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The Evolving Field of Risk Communication

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Purpose of talk

- Provide a **selective overview** of the evolving field of risk communication

1. Based on our recent publication (Balog-Way, McComas, and Besley 2020)
2. Focused on the *pragmatic* function of risk communication
3. Not explicitly about radon, but strongly applies to radon risk communication

What is risk communication?

- "An iterative process among scientists and non-scientists about risk assessment, risk characterization, risk management and risk policy" (McComas, 2006)

- Includes purposeful and unintentional messages about risk;
- Is multi-directional;
- Encompasses verbal and nonverbal cues;
- Occurs at personal, group, organizational, community, and societal levels

Dispersed & interdisciplinary field

'Natural' Hazards

Climate Change

Environmental Degradation

Energy

Pharmaceuticals

Chemicals

Food Safety

Emerging Technologies

Arguments for risk communication

Normative

- No desired end result; Right thing to do in a democracy
- e.g., duty to inform (Fischhoff, 2011; Keohane et al. 2014)

Instrumental

- Tool or resource to help achieve desired results (e.g., change behavior, build trust)
- The end does not necessarily justify the means

Substantive

- Generates new insights and improvements in the quality of available knowledge by "opening up the framing and evaluation of decisions and options"
- e.g., public participation and deliberation

Messengers

- *"The individuals, groups, and organizations purposefully engaging in risk communication"* (Rickard, 2019)
- Trained pros + those that inherit the task "by happenstance or necessity"

1. Trust
2. Social media

Trust

- Plays a central role in virtually every context (Siegrist, 2019)
- V. important when knowledge of a hazard/activity/technology is low
- Audiences rely on **credible** sources to help inform risk judgments, preferences, and choices
- E.g., many COVID-19 studies correlated public trust with:

Perceived disease severity	Perceived virus transmissibility	Information seeking behavior	Willingness to adopt interventions (masks, distancing)

Evidence on building trust

- No simple one-size-fits-all solutions exist
- Vary approaches when trust is high or low
- Test baseline trust levels
- Develop long-term trusted relationships with key actors
- Design clearly structed risk communication systems
- Build baseline and surge capacities (e.g., trained messengers)
- Engage audiences in meaningful multi-way dialogue

Social media

- Different platforms allow for different effects, e.g., blogs, microblogs, video and photo-sharing websites

- Opportunities:
  1. Deliver messages faster to broader and more targeted audiences
  2. Open dialogue with audiences by using interactive features
  3. Facilitate substantive improvements in risk-related knowledge

Social media challenges

Mis-information: False info shared without intent to harm

Mal-information: Accurate info taken out of context with intent to harm

Dis-information: Knowingly false info shared with intent to harm

1. Compete for attention with near-instaneously distributed info (Rains et al. 2015)
2. Sharp rise in “fake news” (Mayorga et al. 2020)
3. False info spreads significantly farther, deeper, and more broadly, esp. “novel” info that evokes fear, disgust, and/or surprise (Vosoughi et al. 2018)

- But… audiences are not passive info recipients
- And…there is a crucial difference between audience exposure to info and attitudes/behavior

Message attributes

- “The qualities and inherent characteristics of verbal, written, and recorded risk communication” (Rickard, 2019)

1. Framing
2. Emotions
3. Uncertainty

Framing

- Plays a central role in all messages (Nisbet, 2015)
- Can fundamentally alter risk issues by setting the context
- Must draw relevant connections and have personal significance

	Examples of frames compared	
Psychological approach	Global warming	Climate change
	Fracking	Shale oil
Sociological approach	Distance	Closeness
	Environment	Humans
	Natural Radon Gas	**Indoor Air Pollution**

Emotions

- “Risk-as feelings” research recommends we attend to the affective and emotional components of messages (Slovic et al. 2004)

> “…people look to their positive and negative feelings to guide their evaluation of an activity’s risks and benefits” and “feelings serve as an important cue for benefit/risk judgements and decisions.” (Slovic, 2010)

- **-ve emotions:** fear, concern, anger (e.g., fear appeals)
- **+ve emotions:** happiness, amusement (e.g., humor)
- Narratives, storytelling, visualizations, interactive content

Uncertainty communication

- Beneficial for trust, transparency, legitimacy, and engagement?
- May do more harm than good? (Osman et al. 2018)

1. Most are not concerned about uncertainty communication *per se,* but the **current approaches** adopted by certain practitioners
2. Various forms of uncertainty must be recognized (Fischhoff, 2014)
3. No clear-cut or simple solutions (Bostrom et al. 2018)
4. Effects are strongly influenced by **how** info is communicated in the first place

Audiences

- “The various *intended* message recipients” (Rickard, 2019)
- Incorporates engagement through multi-way dialogue

1. Risk perception
2. Public engagement
3. Evaluation

Risk perception

- Messages are filtered through the receiving audiences' own selective lenses
- Risk perceptions are informed by technical, social, cultural, and psychological factors (Slovic, 1999)
- Preceded by bias + heuristics research (Kahneman & Tversky, 1974; Kahneman, 2011)

Natural vs Technological

Voluntary vs Involuntary

Familiar vs Unfamiliar

More Control vs Less Control

Dread Risk

Unknown Risk

Recent developments

1. **Role of affect and emotions:** Concern, fear, anxiety, amusement

2. **Personal factors**: Gender, race, age, political orientation, numeracy

3. **Motivated reasoning:** Individuals' cultural values and ideology may cause them to respond based on a salient identify

4. **Reactance:** Some persuasive messages may ‘irritate’ audiences causing them to react, e.g., by resisting recommended behaviors

Public engagement

Low involvement	High involvement
Filling in a survey Signing a petition	Attending meetings Board representative

Participants	Might feel they have little meaningful influence, or become disenchanted with “backstage” decision-making
Decision-makers	Can feel pressurized, reducing their ability to discuss sensitive or complicated issues
Organizers	Often require substantial multi-stakeholder commitments and capacities

Evaluation

- Messages designed through intuition alone can easily cause **unintended effects** (Salmon et al. 2014)
  - Draw attention to risky behaviors
  - Create unnecessary worry and confusion
  - Cause audiences to discontinue feeling concerned when they are in danger

- Evaluation is essential
- Does not have to be time-consuming or expensive
- Extensive guidance now exists (e.g., Fischhoff, 2019)

Final reflections

1. No simple or dominant formula for risk comm exists
2. Many concepts – like trust, transparency, and uncertainty – are **multidimensional**: they require more nuanced discussions than sometimes occur
3. Risk comm deserves meaningful **evaluation**, long-term **commitment**, and **perseverance**
4. **Interdisciplinarity** remains one of the field's greatest strengths
5. Policy relevance is central