

**FACT**  
• OR •  
**FAUX**



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## The Great Earthquake That Wasn't

by Douglas Allchin

**ABSTRACT.** Fact-or-Faux addresses misinformation and science media literacy. Here, I examine the case of an entrepreneur who predicted a devastating earthquake in New Madrid, Missouri, a repeat of the largest earthquake in U.S. history. On the designated day, schools were closed, the National Guard was nearby, and 200 news reporters were ready. But nothing happened. How did the misinformation spiral out of control?

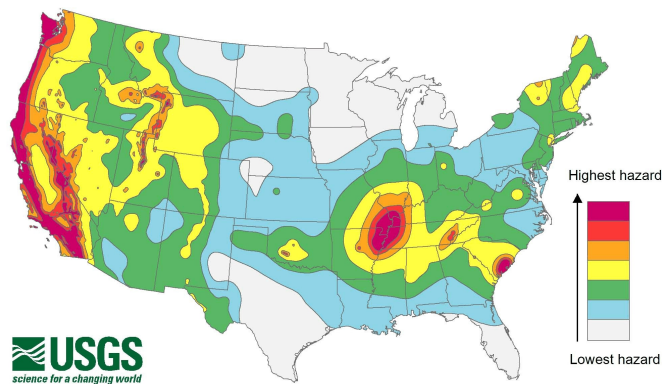
**Keywords:** misinformation, New Madrid, earthquake, expertise, credentials, consensus

The seismometer sits in the local historical museum in a small town in southeast Missouri, part of an exhibit that tells the story of one of the strongest earthquakes in U.S. history: the New Madrid Earthquake of 1811-1812. Over two months, there were three major earthquakes that reportedly sent the Mississippi River flowing backwards, and rattled towers hundreds of miles away. Minor earthquakes—most too small to be noticed—still occur, along a fault line where risks of major seismic activity rival those of California. The exhibit's seismometer is a modest, but ever-present reminder of the local geology (see Figure 2).

So, what would be your response if someone predicted another major earthquake, on a day when there would be excess tidal loading, caused by lunar and solar gravitational alignments? Fear, caution, amusement? Leave town on the day, or stay to sell t-shirts or "quakeburgers"? What would inform your decisions on this occasion?

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Figure 2. The hazard level of the New Madrid seismic zone rivals that of California (USGS).



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Here is a game-like activity for students to test their skill at judging fact from faux. They record their impressions as the story unfolds, then review their own decisions in retrospect and discuss what media reports were the most important in conveying the trustworthy scientific information, and why.

### *The Classroom Scenario*

The scene is as described above. Students are to imagine themselves as a resident of New Madrid (pronounced MAD-rid) or a nearby community. They may choose to be a parent, a school principal, a mayor, a business owner, or themselves. The news items appear chronologically below. The task at each stage is to take note of what you would do, based on which bits of information about this possibly devastating earthquake. Would you stock water, food and first aid supplies in your cellar? Would you take out expensive earthquake insurance? Would you dismiss it all as a joke? Would you cancel school on the day? Would you call out the National Guard? Would you plan a “Shake, Rattle and Roll” party on Main Street? Or would you just wait for (or seek out) more information? And, if so, whom would you trust?

The media messages are presented in stepwise fashion, so that as an imagined participant, we can experience the episode in context, unfolding gradually. So: note, too, if your decisions change as the available information grows. (Same discussion for afterwards.)

### *The Unfolding News*

> November, 1989. The *Memphis Commercial Appeal* reports on a lecture by Iben Browning, who has analyzed the geological conditions of the famous 1811-1812 earthquakes and finds that similar conditions will occur again next year, on December 3, 1990. Browning is a business consultant on meteorological and geological issues and publishes a newsletter on these topics. His reasoning is based on modeling the geological forces of excess tidal loading which will increase the likelihood of an earthquake at a similar scale. He repeats his projection a few weeks later in an invited speech at the Missouri Governor’s Conference on Agriculture.  
[What is your response at this stage?]

> As a measure of his credibility, Dr. Browning claims to have correctly projected the earthquake in Loma Prieta, California, earlier this year, and also the devastating eruption of the Mount St. Helens volcano in Washington in 1980.

[Does this information alter your view?]

> June 26, 1990. Dr. Browning has continued his lecture circuit and now the *St. Louis Post Dispatch* has begun to cover the story. Today, it publishes a map of the seven global locations implicated in Browning's projections.

