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Conevery Bolton Valencius, *The Lost History of the New Madrid Earthquakes* (Chicago, 2013). ISBN: 9780226053899

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Introduction by Jacob Darwin Hamblin, Oregon State University

To those living in the Eastern United States in 1811 and 1812, the earthquakes in New Madrid (in what is now Missouri) would have been difficult to forget. Convulsions were so strong that parts of the Mississippi River reversed course. The famous frontiersman, Davy Crockett, wrote about these and later quakes, and the cracks they left behind, as something truly alarming. Cherokees saw signs of prophecy, and Creeks discerned a spiritual message to resist Americans taking over their lands. Natural philosophers rethought geological ideas. Given their physical magnitude and social ramifications, the New Madrid earthquakes bore all the markers of a natural catastrophe of great historical and scientific significance.

In time, the New Madrid earthquakes passed out of memory, and the accounts of them lost their credibility. The details were dismissed as fantastical, and Indian accounts were deemed unreliable sources of scientific evidence. So that terrible moment, described by so many at the time as divine Providence, was lost. Yet nearly two centuries later, in trying to understand how the event fit into existing thought on plate tectonics (why would there be a level 7 or 8 earthquake in the middle of a tectonic plate?), scientists began paying attention again. Suddenly the same documents that were rejected as useless in years past, especially accounts by Indians, became crucial for understanding science.

Why was this moment forgotten? Why was that history lost, and what does it mean to have "found" it again? In ***The Lost History of the New Madrid Earthquakes*****,** Conevery Bolton Valencius shows how early Americans created knowledge of the world around them—they discussed causation, they moved from one place to another, they renewed their faith, and they made political choices. As a historian, she perceives environmental and social upheaval where others have seen an anomalous and historically inconsequential moment. She also is intrigued by how scientists today use data from two centuries ago. Long dismissed as untrustworthy evidence, early nineteenth-century accounts have become crucial to understanding not only history, but also the geology of the middle of the continent.

Our first commentator is **B. R. Cohen,** an Associate Professor at Lafayette College. His book *Notes from the Ground* was the subject of a previous H-Environment roundtable. Like Valencius, Cohen blends the history of science with environmental history. He shows how farmers used their experiential knowledge to understand the land, incorporating scientific ideas only when they became "culturally credible." He points out that the embrace of scientific findings had less to do with deference toward scientists and more to do with concepts of citizenship and work ethic.[1]

[1] Benjamin R. Cohen, *Notes from the Ground: Science, Soil, and Society in the American Countryside* (New Haven: Yale University Press, 2009).

Anne Hyde is Professor of History at Colorado College. Her book, *Empire, Nations, and Families: A New History of the North American West, 1800-1860,* won the 2012 Bancroft Prize. It reveals the network of multi-ethnic family associations that were the foundation of commerce in the American West, linking Native Americans to European-Americans. Rather than accept the notion of a virgin wilderness settled by Anglo settlers after the Louisiana Purchase, or of Native Americans pushed back by whites, she reveals a complex web of relationships, including family connections across national and ethnic lines that allowed business and diplomacy to flourish.[2]

Peter C. Mancall is the Andrew W. Mellon Professor of the Humanities at the University of Southern California, and he also is the Linda and Harlan Martens Director of the USC-Huntington Early Modern Studies Institute. Or as he observes in this roundtable, he writes from "the edge of the ring of fire." His work has described early America from the perspectives of its explorers, including Henry Hudson and Hakluyt. He also has written a book about the role of alcohol among Native Americans, in which he tackles the historical memory of the "drunken Indian."[3]

Our final commentator, **Matthew Mulcahy**, is Professor of History at Loyola University Maryland. His work dovetails well with Valencius's, as he has written extensively about historical natural disasters. His book, *Hurricanes and Society in the British Greater Caribbean, 1624-1783*, reveals how peoples completely unfamiliar with hurricanes interpreted them and recovered from them. Focusing on British colonists and the African slaves they brought with them, Mulcahy sees the storms as crucial in the process of "encounter and accommodation," distinguishing the physical environment of new colonies and raising questions about the directions of future development.[4]

Before turning to the first set of comments, I would like to pause here and thank all the roundtable participants for taking part. In addition, I would like to remind readers that as an open-access forum, *H-Environment Roundtable Reviews* is available to scholars and non-scholars alike, around the world, free of charge. Please circulate.

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[2] Anne Hyde, *Empire, Nations, and Families: A History of the North American West, 1800-1860* (New York: Harper-Collins, 2012)

[3] Peter C. Mancall, *Deadly Medicine: Indians and Alcohol in Early America* (Ithaca: Cornell University Press, 1995).

[4] Matthew Mulcahy, *Hurricanes and Society in the British Greater Caribbean, 1624-1783* (Baltimore: Johns Hopkins University Press, 2006)

Comments by B. R. Cohen, Lafayette College

"Undone Earthquakes"

One fun thing about reading a book about a historical earthquake is that when you're at the coffee shop reading it and people ask you what you're reading, you generally get an interesting reaction. They ask, "What's it about?," and I say, "An earthquake that nobody remembers." Then they say, "So why would you want to read about it? It must not be very important." They're thinking along the tree falls-nobody hears-who cares line of reasoning, so I say, "I think the point is to find out why nobody remembers." That gets you one of those *Go on* looks, and we're off. I say the point must also be to ask what counts as important knowledge, to question who gets to decide what memories last, to find out how what we know about the earth is always part of what we know about history, to retrace and present the world that shook the middle Mississippi Valley in 1811 and 1812. Then their medium soy cappuccino is up and they admit that it sounds interesting. Plus the barista made a nice little fern-leaf pattern there in the foam.

Another fun thing about reading a book about a historical earthquake is the story itself. Maybe I should've lead with that. Although my own work has been grounded in the science and nature of the early American Republic, I too had little knowledge of the New Madrid earthquakes or the story of its impact and legacy. All to this book's credit, full of spirited writing and enthusiasm for the very process of research and exploration, I do now. Actually, I know a good deal about a number of things I hadn't thought much about before.

Such as, to begin at the beginning: there were earthquakes centered on New Madrid, Missouri, from December 1811 through February 1812. Shocks were felt for some distances, extending to the East coast to ring bells in towns on the Atlantic. Aftershocks, continued tremors, followed for years. In the decades later, and then the century to follow, knowledge and memory of the New Madrid earthquakes slipped away. They eroded. They were submerged beneath newer layers of living and remembering.

Beyond the perfunctory outline, there is this too: Native American history, middle Mississippi Valley terrain, settlement patterns and disputed territories of the then-hinterlands beyond New Madrid, river navigation and its technologies, a different and for the first time interesting angle on the War of 1812, the history of local knowledge, communication and reporting practices, folkways of knowledge, vernacular science, earth science, the foundations of seismology, that earthquakes can change river flow (even if briefly), topography, and regional identity, and that it can all fade away like so many Sunday mornings.

