) outrage over hazard.

There isn’t much a source can do to adapt to the first bias. The other three, however, can be productively deferred to.

Avoid intermediate or mixed positions. Stake out a stance that is clearly pro or con. If you must peddle the middle, work hard to make it interesting.

Focus more on opinions than data, more on anecdotes than tables and charts, more on concrete nouns and active verbs than jargon and abstractions. When you have a piece of data worth showcasing — which happens much less often than you think — use every strategy to simplify it, personalize it and put it into human context.

Above all, focus on outrage. The most impactful statements an environmental activist can make aim at increasing, focusing and mobilizing outrage. These statements are likeliest to get in and likeliest to affect the audience. Conversely, the most impactful statements an industry spokesperson can make to the media are aimed at reducing outrage: acknowledging problems, apologizing for misbehaviors, offering to share control, explaining what the source is doing and what the audience can do to mitigate the risk, demonstrating accountability in lieu of trust, etc. Sources convinced that a risk is huge usually know how to work the outrage. In contrast, sources convinced that it is trivial usually mistakenly believe that the key task is to explain the data. They — and if they are right about the risk, the rest of us — are paying heavily for this mistake.