> July 21. A *Post-Dispatch* headline reports, "Quake Prediction Taken Seriously." The article cites David Stewart, Director of the Earthquake Research Center at Southeast Missouri State University, who has vouched for Browning's expertise to his colleagues. In a separate comment he said, "Here's a man who verifiably has hit several home runs, and he's up to bat ... you can't ignore the batting record."

[status update?]

> August 5. The Office of Emergency Management in Springfield-Greene County, Missouri, notes that Browning has "been correct on so many things. I think that everybody ought to take him seriously."

> September 9. The Superintendent of the New Madrid Country Central School District announces that schools will be closed on December 3, still months away. "The problem with schools," he says, "is it's not what's true so much as it is what's perceived to be true."

> September 26. Southeast Missouri experiences an earthquake: enough to rattle dishware—and a sense of complacency. About 200 minor quakes occur annually in the region, most too small to notice. Various government agencies have been arguing for years that residents should be prepared for any major quake, although the timing cannot be predicted.

> September 26. Full-page ads appear in the local newspapers selling a 1.5-hour videotape interview of Iben Browning. They sell for \$99 each (or \$39 for a 3-minute excerpt) (Figure 3).

Figure 3. Advertisement for a videotape by Iben Browning, predicting the earthquake-that-wasn't in 1990.

**A Major Earthquake**  
has been projected by Dr. Iben Browning to strike  
this area on December 3, 1990...  
Should you and your family prepare...now?  
This exclusive video interview with Dr. Browning can help you decide.

**DR.** Iben Browning is a remarkable man. His track record of documented projections related to geological activities is truly incredible. These include the eruption of Mount St. Helens, the devastating Nevado del Ruiz volcano in Colombia and, most recently, the 1989 earthquake in San Francisco.

His accuracy is of great importance to you personally. Dr. Browning is now projecting a major earthquake on the New Madrid fault within 24 hours of December 3, 1990.

Or, if you prefer, you may purchase the complete 1.5-hour interview for \$99. Thousands have been sold at that price. Either video comes with a report containing geology, a list of other important "trigger" dates between now and 1992, and specific ways you can prepare for a major earthquake.

Should you take Dr. Browning's projection seriously? Should you and your family take steps now to prepare? Order your own copy today and decide for yourself!

To charge your video on MasterCard or Visa, call 1-800-528-0559. Or, return the coupon below with your check made payable to Research Publications.

Because much of this material is time-dated, this offer ends November 1, 1990. Don't miss out on this rare opportunity to secure your personal copy of this important video. Act Today!

**Here's How to Order**

To order your copy of the videotape interview with Dr. Iben Browning, send in this coupon which contains a card which contains additional details on his projections as well as information on how to prepare for a major earthquake.

**Call 1-800-528-0559**  
(Openness on Any Day - 9am-5pm CST. Please see page 4 for our hours)

**You have two options:**

1. Purchase the 30-minute video with Dr. Browning which fully describes the December 3, 1990 earthquake. 20-Minute Video \$49.95.
2. Purchase the complete 1.5-hour interview in addition to that on the earthquake. A complete video report of important information about the New Madrid fault is also included. \$99.00.

Or, mail to: Research Publications  
P.O. Box 9905, Phoenix, AZ 85067 107

- > September 29. The Director of the Missouri Department of Natural Resources releases a statement that, contrary to Browning, “the probability of a significant quake occurring on Dec. 3 is not greater than any other day.”
- > Early-October. Browning is interviewed on ABC’s *Good Morning America*. Other TV talk shows soon feature discussion of a projected earthquake in New Madrid.
- > October 18. The United States Geological Survey (USGS) responds to public concerns and issues a report that Browning’s geological model is scientifically unsound, and that his “predictions” of earlier events had been so vague as to be meaningless, and thus were not validated.
- > October 21. Stewart defends Browning. Meanwhile, William Allen, science reporter for the *Post-Dispatch* has done further digging. He now reports that 15 years earlier Stewart lost his previous position at the University of North Carolina for inviting a psychic to speak on earthquake predictions and endorsing her approach as “valid and valuable.”
- > Mid-November. The National Earthquake Information Service (part of the USGS) is fielding 100 calls a day related to the prediction. The St. Louis County emergency management office has been similarly swamped with inquiries.
- > Late November. Country music singer Lou Hobbs releases his song, “Living on the New Madrid Fault Line”: “Lately I feel a little nervous about my section of the land of the free, / living on the New Madrid fault line, something’s shakin’, Lord, I hope it’s just me.” Over the next few days he is invited to sing it on *Good Morning America* and dozens of other television and radio shows. (You can hear it on YouTube: <https://www.youtube.com/watch?v=uzM8SXqpsks> — Figure 4).