Fading implies that something was there that could, well, fade in public memory. Valencius's tack is to respect that trajectory from presence to absence and wonder,

what did people know and understand of the earthquake before the fade, how did they know it, and why did they forget it? The last question is less important (and for me as a reader, less interesting) than the first two, because really, answering the first couple gives you the answer to the third. Thus chapters 2 and 3 address Native Indian knowledge about the experience, the ways the earth's trembling and rippling fit into concepts of belonging and place in the midst of a long century of displacement and removal. The chapters reveal, among others, that "Seismic forces are a forgotten important added pressure on top of population disparities, overhunted environments, asymmetrical military force, and a tragically uneven burden of disease, forces pushing Indians out of lands that Americans wanted" (59). Another chapter (4) discusses the ways settlers built embodied knowledge, feeling earthquakes as part of their health and the intimate uniformity of body and soul. As Valencius's earlier work has also shown, even that non-distinguished body-spirit-land conglomeration is a kind of knowledge, as it were, that has also largely faded from public dominance today. But bodies in "early nineteenth-century science," Valencius reminds us, "served simultaneously as instrument and metaphor" (172). Then a later chapter canvasses the well-framed zeal to "Measure! Quantify!" that developed into the twentieth century. It led a new scientific order beyond observation and traditions of tinkering to develop instruments for tracking weather, noise, and other earthly disruptions (like volcanoes) and astronomical ones (like comets) and, oh, by now I'm just repeating chapter sub-headings.[***]

The point is, by the time we—we the reader, we moderns, we amidst contemporary scientific culture—get to the later chapters on modern seismology, tectonic plates, and a knowledge of earthquakes as coming from the subduction of one such plate under another along a fault line, we have come to understand the global context of earth movement in a particular way. It isn't that a tectonic understanding of earth fractures is wrong. It is correct. It's that public knowledge of modern seismology is defined along dramatic fault lines. That's an accomplishment that forces me into not-clever word play because that historical accomplishment has created its own epistemic fault line separating current awareness of earthquakes and the historical meaning of the New Madrid earthquakes.

I was thus happy that as I was reading and annotating the book one of those coffee-shop inquirers was a campus colleague, a geotechnical engineer, who knew immediately what I was reading about, sort of. "Oh, New Madrid seismicity is all the rage these last few decades," he told me, echoing the scientists Valencius discusses in the later chapters. He had heard of but didn't know much about the earthquakes

[***] And I can't believe I made it this far in my response without noting the beauty of the book's footnotes. Not only does Valencius achieve great typographical variety with all the footnote markers—from humdrum asterisks to crosses and double crosses and sets of double crosses—but she offers an additional voice, like a Greek chorus, commenting on the drama of the text. Plus, a chorus of actual music references (cf. pp. 95, 141, 212, 232, and 269, e.g.). The evident joy in researching and writing this book suffuses the text in every chapter, but it comes to life most completely in the footnotes.

of 1811-1812, but he knew that intra-continental and east coast earthquakes were of a different sort. The density of rock on the east coast means that ripples extend farther and, for lack of a better phrase, perhaps more ripply than shaky.[‡‡] "I wouldn't take that too far," he said (I may have been taking it too far, the ripples versus shakes), "but it does make you wonder how we come to understand these things, you know, now that we know."

This brought us into conversation about research programs and historical developments, the history of science, the institution of experiments, and—highly caffeinated by now were we—the very structure of geological reality. Major fault line earthquakes are well understood as part of the public conscious. It's fun to use them as an example to explain to students that this was not always the case, this understanding. Certainly, making the point that we know things now that we didn't know before is nothing to start a Twitter account about. But plate tectonics is an easier and more ready-at-hand example. Plate tectonics had to be discovered; theories of geological movement had to be invented; evidence had to be culled. That process may have erased the ones before it, science erasing its own history just as earthquakes erase settlements.

Back, then, to the beginning. The hook for the book, down to the title itself, is the theme of loss. New Madrid is not part of the collective memory of United States history. It is a victim of loss, absence, erosion, burial. These are geological, cultural, and historical terms all at once.

This is where coffee shop happenstance helps out. As it were, the other stack of reading at my table (though it elicited fewer questions) was a set of articles in a recent wave of research in science studies about such things, about the kinds of things we don't know or don't even study. These are studies of absence. Some sociologists call it undone science; historians work in a related vein on agnotology. Science studies scholar Scott Frickel (2014), writing recently about the subject, casts the approaches in the three categories of "manufacturing uncertainty," studying secrecy, and undone science, this last of which he summarizes as "efforts by social movement and other civil society actors to identify and draw attention to areas of research that are ignored by the scientific and regulatory communities" (Frickel, 2014, 88; also cf. Hess, 2009). Sometimes social scientists study the science around things that we don't know (certain disease categories, issues of environmental justice, e.g.); sometimes we study things that used to be there but disappeared.

[‡‡] True to Valencius's keen cultural awareness that any mention of an earthquake forces the mentioner to narrate their own memory of being in an earthquake, I was immediately forced, with my geotechnical colleague, into a ten minute aside about the earthquake of August 2011 centered in Virginia that, at the time, I thought was over-zealous construction on our campus. My wife, by chance off work and at home that day, ran outside with the neighbor to chew out the orange-vested utility guys down the block who, they believed, must have just busted up a water main with jack-hammering. And didn't they know children were napping??

Rather than asking how scientists produce knowledge, scholars looking at absence examine why scientists and other knowledge producers ask some questions but not others. They ask why some fields of work are valued while others are not or why some people have their health concerns met with further study while others do not. Robert Proctor and Londa Schiebinger's (2008) work in the history of science asks the same about historical cases.†

Valencius did not write of the New Madrid earthquakes for the purpose of building up this new body of work on absence. She asked, rather, "how do we know what we know" about the earthquakes? (12 and 333) I bring up the topic because her book, nonetheless, is an extraordinary example of the historical process by which all three of Frickel's sub-categories come to be. A 400+ page book full of well-mined and rigorously pursued evidence is a tour-de-force of studying things that were there but disappeared. It had me thinking that all historical work is about the study of absence. We may have the facts on any number of historical activities, but our continued quest as scholars is to find out what else there is to it, or how else we could see it, or where else we could be looking. It also had me thinking about what we are to do with the recovery of lost knowledge.

The combination of my own conversations about the book with scientists, other colleagues, and eyebrow-ringed baristas all leads me to the fabled critique and question portion of the roundtable review essay. Namely, this: What is the public import of this story? Where, ultimately, does the author want to land? The flip side to a tour-de-force is that readers may be bowled over with so many details, such a long time span, so wide a range of considerations. By the later chapters there is a sense of laundry listing, of checking off topics as we pass by instead of zeroing in on them. This is taxing. The clear verve in the author's voice (cf. footnotes) helps out, but the book still presents a challenge to consider where this is all going. Is the import of the narrative a diffraction of stories fanning outward or a lens focusing in?

Of the span of points in the work, I was drawn to the themes of loss, erosion, and concealment in part because those themes resonate with my prior thoughts on knowledge production and absence. On the one hand, then, I want to suggest and prod the author on helping readers (me) confirm the intended payout amidst so many kinds of exploration in the book. This is that reviewer-type comment about an

† Now I'm just surfing around in the "insert" "symbols" section of my word processor. I don't actually have a foot-notable point, except to say that there's a difference between the intentional production of ignorance—*manufacturing* uncertainty, as with the tobacco industry, for example, or perhaps climate change deniers—and the more subtle and common form of absence that comes from periods of inattention, lack of awareness of a problem to be studied, or structural constraints that lead researchers in one direction and, thus, away from a different direction, assuming without counter-checking that the direction they head is the most valid one. (Also, if you didn't catch it yet, I'm fishing for a compliment for not once making a David Foster Wallace reference in these footnotes.)

author doing too much. Yet on the other hand, I'm wondering how the erosion and concealment metaphors might have been played out even more. And that's a comment about not doing enough.

