

## Extreme Event Decision Making: Possible Themes for Discussion

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I have no experience in the field of extreme events research. I do, however, have a great deal of experience with respect to the application of scientific information and methods in a policy context. I am very interested in the “usability” of scientific data and information.

Several (overlapping) topics strike me as potentially fruitful themes for continued discussion:

1. Extreme Events and Epistemic Communities: Thomas Shelling once remarked that a critical element of any problem is what the problem is “seen to be.” For example, if we define a state of affairs as a “rural poverty” problem, a whole array of concerns, players, disciplines and methods of analysis, and agencies orient themselves accordingly. If we defined the same state of affairs differently – as a sustainability issue, as an economic development issue, or as an agricultural issue – then the composition and arrangement of players and disciplines would likely alter. The questions is: how do different epistemic communities form around different types of events? How does this constrain and/or enable extreme event planing and subsequent responses and actions?
2. Extreme Events and Frames of Reference: Neustadt and May’s classic, *Thinking in Time: The Uses of History for Decision Makers* explores how the initial characterization of an event can have a dominating and lasting influence on how it is subsequently analyzed and addressed. Neustadt and May focus heavily on the role of historical analogies. Similarly, Donald Schon has written extensively on the pivotal importance of metaphors with respect to problem formulation. Analogs and metaphors serve to bound our frames of reference, effectively “admitting” some types of response strategies and excluding others. It strikes me that historical analogs and metaphors may play a tremendously important role in extreme event response strategizing and planning. Maybe extreme event response plans can be formally reviewed and evaluated to identify the presence of “captivating analogies” and “generative metaphors.”
3. “Sense Making” and Extreme Events: What happens when confusion reigns and things simply stop *making sense*. Drawing on Donald Schon and Donald Campbell, Karl Weick has written persuasively on how extreme situations can fracture the structures and procedures that underlie an organization’s ability to understand or make sense of its environment. When events outpace or diverge from experience, an individual or group may lose its grasp on contextual rationality. This prompts Weick to recommend that groups be made more resilient, emphasizing the importance of factors such as improvisation, wisdom, respectful interaction, and communication in the form of “nonstop talk.” What is *contextual rationality* and can the concept be operationalized for use in extreme events research and/or planning?
4. Learning from Professions in Which the Extreme is Routinized: Fire fighters; air, sea, and mountain rescue units; the Red Cross; and military special forces units deal with extreme events

on a routine basis. Are organizations that deal with extreme events structurally or functionally different than organizations that deal with more pedestrian issues? Do such organizations share structural, functional, procedural, or hierarchical characteristics?

I was recently involved in a project that explored and assessed the use (and abuse) of models in environmental decision making. In my view, the question of models is merely a specific instance of a more generic issue, that being, the role of scientific findings and information in environmental decision making. The following citations may be relevant to discussions of extreme events.

Herrick and Sarewitz, 2000, "Ex Post Evaluation: A More Effective Role for Scientific Assessments in Environmental Policy," *Science, Technology and Human Values* Volume 25, No. 3. Pages 309-332.

Herrick and Pendleton, 2000, "A Decision Framework for Prediction in Environmental Policy," IN Sarewitz, Pielke, and Byerly (eds.) Prediction: Science, Decision Making, and the Future of Nature Washington, DC: Island Press. Pages 341-361.