A recent study of injection wells and earthquakes got a lot of press, but the reports missed an important nuance. The study, published in the June 19 edition of *Science*, found a definite connection between well injection and earthquakes. But there was an interesting wrinkle:

"The scientists found that disposal wells were 1.5 times more likely to be associated with earthquakes, although the region contains far more enhanced recovery wells. The link was strongest at higher injection rates, above about 300,000 barrels per month. Other potentially important factors—such as the pressure at the wellhead, the total volume of fluid injected, and whether fluid was injected near basement rock—did not appear to make much difference at a regional scale, the researchers say."

It is also unclear why the earthquake problem has cropped up in some places with injection wells but not in others. However, the association in the vulnerable areas seems clear. Reducing rejection rates, however, might allow injection wells to continue even in those areas without seismic impacts.

As it happens, the Oklahoma Supreme Court decided a related case last week, *Ladra v. New Dominion,* which also got a lot of press. Ms. Ladra was watchingTV in her living room when a 5.0 magnitude earthquake struck nearby, causing the rock facing on her two-story fireplace and chimney to fall and injuring her legs. She filed suit, claiming that injection wells had caused the earthquake. Her tort suit was based on a theory of strict liability for ultrahazardous activities. The defendant argued that a state regulatory commission had exclusive jurisdiction over all issues relating to well operation. The state supreme court rejected the argument, allowing the case to proceed in the lower court. It's not quite clear why this fairly technical ruling got national attention, but I suppose it was partly on a "man bites dog" argument — no one would be surprised if the Oklahoma courts ruled *in favor* of oil companies.

The idea of strict liability when land is used for unusually risky activities dates back to the 19th century. Courts have encountered real difficulties in trying to define the limits of that kind of liability. It applies to blasting activities in nearly all states, but after that things get blurrier. As a result, it's quite unclear whether injection wells or fracking would qualify. An alternative theory, suggested by the new *Science* article, might be that it's negligent to use too high an injection rate.

Another open question is the extent to which the science will support similar

conclusions about fracking (which was not the subject of the recent study). The USGS, at any rate, has been taking the position that any quakes associated with fracking are very small and do not pose the same problems as injection wells.But it remains to be seen if this conclusion will hold up with further research.