I don't actually mean, unfairly, to want it both ways. I mean to suggest that the public import of the New Madrid earthquakes must be many, but no matter what, one part of that "many" would seem to help current readers see the scientific enterprise and the history of the environment as part of a constant struggle about revealing, concealing, loss, and erosion. That earthquakes come from below us, from those hidden fractures beneath the earth's surface, only furthers the view that we are dealing with a tension between hidden and apparent. The earthquake, like the volcano, is a geological event that juxtaposes the oft-hidden eternal daily activity of the living earth with the always-visible cultural activities we practice on its surface. Because who doesn't love to wonder at Old Faithful.

I suppose part of the renaissance (or development) of environmental and scientific histories of the ocean these past years must also be predicated on that tension between the things beneath and out of sight and those things we encounter in our daily experiences. On that framing, this hidden/visible axis isn't all too different from any study of atomic physics, or microscope biology, or telescopic astronomy, all of them indebted to the idea that we can develop tools and instruments to understand things we cannot see with our eyes.

What's wonderful is that the New Madrid story is not *only* about the static existence of a hidden/visible axis, which might be more apt for an astronomical or sub-atomic study, but also the long and active process of hiding and envisioning. That on-going process is indeed environmental, where earthquakes change the direction and topography of landscapes and waterways. It is cultural, where some events come to matter for subsequent lives and some do not. It is then, back to the point, a historiographical process, where scholars choose to uncover previously untold stories. In so doing, they reveal new images of ourselves and our past choices, as in this book's case with the relationship to Indian nations, settlement patterns, vernacular science, hinterland identity, and more.

But for my science colleagues who give the "now we know" response, how do I deploy this book to show that what we know is certain to change, that we could focus on uncovering lost knowledge rather than focus only on the merit of new knowledge, that the historical record is ongoing, not of the past? *The Lost History of the New Madrid Earthquakes* is a long story, told as if we're sitting on a porch beyond faded dusk in rocking chairs with iced tea. I wonder how I would re-tell it a generation or two from now, on the same porch, when we know more about earth science. Or less.

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Comments by Anne Hyde, Colorado College

A World That Couldn't Be

I thought, or maybe hoped, that this book would be a quick read. Many books about earthquakes fall in the futuristic horror genre that moves readers at roller coaster speed. This book, however, operated more deliberately because of the wondrous detours Conevery Bolton Valencius insists we readers take and because of the range of materials and disciplines required to understand those detours. In the end her careful reveal convinces us of the almost unimaginable scale of the earthquakes that reshaped the center of the continent and the equally unimaginable effort Americans made to ignore, diminish and forget this event.

The Lost History of the New Madrid Earthquakes describes two unfamiliar landscapes: the lower Mississippi River Valley before and after the earthquake and the discourse of science as it evolved over the nineteenth century. Who knew that the St. Francis River once rivaled the Mississippi? Who knew there was a Jesuit Seismological Service in the 1920s? Environmental history has useful lenses to help us see these landscapes, but I wonder if the earthquake makes it too easy to ignore human actors in this story.

Earthquakes, even those that have long aftershocks like this one, are discrete events and people in the United States seem particularly good at forgetting them. Earthquakes, whether in northern California in 1991 or in New Madrid Missouri in 1812 are never permitted to dent the optimism of settler culture. This forgetting, whether willful or wishful, forms a major part of Valencius' text. The knowledge about the earthquake and the astonishing and long-lasting damage it did disappeared because that knowledge came from sources people no longer wanted to trust: their own bodies, stories from Native people and poor black and white backwoodsmen, and tale-telling newspapers. As seismic science and its accurate instruments replaced the reporting of citizen naturalists, tales of rivers flowing backwards and great cracks in the earth seemed first quaint, then unlikely, and finally just fiction.

Because of Valencius' skillful explication of science's shift from broadly shared observation to technical expertise by a few, we learn a lot about the loss of vernacular knowledge. I particular enjoyed puzzling over the modern science of plate tectonics that seems so explanatory until you get to those big quakes that take place in the middle of plates, like New Madrid in 1812 or two enormously deadly ones in China in 1556 and 1976. Intraplate tectonics are poorly understood, much like the 1812 New Madrid quake, and that seems pretty dangerous. Ironically, as the earthquake of 1812 emerges as one of the big ones and one that could happen again, narratives and vernacular reporters have regained credibility.

Even more interesting, from my perspective as a historian of the American West interested in the early nineteenth century, was Valencius' description of a place and gathering of peoples that is lost to us now. Before the earthquake, the lower Mississippi Valley, what the author calls the St. Francis hinterland, was a "vital and lively place, the anchor and opening for a hinterland of regional importance"(84). Native and Euro-American people had made this vital place together. Cherokee, Choctaw, Delaware and Anglo-American newcomers arrived in waves of emigration beginning in the 1780s and joined longer settled Quapaw, Osage, and French who pioneered this landscape as traders. They came as refugees from the American Revolution, to escape the beginnings of Indian removal, and to take their chances on a land and waterscape that offered a plentiful life with new partners. Furs and hides, corn, lead, and fish became part of a large trade centered at New Madrid, but characterized by dozens of "multi-ethnic and polyglot settlements" (68) where people spoke many languages, married each other, and made lives that depended on the easy access to rivers.

The Cherokee leader Connetoo brought his people to this burgeoning place and they became successful traders because of their new relationships with Europeans. When the earthquakes came, however, they came at the same time as the great Shawnee leader Tecumseh had begun a broad resistance movement. Tecumseh and his brother the Prophet had predicted first comet showers and now an earthquake. Their messages of cultural resistance, pan-Indian unity, and avoiding the trappings of white culture now had real power. Indian people worried the world was coming to an end because they had gone too far down the path of white life. The buckling and shivering land spoke volumes about divine anger. The solution, according to Tecumseh and many other local prophets, was to give up trade with whites, European clothing and habits, and to band together to resist land loss – activities especially divisive in places like the St. Francis hinterlands where Native and European people had grown comfortable together. This comfort would be obliterated by the earthquakes, but even more by the War of 1812 and the bitter Indian wars that accompanied it.

The landscape where this story played out was made twice unrecognizable; first by the earthquakes if 1812 and then by the process of "reclamation" in the early twentieth century. The earthquakes and the long series of aftershocks created sunk lands, sand blows, sloughs, and twisted rivers, making the region nearly impassable. Earthquake subsidence rerouted rivers, changed the quality of soil, and made the St. Francis hinterlands into a "swampy morass (216)." When the Energizer Bunnies of the frontier, railroad boosters and land speculators, arrived on this ruined place to reconstruct it after the Civil War, they labeled it as swampland that needed to be drained and made into farmland. The isolated backcountry of southern Missouri and northern Arkansas, once where people shared delicious turkeys, bears, deer and fish was brutally remade into a zone of industrial agriculture. Instead of peaceful, productive small farms, however, the process created racial division, isolation and poverty that still plagues the region.