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Figure 4. Lou Hobbs singing “Living on the New Madrid Fault Line” (YouTube).



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- > December 3, 1990. Earthquake Day! New Madrid. Some 200 reporters from around the world, and their vans with satellite antennae all parked in a cluster, are ready to report events as they happen (see opening image). (The town’s population is a mere 3,000.) Schools are closed here,

and elsewhere—although the girl’s volleyball game is going ahead, as scheduled. Residents have invested \$22 million in earthquake insurance. The National Guard is continuing a sample “earthquake preparedness” drill nearby. In town, you can buy your “I survived the earthquake” t-shirt, or a hamburger with a torn faultline across it. People are gathered, chatting, and waiting. And waiting and partying. No earthquake. The experts at the USGS were right, it turns out. All that hype for nothing.

Ultimately, all the possible responses mentioned at the outset did occur. But, mostly, there was a deficit in respecting the scientific consensus. For a fuller description of the event, and the view 25 years later, see the online account by Thomas Grounley (2015) or the USGS post-event analysis (Spence, et al., 1993).

### *Debriefing*

Merely encountering the eventual outcome and comparing it with one’s choices along the way is a lesson in itself. However, deeper learning can occur if students can share their judgments and analyze the media messages more fully, now with the verdict of hindsight. Not every class will reach the same conclusions, but here is a sketch of the possible take-home lessons:

- Iben Browning was not an *expert*. He did not have appropriate *credentials*. His claims were *presented outside the scientific literature*. Thus, they were not even worthy of being entertained by an ordinary (non-expert) citizen . (See **FF**, Zemplén).
- Browning’s claims may have seemed plausible, appealing to the cause and effect of physical forces. But *plausibility is not enough* (**FF**, Osborne). Significant claims, especially incredible ones, need to be vetted by other experts, and a consensus developed. Nor should one be cowed by jargon of complex concepts.
- David Stewart was consulted, in a journalistic tradition, as an “independent source.” But science demands more. Stewart’s own expertise mattered, too, and it had not been fully checked at first. Even when two isolated scientific experts may agree, however, *the appropriate benchmark is the consensus of the relevant experts*—as reflected, here, in the views of the USGS.
- Browning’s earlier predictions—a factor in his alleged credibility—were unfounded. Yet at first, they were reported uncritically. Once traced, they proved to be without merit. Failure of *due diligence in checking sources and second-hand claims* can threaten effective science communication (**FF**, Pimentel).
- The coverage on national television was largely on informal “talk” shows. One should recognize that such programs seek to both inform and entertain. One should be wary if the programs have not explicitly fact-checked any extraordinary scientific claim. We should expect them to be *subjected to (and survive) the scrutiny of alternate or critical expert assessment*.
- The USGS’s reluctance to overtly refute Browning’s claims at the very outset may be seen by some as a failure of public science communication. Yet their decision not to

engage with pseudoscience was itself a potent indicator. When they did finally address the issue, their *expert consensus* (from a respected scientific institution, with a long and broad track record) should have been definitive for public policy (FF, Zucker).

- The Precautionary Principle can be an effective policy tool in cases of uncertainty. However, in this case the *scientific consensus* was clear. Calling out the National Guard and closing schools was ill informed public policy, and may have contributed to fostering undue public anxiety and needless expense. Public agencies that distributed standard earthquake preparedness kits without disclaimers about Browning's illegitimate prediction implicitly gave credence to them, validating any unschooled sense of impending danger.
- *Fear* was a significant factor. The claims played on *an inflammatory emotion*. When such emotions swell, our discernment can falter. So one's demand for evidence should (counterintuitively, perhaps) be on high alert. One may well want to escalate the normal standards for justifying alarming conclusions.
- The *commercial dimension* might have been another clue. Sensationalism sells. But why should a citizen pay for a video on a matter of public safety? This was another indication that the messaging was occurring *outside the realm of professional experts*.
- The level of community concern was sustained largely by *hearsay*. It matters what people share with others. Individuals need to take personal responsibility in what they pass along.

In summary, for those with skills in interpreting science and the media, there were plentiful clues that Browning's prediction was spurious. That might underscore the importance of science media literacy? In public discourse, a "free market" approach to scientific claims ("let the Reader decide") needs to be balanced with a sense of regulating adverse and irresponsible misinformation, contrary to the public interest.

In addition, miscommunication in this episode thrived on hearsay. Everyone needs to be careful about what they share with others—and that includes journalists and TV personalities. Separating fact from faux is ultimately a joint endeavor.

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