

Earthquakes and History: Arguments over Hydraulic Fracturing and Arguments over History

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ABSTRACT

I'm a historian. I usually deal with old events and dead people. But when the earth started to shake in the mid-continent a few years back, I found myself trying to understand present events and people very much alive. I wrote a book about the New Madrid earthquakes of 1811-12. When social media posts from Arkansas and Missouri began to warn "Fracking is going to set off another Big One on the New Madrid fault!" I wanted to figure out what in the world they meant. In the scientific literature, I found a thoughtful set of investigations into how oil and gas production in shale plays can in certain circumstances trigger quakes – but I also found sensationalist arguments by non-scientists about past earthquakes and present dangers. Claims about earthquake history and claims about the history of hydraulic fracturing play two main roles in current debates over the environmental and social impacts of "fracking:" - Debate over fracking-related earthquakes take place on top of debates over the history of hydraulic fracturing itself. Advocates for hydraulic fracturing argue that the industry draws upon old and established techniques, while critics howl that "fracking" is new, untested, and unknown. Debates over the history of the technology are debates over the appropriateness and safety of shale oil and gas production. - At the same time, both advocates and critics of hydraulic fracturing were surprised by induced seismicity in the shale plays, and many regarded energy-related earthquakes as a new phenomenon. The history of induced seismicity, though, shows that seismic events triggered by oil and gas development broadly—and specifically by underground injection—have long been recognized. In discussion of whether hydraulic fracturing is new or old, there are two sides, with two clearly opposed views of the history—and present advisability—of shale development. Yet surprise about fracking-related earthquakes has been widely shared by both critics and supporters of hydraulic fracturing. People on many sides of this issue ignored clearly-available historical background. Perhaps historical context may offer ways to bring together conversation within polarized debates. Internet alarm about "the New Madrid Big One" may seem far from serious history of oil and gas extraction. Yet current quakes and current debates show that the history of induced earthquakes and the history of hydraulic fracturing shape debates over the future of shale.