Valencius might paint the twentieth-century landscape too grimly and the one that existed before 1812 too optimistically, but the two places located in the same geographic spot are radically different. What changed the successful and growing intercultural region that blossomed along the rivers in the heart of the continent into troubled wasteland is hard to say. Was it, as Valencius argues very persuasively, the earthquakes of 1811-1812 and their forgetting? Or did humanity – demographic change, the inability to share, and clashing visions of the good life that led to war – cause these vast changes? This place, the lower Mississippi Valley, has seen empires rise and fall several times. Where Cahokians and Caddoans once thrived and then disappeared and innumerable buffalo roamed there and then didn't, time and violent acts of gods and humans have turned this world over and over. No seismograph, divining rod, or written record seems able to measure these changes, much less the ones that took place in 1812. However, we are taken for a wonderful ride in this book, but maybe on Ferris wheel that allows us to see from on high rather than a rollercoaster that makes us close our eyes.

Comments by Peter C. Mancall, University of Southern California

Reading about New Madrid from the Edge of the Ring of Fire

There are, when it comes down to it, two groups of people in the world: those who have felt earthquakes and those who have not. Those of us who live in Southern California are in the first group, residing on the eastern boundaries of the so-called Ring of Fire that arcs across the Pacific Rim. Everyone knows about the big earthquakes of modern times: the 6.9 Loma Prieta earthquake in northern California that took 63 lives not far from a World Series game in October 1989; the 9.0 Tōhoku tsunami-producing monster that killed approximately 16,000 people, devastated eastern Japan, and caused a meltdown of the Fukushima nuclear plant in in March 2011; and the so-called Sumatra-Andaman 9.1 (or greater) tidal-wave producing quake that took an unimaginable 230,000 souls in South Asia. Most temblors are fortunately much smaller. Still, they are so common that they have their own rituals: feel the house shake, duck and cover to avoid falling objects, turn on a television. Within moments, a news anchor will appear, seismograph needles bouncing up and down on a graphic in the background, and soon enough details will emerge about the location of the epicenter and an estimate of the magnitude on the seismic scale. Earthquakes mark landscapes here. Across the Los Angeles basin, chimneys cracked by the 6.7 1994 Northridge temblor, which also took 57 lives, still stand. They are creaky reminders of our lives on the edge—on the edge of the continent, on the edge of the ring, and on the edges of our nerves.

Earthquakes are part of our lives here, something that, in our minds at least, differentiates us from the rest of the United States. And so it was with great trepidation that I picked up Conevery Bolton Valencius's *The Lost History of the New Madrid Earthquakes*, a study of the largest earthquake in the nation's history. Valencius's eloquent analysis provides a terrifying case study of a major earthquake. Her history is more a meditation than a monograph, an extended time-looping riff that is ultimately a primer on how to understand the tectonic plates beneath our feet that sometimes get angry.

The Lost History is an example of a particular kind of sophisticated environmental history that should appeal to many scholars in the field. It is not a standard history of a disaster. Indeed, there is not a single narrative arc here, though the book does move from the late eighteenth century into the early twenty-first century. Instead, Valencius focuses on epistemology: how do we know what we know about the history of what happened in the middle of the continent in 1811-1812? This was not a peaceful period in the region or for the nation. A comet that appeared in the sky in 1811 excited omen-seekers everywhere. Many of them made predictions about what would happen next. Those who indulged in this future telling included the indigenous inhabitants of the Missouri Valley, many already swept up in a mid-continent Native revival movement linked to the military and religious visions of the Shawnee headman Tecumseh and his half-brother Tenskwatawa, often called the

Shawnee Prophet. Farther east tensions between the United States, still a nation in infancy, and Britain had spawned the War of 1812. On its own, the tectonic violence was sufficient to reshape human settlement across much of the interior. But, *pace* the narrative found in too many earlier histories of this period, there was no single "Indian" response to these challenges, a point Valencius makes by examining separate indigenous responses of Shawnees, Creeks, and others.

Valencius came to this project having written one of the most subtle and elegant environmental histories of the region, her path-breaking first book entitled *The Health of the Country: How American Settlers Understood Themselves and their Land* (Basic Books, 2002). There she also explored epistemological issues, particularly related to theories about human health that could be found not only in formal medical treatises but among local observers as well. In *The Lost History* she draws on the same conceptual tools, and with the same writerly style that made her first book so exceptional. (The dissertation on which it was based won the Allan Nevins Prize from the Society of American Historians.) There is a tactile quality to her prose in *The Lost History*, evident both in the text and in a series of footnotes intended not to cite sources—there are plenty of those too—but to explain scientific concepts for a wider audience. The very first of these unnumbered notes appears on p. 2 and contains one of the most engaging explanations of liquefaction likely to ever appear in a scholarly book. It is something that "anyone who has ever wriggled bare feet on a beach is familiar with," she writes, approximating a sensation that many people know: "smush wet sand vigorously between your feet, and the formerly solid beach you have been walking on will spurt up between your toes as a liquid." Valencius uses what might otherwise be a boring scholarly apparatus to inject vivid details into her book. In discussing a multi-indigenous settlement at L'Anse a la Graise on a bend of the Mississippi, she writes: "Modern reaction to the name Greasy Cove might be summarized as 'yuck'" (p. 68n.) If I had the authority I would nominate that as the best footnote of 2013.

While Valencius's humor peeks through in these notes, there is nothing light or inconsequential about either her field and archival research or her topic. Valencius, as she tells us—see the note on page 267--was in the San Francisco Bay area during the Loma Prieto quake so she knows all too well the kinds of terrors produced when the ground moves. As she explains, however, what happened two hundred years ago was different. The temblors of 1811-1812 were intra-plate quakes, a phenomenon both rarer than the shaking that occurs when plates rub up against each other and also apparently more dangerous. She notes that similar quakes at Shaanxi Province in 1556 and Tanghsan in 1976 each killed over 650,000 people. The events of 1811-1812, when many "people "experienced an ordinary world in commotion" (p. 23), seemed to be signs of divine judgment. But who was being punished and why?

In 1811-12, Native observers of the comet and the New Madrid shaking proposed multiple responses to these extraordinary events. Cherokees, Valencius argues, embraced traditional religious practices; many saw the events as portents of spirits

encouraging the locals to resist the encroachments of non-natives. Creek prophets such as High-Headed Jim and Captain Isaacs "claimed to be able to command the forces of nature," she writes, "to turn solid earth to swampland, make the earth shake, protect their towns, and make followers bulletproof" (p. 136). And so, she notes, "[f]or many Americans, the quakes heightened fears of general and dangerous uprising—of native peoples and of their earth itself" (p. 144), but no group had a monopoly on how to interpret such events or how to respond to their spiritual challenges.

Valencius's book crosses the temporal boundary between early American to modern American history. She reminds readers that the epic struggles of first centuries of European colonization in North America did not fade away when modernity, whatever that is, started to lurk on the intellectual horizon in the nineteenth century. American observers in the era of New Madrid tried to make sense of the unfamiliar using analogous reasoning strategies that had been common since Christopher Columbus first crossed the Atlantic. "Confronted with such strangeness" produced by the widespread shaking, "people reached for familiar metaphors" (p. 24) such as the feeling of being on a ship at sea. In the absence of universal theories about why earthquakes occurred, those who felt the ground melting under their feet or saw the Mississippi River flowing backwards grasped for satisfying explanations.

