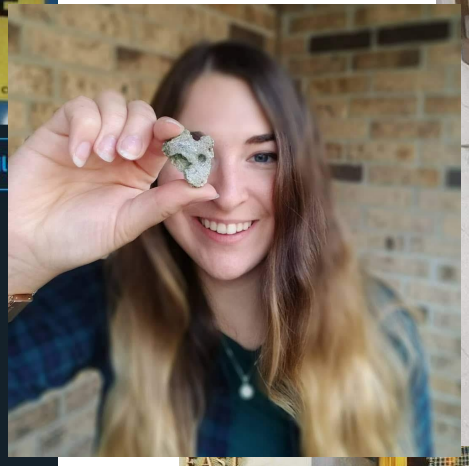
Communicating Risk:
the science of science communication

Katie Mummah



Life Sciences Communication
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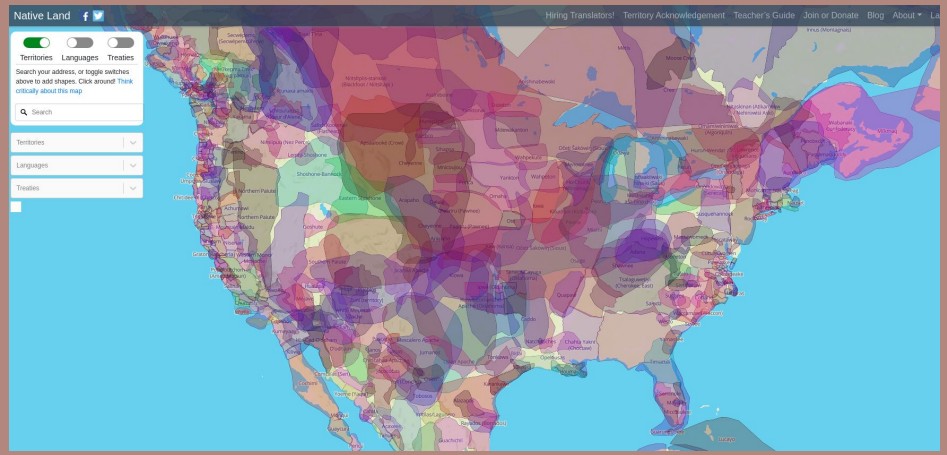

Risk does not mean the same thing in engineering as it does to the “public”

- Risk is inherently subjective
- Even PRA is based on a set of subjective expert judgements

Hansson, S. O. (2010). Risk: Objective or subjective, facts or values. Journal of Risk Research, 13(2), 231–238. https://doi.org/DOI: 10.1080/13669870903126226
Slovic, P. (1992). Perception of risk: Reflections on the psychometric paradigm. In S. Krimsky & Golding, D. (Eds.), *Social Theories of Risk* (pp. 117--152). Praeger.

Technical experts

Annual fatalities

Lay public

Catastrophic potential, controllability, threat to future generations, familiarity, equity, being voluntary, novelty, delayed effects, observability, level of scientific understanding

(Slovic, 1992)

Risks of a nuclear accident: TMI

- Small radiation exposure to public
- Stricter/costly regulation
- Greater public opposition
- More reliance on fossil fuels
- Increased construction and operation cost
- Decreased interest in building new reactors
- Psychological impacts of evacuation

(Slovic, 1992)

Are you listening as much as speaking?

- Unless someone asks, don't give a lecture
- People have Qs for you!
  - if you don't listen you won't address their real concerns
- Engagement must be tailored to specific questions and the situation at hand
- Validate people's knowledge

Covello, V., & Allen, F. (1998). Seven Cardinal Rules of Risk Communication. US Environmental Protection Agency, Office of Policy Analysis.
Teräväinen, T., Lehtonen, M., & Martiskainen, M. (2011). Climate change, energy security, and risk—Debating nuclear new build in Finland, France and the UK. Energy Policy, 39(6), 3434–3442. https://doi.org/10.1016/j.enpol.2011.03.041

Trust is key

- We rely on heuristics to make up our minds all the time (yes, you!)
- We make up our minds based on people we trust
  - Know your public
- Public engagement alone does not guarantee support or trust
  - You can't ask for trust, you must earn it

Four Rivers Nuclear Partnership

Trumbo, C. W. (2002). Information Processing and Risk Perception: An Adaptation of the Heuristic-Systematic Model. Journal of Communication, 52(2), 367–382. https://doi.org/10.1111/j.1460-2466.2002.tb02550.x

Malka, A., Krosnick, J. A., & Langer, G. (2009). The association of knowledge with concern about global warming: Trusted information sources shape public thinking. Risk Analysis: An Official Publication of the Society for Risk Analysis, 29(5), 633–647. https://doi.org/10.1111/j.1539-6924.2009.01220.x

Sandman, P. M. (1993). Responding to community outrage: Strategies for effective risk communication. American Industrial Hygiene Association.

Mah, D. N., Hills, P., & Tao, J. (2014). Risk perception, trust and public engagement in nuclear decision-making in Hong Kong. *Energy Policy*, *73*, 368–390. https://doi.org/10.1016/j.enpol.2014.05.019

People generally perceive risks to be too high

- An informed and consenting population is a good thing!
- Do not argue that other industries “get away with” more accidents, death, environmental contamination so nuclear should too

Fischhoff, B., Slovic, P., Lichtenstein, S., Read, S., & Combs, B. (1978). How Safe is Safe Enough? A Psychometric Study of Attitudes Towards Technological Risks and Benefits. Policy Sciences, 9, 127–152.

Want to read more?

nuclearkatie.com/risk-reading-list