

Hal R. Arkes
Department of Psychology
Ohio State University

I am interested in two main aspects of decision making in extreme events: decision support and hindsight bias.

Decision Support

In 1986 Robyn Dawes, Caryn Christensen, and I published a study which documented experts' unwillingness to use a simple decision aid. As I have gotten more involved in medical decision making, I have continued to be struck by experts' reticence to use decision support systems. In emergency or extreme situations, such systems might be particularly useful, because the algorithms to be used in such situations have already been developed in a time of less urgency. Therefore one would assume that such aids would contain some of the wisdom less likely to be invented de novo in a time of greater urgency. Nevertheless professionals are reluctant to rely upon them. One reason, among many we have considered, is that experts do not like to have their flexibility constrained by such aids. The experts want to be maximally responsive to various aspects of the situation, and they perceive decision support systems as taking away some of their autonomy to respond in any way they see fit. As we have seen in Chernobyl, decision support systems often provide important information which should not be overridden by human intervention.

In pilot work we have conducted, we have found that legal liability may be another factor in restricting reliance on decision aids. For example, some physicians think that if they use a decision support system and things go awry, they will be more likely to be held legally responsible for the bad outcome than if they used their own unaided professional judgment. Fear of being blamed for relying on an impersonal and inflexible aid rather than using one's personal shrewdness motivates "creative" but less effective responses to urgent situations.

Therefore one area of research is the discovery of what factors might foster the use of helpful decision aids. The medical informatics literature does provide some guidance as to what factors might be likely to foster the use of decision aids in medical

situations. It might be possible to adopt some of those suggestions to extreme event situations.

Hindsight Bias

After some disaster occurs, the post mortem analysis generally identifies some culprit who should bear responsibility for the unfortunate outcome. Of course, the culprit is so obvious in hindsight one wonders how the culprit could have escaped notice in foresight.

I am aware of two studies whose results suggest that a person is far more likely to be blamed for unfortunate events than the systems or management practice which strongly influenced the person's behavior. I think is due to the fact that we believe that human behavior is malleable, whereas the machinery, policies, and "background factors" within which a human operates are seen as less malleable. This propensity to blame the person rather than other potential causes may also be related to the fact that the human is literally the "figure" in the "figure-ground" composite which is examined by the "fact-finding" committee. Also, the "sharp end" of the decision making apparatus, to use Reasons' term, is easier to locate than the "blunt end" contributors. ("Who instituted that dumb policy anyhow?") In order to learn from our mistakes and to be ready for the next extreme event, it is essential to examine the true causes in as unbiased a manner as possible. Therefore diminishing the hindsight bias and refraining from blaming the person at the sharp end are two ways to improve the retrospective analysis of our responses to prior extreme events. Should we be successful in these tasks, we will be better able to respond to the next instance of that extreme event.