The Lost History is more than a study of earthquakes and how they were understood at the time. It is also a penetrating analysis of how Americans forgot about what had happened in 1811-12, and then rediscovered knowledge of it. Valencius looks at the intersection between modern landforms and reports of natural phenomena, such as the remains of extinct creatures thrust upward in sand blows produced by the quake. She reads photographic evidence with skill, including a series of four pictures from the Little River Drainage District Records that she found in the Kent Library at Southeast Missouri State University (see pages 243 through 246). Taken together, these black-and-white images from the early twentieth century reveal how modern dredging equipment remade what had been the Great Swamp of the St. Francis River into agricultural land, thereby erasing part of the earthquake's legacy. Such human action echoed what could be seen as nature's own efforts to cover its past. "The earth itself hid its evidence," Valencius writes. "Earthquakes in a floodplain leave no dramatic escarpments or ragged lines of rock: instead, they produce strange circles of sand, snakelike fingers of white on the occasional riverbank, subtle changes like long and lower rises that are dramatic only to people who can see past the topographic subtlety to the forces that must have produced them" (p. 271).

By taking the reader into local knowledge of natural phenomena—passed on orally in indigenous communities, in letters reprinted on the front page of small town newspapers, in fragments of imaginative writing about bodily observations—Valencius has created a history of natural science that stretches from Jefferson's age to ours. She weaves culture and religion into a history of earth science, thus reminding scientists of the enormous value of first-hand observations, including

recollections left by the scientifically illiterate. What might have otherwise been a localized history becomes, in her hands, a history of sunken lands, earthquake weather, and vernacular knowledge. By showing how people in this place and time understood natural phenomena, she suggests how we might as well.

Good environmental history forces us to think anew about the landscape. As I write this from my office at the Huntington Library, I cannot avoid thinking about the steep drop in the lovely lawns here, just south of the house that contains Gainsborough's "The Blue Boy," one of the most famous paintings living on American soil. It is no slight drop but instead a grass-covered crack in the earth above a seam of the San Andreas Fault. Earthquake scientists, and there are many here, are struggling to find warning signs that a temblor is approaching. They know full well that determining a major quake in advance could save countless lives. They no longer rely on comets or other celestial signs, nor argue that a quake signals divine punishment. But as Valencius has so engagingly taught her readers, a major jolt will likely prompt many besides scientists to seek other kinds of explanations. Those of us dwelling on the ring of fire will have a front row seat to what no one will be able to forget.

Comments by Matthew Mulcahy, Loyola University Maryland

Lost and Found

The Lost History of the New Madrid Earthquakes is a book that defies easy categorization. It is, in part, a social history of the earthquakes that shook the central Mississippi River Valley in the winter of 1811-12 and their impact on the Native Americans and French and American settlers who lived in the region. It is an environmental history of changing patterns of land use across three centuries, tracing shifts from an economy built on trapping and trading to one focused on timbering and railroading and finally to today's landscape of industrial agriculture. It is a history of science that examines how people studied and understood the shaking of the earth in the nineteenth and twentieth centuries. It is also a study of memory and historiography, exploring how particular events get recorded, sometimes forgotten, and remembered anew. Finally, it is, in part, a public-policy paper that highlights issues of risk, safety, and economic priorities that face those living in the region today. Along the way, the book touches on topics ranging from the place of Davy Crockett in American folklore, to "The Year Without a Summer" (and a song of that name by the freak folk musical group Rasputina), to the effects of liquefaction, and to the mass migration of squirrels in the eighteenth and nineteenth centuries (including the 640,000 squirrel bounties paid by the Pennsylvania Assembly in 1747!) That all of this disparate material holds together highlights how a history of a specific disaster can lend itself to truly interdisciplinary scholarship, and how it can be used to open windows on to a wide range of questions and issues. That all this material holds together so well and is so compelling is a testament to Conevery Bolton Valencius's great skill as a historian and writer.

It strikes me that *The Lost History* occupies a somewhat distinctive place in the emerging historiography of disasters. (I am being narrow in my definition here, focusing on works by historians or written as historical studies and ignoring much terrific work on disasters by social and natural scientists.) Numerous excellent studies of historical disasters have appeared in the past two decades or so. Some focus on specific events like the Chicago fire or 1927 Mississippi River flood.[5] Others are studies of a particular type of disaster such as hurricanes or earthquakes over time, or examinations of a disaster or disasters within a particular time period

[5]The literature is large and growing. For a few examples, see Karen Sawislak, *Smoldering City: Chicagoans and the Great Fire, 1871-74* (Chicago, 1995); John Barry, *Rising Tide: The Great Mississippi River Flood of 1927 and How it Changed America* (New York, 1998); David Welky, *The Thousand-Year Flood: The Ohio-Mississippi River Flood of 1937*(Chicago, 2011). These studies, of course, build on older, path-breaking work on disasters such as Charles Rosenberg's *The Cholera Years: The United States in 1832, 1849, and 1866* (Chicago, 1962) and Donald Worster, *The Dust Bowl: The Southern Plains in the 1930s* (Oxford, 1979).

or culture. In addition to narrating the history of the event(s), these studies generally use disaster as a lens through which to explore larger social, cultural, political, and economic issues, including not surprisingly, humans' relationship to the surrounding environment.[6]

Valencius is interested in such issues as well. The book has several chapters that narrate the earthquakes as events and trace their social and economic effects. She examines how various groups of Native Americans, French creoles, and newly arrived Anglo-Americans made sense of the earthquakes in terms of religion and science and explores how stories (or denials) of the earthquake fit into changing narratives about disasters and economic development in the later nineteenth century. One of the book's many strengths in these early chapters is the focus on Native Americans. The story of Tecumseh's efforts to build a pan-Indian alliance, and his use of an earthquake prophecy to help cement those bonds, is relatively well known. Valencius, however, moves beyond Tecumseh and traces the history of groups of Shawnee, Delaware, Cherokee, Osage, and Quapaw living in the lower Mississippi Valley in the 1810s, how they got there, the vibrant multiethnic communities and trading economies they established, and how they responded to the earthquake. Historians have often suggested that the earthquakes did little damage because so few people lived in the area, by which they mean, so few Anglo-Americans. Valencius's work paints a much different picture of the region's social and economic landscape and highlights the significant disruptions caused by the earthquake.

Nevertheless, Valencius's real focus, and what distinguishes her work from other studies of disasters, is a larger, epistemological question, namely – "how do we know what we know – or what we think we know – about the New Madrid earthquakes of 1811-12 and possibly of the future?" (12). For a long time, historians (and scientists) did not know much at all about them, and what we knew was dismissed as a footnote (in larger historical studies of the region) or an aberration (in scientific literature that focused on the *real* earthquake country in the United States, the West Coast). Only in the past few decades have scientists and a few historians reexamined the earthquakes, asking new questions and re-analyzing old narrative accounts. Why that was so is the central theme in Valencius's book. It is a fascinating story, and Valencius tells it with great energy, wit, and insight.

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[6] Stuart Schwartz, *Sea of Storms: Hurricanes in the Greater Caribbean from Columbus to Katrina* (Princeton University Press, forthcoming); Jurgen Büchaneau and Lyman Johnson, eds., *Aftershocks: Earthquakes and Popular Politics in Latin America* (Albuquerque, NM, 2009). Gregory Clancey, *Earthquake Nation: The Cultural Politics of Japanese Seismicity, 1868-1930* (Berkeley, CA, 2006); Alessa Johns, ed., *Dreadful Visitations: Confronting Natural Catastrophe in the Age of Enlightenment* (New York, 1999); Ted Steinberg, *Acts of Gods: The Unnatural History of Natural Disasters in America* (Oxford, 2000); Kevin Rozario, *The Culture of Calamity: Disaster and the Making of Modern America* (Chicago, 2007).

Structuring the book around the question of how we know what we know about the New Madrid earthquakes offers a number of rewards. In the opening chapter, for example, Valencius analyzes an eyewitness account of the earthquakes by William Leigh Pierce. Block quotations from Pierce are followed by extended commentary touching on various topics. Doing this gives readers a sense of how a contemporary described the disaster, but also allows Valencius to highlight how scientists now are using such accounts to gain new information about past earthquakes. Her discussion of the science behind some of the earthquakes' most spectacular effects, such as the Mississippi running backwards and volcanic sand blows (the result of liquefaction), is presented in clear, accessible prose and with vivid examples. When she returns to these issues in the last chapter, readers have a good sense of how scientists have become historians, reading old accounts to gain insight on the magnitude of past tremors. Likewise, Chapter Five is both an examination of early nineteenth-century debates regarding earthquake causation as well as an analysis of the centrality of scientific discussion and investigation in everyday life. This "vernacular science," Valencius highlights, was not found in the emerging scientific journals of the day, but in letters, diaries, and newspapers, sometime sandwiched between reports on European affairs and an amazing cow that produced fourteen quarts of milk a day. Thus, in addition to being a history of nineteenth-century earthquake theories, the chapter becomes a meditation on historical sources and how history, particularly the history of science, has been written. Chapter Six highlights the multiple and interconnected factors that led to evidence of the New Madrid earthquakes being forgotten, or in some cases erased, during the later nineteenth and twentieth centuries, including the Civil War, changing race relations, land development schemes, and other disasters (floods, the San Francisco earthquake) as well as new developments in the field of seismology.

One drawback to Valencius's focus and approach is that some elements of the *history* of the earthquakes, the events and their aftermath, get less attention than they might. Following Pierce's text so closely and tracing the science behind his description of the earthquake in the opening chapter, for example, means that topics that were not addressed by Pierce (in some cases because they had not happened yet) are covered only briefly. To cite one example, readers only get passing reference to Congress's decision to award victims some relief in the form of land grants in 1815. There is no real discussion of what prompted Congress to act. This is an interesting issue, however, because victims of many other disasters at this time received no relief and because Congress sent $50,000 to aid victims of an earthquake in Venezuela in 1812. What was the thinking in Congress about relief and what form it should take? Why did it take so long to allocate the relief (three years after the event – and much longer than aid to Venezuela)? What distinguished the New Madrid claims from others? Did Missouri's status as a territory factor into the decision? More context and discussion of these issues, I think, would enhance her account here.[7] Likewise, although Valencius spends several pages on revivals, I

[7] Michelle Landis Dauber's work on disaster relief, which Valencius cites, mentions the New Madrid grants, but does not provide details on the particular debates. See *The Sympathetic*

also wanted to know more about the religious response to the earthquakes among Anglo-Americans. She mentions the jump in church membership in the town of New Madrid (p. 167), but what about in other parts of the region? What about the response in places further east? Was Beaufort, South Carolina, the only place that proclaimed a day of fasting (162)?

These comments, of course, are somewhat unfair as they ask Valencius for a different book than the one she wrote, but I nonetheless wanted Vaelncius to bring her sharp analysis and lively writing to some of these issues. In the end, however, these are minor quibbles about a terrifically rich book, one that I thoroughly enjoyed reading and profited from immensely. As I finished, I realized that *The Lost History* in some ways reminded me of another study on a quite different topic, Alfred Young's classic, *The Shoemaker and the Revolution*, a comparison I hope Valencius would not mind. Young's book is divided into two parts: Part One focuses on the lived experience of the poor Boston shoemaker, George Robert Twelve Hewes, and especially his participation in the central events of the 1760s and 1770s. Part Two examines how and why Hewes and his life were rediscovered in the 1820s, then forgotten for over a century, only to be rediscovered in the 1960s and 1970s. There are obvious differences in their approach and concerns, but both Young and Valencius ask the same basic question – how and why do we know what we know about matters historical and, in Valencius's case, scientific. Both books are studies of events and processes, of history and memory. Both are highly interdisciplinary. And, most importantly, both are wonderfully engaging accounts that offer rich rewards to readers.

State: Disaster Relief and the Origins of the American Welfare State (Chicago, 2012) and her article ""Let me next time be tried by fire': Disaster Relief and the Origins of the American Welfare State," *Northwestern University Law Review* 92 (1998): 967-1034.

Response by Conevery Bolton Valencius, Univ. of Massachusetts Boston

In *The Lost History of the New Madrid Earthquakes* I set out to trace how mid-American earthquakes of two hundred years ago mattered in their own time and how they matter still. I sought to show how the New Madrid[8] quakes affected the settlement choices of peoples of the Mississippi Valley, the religion and science of the early nineteenth century, the spirituality and politics of Native groups, and the physical sensations and bodily understanding of people who were rocked and jolted by these 1811-12 tremors. I sought to ask how these various forms of knowledge and experience could so completely disappear from history and common experience that once-celebrated events would seem a mere wisp of folktale or stale punch line. Tracing scientific efforts to understand long-past seismicity, I traced processes by which knowledge can be forgotten and denied, and then recovered. In Ben Cohen's terms, I tried to "see under the ground" for what was buried. Engaging present debates about mid continent earthquake preparation, I tried to show why we in the present day need to discover and reclaim lost history and lost knowledges.

That a reader as smart and perceptive as Ben Cohen could have a lively coffeeshop conversation about *The Lost History* makes me feel that I did in this book what I set out to do. I am delighted to read in these thoughtful roundtable commentaries that so many of the intertwining strands within *The Lost History* were apparent to such perceptive readers. The commentators on this roundtable have beautifully expressed many of the perspectives I was trying to present.

The commentators have also done a beautiful job of capturing all that this book could not be.

Yes, there are many stories and many histories, but not all are pursued in equal depth. Matthew Mulcahey is right that some aspects of the history get short shrift, and in particular I agree that the Congressional aid to 'the sufferers at New Madrid' is both important and underdeveloped. Essentially, I couldn't figure out why Congress took this action – or, rather, I knew that this was one piece of a developing story about increasing Congressional responsibility for helping communities through events understood as "acts of God," and I knew that this legislation was part of the early-nineteenth-century debate over the role of the federal government generally, but I could not identify one clear answer for why here, why now.[9] Having

[8] The town is pronounced "new MAD-rid" and my name is pronounced "CON-a-very va-LEN-chus," all for reasons that are historical if not exactly phonetic.

[9] Ted Steinberg's *Acts of God* supplies one strand of that answer, and Michele Dauber's article gives another, but I think there are more particular pieces that some clever researcher could have a really good time figuring out. (See Ted Steinberg, *Acts of God: The Unnatural History of Natural Disaster in America*, second ed. (Oxford University Press, 2006) and Michele Landis Dauber, "The Sympathetic State," *Law and History Review* 23, no. 2 (2005), as well as Bill Lowry's comments on this book in the October 2014 journal *Common*

called attention to these quakes and federal reaction to them, I hope someone more versed in the political machinations of Congress in the early republic might explain this intriguing Congressional action in the depth it deserves.

Throughout the writing, I felt chagrin at having to ride roughshod over complexity and nuance to weave together a broader story. At the same time, and conversely, I felt chagrin about the level of depth and detail: I sympathize with unsuspecting ordinary readers who might want to know more about earthquakes but find themselves bewildered in the midst of a discussion about the best way to float lead down from the mines of Missouri to the port of New Orleans in the late eighteenth century.[10]

I worked on this book over the course of ten years. Perhaps if I took another ten years, I could write it shorter. Yet this is the book it can be now: detail and sweep both.

Anne Hyde's comments about a Ferris wheel capture the gist of *The Lost History.* Even in our world of skyrises, common air travel, and GoogleEarth, some of the original magic of Ferris wheels is still accessible to anybody getting tugged on the arm by a small child at a state fair: When we're up there, we can see so much! So far! And everything looks so different! In a Ferris wheel, we can envision a broader landscape that we're usually up too close to see. That's what I was trying to do in this book: enable us as inhabitants of the twenty-first-century world to see a set of past environments – physical and social, intellectual and spiritual – with a different set of perceptions.[11]

Further, Ben Cohen's reflections about present-day implications speak directly to my larger goals in *The Lost History.* I did write this history in part to nudge our present. For many years my family had a very old and cranky neighbor who identified me as a "tree-hugger," told me I'd understand things better if I watched the right news shows, and would routinely bellow about how he knew all about New England winters and that he didn't see any damn climate change happening. During the driveway moments in recent winters when my children and I would dig his town car out from under unusually many feet of snow and he would yell from his door about whether we "felt any global warming yet," I would often reflect that even 90-odd years of New England wasn't all that much to judge by, given millennia of the earth's history.[12] Global climate change has many effects, some of which are

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Reader, out of Washington University in St. Louis: http://commonreader.wustl.edu/c/missouri-quake-history/).

[10] The usual first, candid response from non-academic friends and relations who pick up *The Lost History of the New Madrid Earthquakes* is "Whoa!! – small font!!!"

[11] I admit that probate files and early-twentieth-century seismological debates make for a relatively creaky roller coaster….but I've always been partial to Ferris wheels, myself!

[12] "Mama," my seven-year-old asked me once, indignant, "Why does Mr. S. always yell at you when we shovel him out?" "Because," I answered, "I'm a woman and I'm shoveling him out,

manifest in recent (and ongoing!) record winter snows – as well as our recent record summer heat.

We live in a part of the northeast Atlantic coast that has been subject to powerful earthquakes (even, slightly north of us, tsunamis), and yet earthquakes are only rarely part of our conversation about civic preparedness. In school, my children learn how to take cover from a school shooter, but not from an earthquake. Our personal histories or even our societal histories have a short horizon compared to some of the grand processes churning in the earth and skies.

I think we collectively need more modesty about what we know and all that we don't know. (Interestingly, I often hear American military leaders being much clearer about their own lack of knowledge than many civilian leaders are). Denying history – whether histories of earthquakes or histories of dramatic, recent changes to our climate – is a risky concern. Seeing as clearly as possible what happened in the past is a key element in planning for the future. As I listened to my neighbor's frustrated rage at the myth of climate change and at so much else, I always thought of how scared he sounded. In that, he and I agreed. Dramatic, large-scale environmental change is indeed frightening. As a historian and as an American citizen, I find denial of past change even more chilling. History—and recent tragedies in China and elsewhere—shows us that seismic retrofits for schools in an earthquake zone do indeed make a great deal of sense. Uncomfortable though it is, political will to change our energy usage may be a necessary response to actual data. Perhaps I did not emphasize the present implications hard enough, but I wanted this book to make sense as a history, in part because I think that history always makes a difference for our here and our now.

Reading the thoughtful responses of this roundtable, I am particularly grateful to the commentators for capturing so many of the arguments of *The Lost History* because the book that this became is not at all the book I originally set out to write. I set out to write a different, smaller book, about the impact of the New Madrid quakes on early nineteenth century American society.

I published a first book, *The Health of the Country,* in 2002, to answer a question I had when I started reading family papers from American emigrants to the "Far West"

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and he's from a generation where it wasn't supposed to work that way." How the challenges of modern gender roles connect with my neighbor's hostility to the science of climate change, I can't exactly articulate, but I have a hunch they do. I take comfort in the end of that philosophical conversation: "Well," said my son, turning back to his shovel, "when I'm old and can't dig my own snow, I'm at least going to say 'thank you,' and not yell about the President!" (Mark Fiege does beautifully articulate the connections between gender and scientific knowledge in World War II – the era of my neighbor's early adulthood—in "Atomic Sublime" in Mark Fiege, *The Republic of Nature: An Environmental History of the United States* (Seattle and London: University of Washington Press, 2012).)

in the early and middle nineteenth century. I didn't understand why people kept making statements like "This is a healthy place," or "This is an insalubrious valley." I wrote a book to try to figure that out. *The Health of the Country* argued that amorphous and powerfully pervasive cultural ideas and practices shaped understanding of human health and racial constitution through much of the nineteenth century, and, simultaneously, those same ideas and practices shaped understanding of agricultural land. I was proud of that book—it, too, did what I hoped it would do—but when I had completed it, I wanted to take on something different.

After all that cultural amorphousness, I wanted to write a story in which **specific things happened, one after another**. Particular events, with particular dates. I was still interested in the nineteenth century[13] and the middle Mississippi Valley,[14] and I found myself fascinated by the swampland along the Mississippi.[15] I told the wonderful man I am married to, who in addition to great patience possesses fabulous consulting skills, that I needed his help figuring out my next book. Parameters: about the midcontinent in the early nineteenth century, but with exact dates and events. The day after that conversation, an academic colleague came to dinner and we got talking about the New Madrid earthquakes. "Hey," asked my husband as we did the dishes, "anybody written a book about those?"

Boom! **Book**! We quickly drew the outline of my next project: a short, quick book with lots of illustrations, telling the dramatic, exciting story of a natural event and its effects on the early nineteenth century.

I got to work figuring out what had happened in 1811 and 1812 with these earthquakes.

Then, two things happened. The first was that somebody else wrote that book.[16] After a stiff whisky, I could accept that. After all, several seismologists had made sure to tell me that I was not the only historian courting their conversation.

The second thing that happened was that I kept having unexpected conversations with scientists, and one unexpected conversation with my father-in-law. The earth scientists generous enough to speak with me (a big part of my research experience was how fun it is to talk with earth scientists!) would make all kinds of conclusions about these quakes, and then pull out the same evidence I was using. Literally, the

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[13] That's what my training was in, after all.

[14] Partly because we had little kids and local family, so nearby archives were useful. Partly because I keep being intrigued by all the things that take place when everybody thinks the interesting stuff is happening elsewhere—like in big cities on the coasts.

[15] For reasons I'm still not entirely clear on.

16 Jay Feldman, *When the Mississippi Ran Backwards: Empire, Intrigue, Murder, and the New Madrid Earthquakes of 1811-12* (Free Press, 2012), which is, I must admit, a much better book than I selfishly hoped it would be. Quite good, in fact!

same photocopied letters and newspaper articles. While I was in the middle of those conversations and research, I was invited to give a talk at MIT (because not really having any firm conclusions yet has rarely stopped me from wanting to talk with people about interesting projects). My Boston-area father-in-law, a union pipefitter who routinely checks out an armlength of books at the local library, asked what I was working on. "Oh, good," he said, when I explained about early-nineteenth-century earthquakes that nobody knew much about, "that'll be much easier for you than that first book. You can just go ask the scientists what happened, and then you'll know where to look for your history sources." I remember stopping to a halt in the kitchen when he said that (we almost tripped over each other). That was exactly the interesting part: I *couldn't* "just go ask the scientists." They were figuring out what happened, using many of the same sources and methods that I was. We were in the middle of a story in which the history of the past was being created in the present by a bunch of people from different disciplines all working in different ways with some of the same basic material, sometimes having trouble even figuring out what the terms of analysis should be.

After that, this became a different book. The question was no longer "what happened," but "how do we all know what we know – or what we *think* we now know–about what happened." This was still a story about early-nineteenth-century quakes, but it was also a story about twenty-first-century scientists, of grant funding, of risk evaluation, of what kinds of evidence was valid for making what kinds of claims.

This also became no longer a short book, no longer (I am sorry, dear husband) a quick book, no longer as popularly-accessible a book.

I found this re-envisioned project a hard book to write. Partly I had difficulty because I had to learn a lot about earth science, as well as about American religion and American Indian societies and about a hundred other topics. Mostly, though, because every single statement about what happened had to be hedged with why we think that, or how, or who thinks that, or how the changing sense of what happened back in 1811-12 is changing how scientists –and city planners and policy makers and school board members – think about the present, too.

I also found this a hard book to write – but also a fascinating book to write – because while I was trying to capture unstable science, I made myself professionally unstable: in 2004, I left the wonderful academic job I loved in order to have more time to run around with a houseful of little kids. I kept working, but as a free-range historian, no longer one with a steady job and easy-to-recognize place in the larger world or in the academic universe. I found myself wishing at moments that I'd chosen a more straightforward historical story to work on, since epistemological instability only seemed to intensify my institutional and professional instability.[17]

[17] At the same time, an important element of this story is the kinds of institutional support I did receive: from the institutions that offered me connection, the Harvard University

After a few years, I had a houseful of people who could all walk, talk, and make observations about the world, as well as an almost-finished book. I am now blessed (yes, I really am from mid-continent) to have found a wonderful fit back in formal academia.[18]

Yet for all the conflicting stresses of that in-between-in-all-ways period, I have come to see my own situation in those years in some of the same ways that I see my children's ability to have fun on a RipStik (skateboard-like contraptions with two wheels and a joint in the middle). As I marvel at kids moving in sinuous curves down the street, I have come to appreciate the seemingly impossible kinetics of this device. Because there's no stability anywhere, riders can use small movements of hip, ankle, leg to propel themselves with graceful patterns and (yikes!) impressive speed. So, too, I suspect, having to figure out many kinds of balance simultaneously while I was researching and writing this book may have given me a better ability to move intellectually where my project needed to go. Them's radical words, in some ways – similar musings certainly got Supreme Court Justice Sonia Sotomayor in a lot of trouble during confirmation hearings—but much of my academic work has taught me that people's experiences shape their thoughts and ideas, so perhaps I shouldn't be so surprised to discover that in my own intellectual journey.

The first stories I tried to tell in *The Lost History* are about what the quakes did – to Native societies, to American emigration, to communities' spiritual well-being, to their physical well-being, to American science. (The initial chapters of the book are in some sense the original book I planned back at my St. Louis kitchen sink.) I investigated why the quakes were so profoundly erased from collective as well as expert memory – why, as a kid growing up in that region, I knew them only as a kinda-sorta-maybe set of events. This book tells stories about loss and elision: stories about Civil War and racial struggle, about environmental transformation, and scientific revolution in the study of the earth's movement. All of those changes made the New Madrid quakes harder to see or regard as actual real events. I ended with why these earthquakes continue to have impact, now (and I do mean, *now*: I owe a profound debt of gratitude to the University of Chicago copy-editors who bore with me as I did my best to incorporate a late-coming major USGS report on New Madrid science). I ended, in other words, with that conversation in my in-laws' kitchen.

Department of the History of Science, the National Endowment for the Humanities, and the now-defunct Dibner Institute; to the institutions that invited me to speak, enabling me to work at local archives all over the country even without any institutional research budget; and one informal institution, the Independent Women Scholars' Salon, which has taught me a great deal about writing as well as charging forth. I also received immense and powerful support and backing from academic colleagues at many places and at many levels. All of these together kept me well-anchored, and I am grateful!

[18] As my mother told me once, "Yes, you can have it all….just not necessarily all at the same time."

Peter Mancall's reflections on seeing the steep drop in the terrain outside his office with new eyes is in some ways what I most intended in writing this book, as I began it and as it changed under my feet. A main goal of mine is to help people see and experience environments differently. I am grateful to these readers for engaging in that journey with me and with this book.

I'm so glad they found it engaging. Academics need good books to read, too! Just because a work tells us a lot doesn't mean it has to be dry and tedious. We need interesting academic words.

And oh I am so very glad that these wonderfully smart readers enjoyed my footnotes! As I drive with car-weary children and spouse every summer back across country to visit relatives in the Mississippi Valley, we read out loud. A main pleasure has been to discover the British fiction writer Terry Pratchett, whose Tiffany Aching series and Discworld adventures capture the imagination of everyone in the car, from wide-eyed elementary schoolers to sweetly cynical early teenagers to earnestly wonky academics.[19] Pratchett uses footnotes to comment on his fiction. As I talked about my project to people I could corner at parties, at family gatherings, even in supermarket checkout lines, I found myself making connections that did not quite fit in the main narrative of the history. I was not sure what to do with those. Then, I found myself wondering during one very long day of driving when everyone in the car was laughing out loud at one of Pratchett's notes, "well, couldn't I do the same thing in non-fiction?" I am not sure that anyone has had milk come out their nose based on one of my footnotes, but I can at least aspire.

I am enormously pleased – and, truly, honored – at the careful attention and even praise from these writers. As I read these preceding thoughtful commentaries, I found myself reflecting both as historian and as storyteller. Perhaps telling the story of the distance between the book I set out to write and the book I discovered I needed to write speaks to some of the insightful issues raised in all of these reviews. …and Ben Cohen, if you ever want to share a cup of coffee, it's on me!

[19] In a world of children's literature which still has too few interesting main girl characters (why oh why do Ron Weasley and Harry Potter always rack up all the points for Gryffindor, when clearly Hermione Granger is just as crucial?!?!) Tiffany Aching is a fascinating and complex protagonist that had us pulling over at a Cracker Barrel and its guaranteed wi-fi just to download the next book in the series before hitting the next long stretch of Tennessee.

About the Contributors

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