

## Uncommon Sense

By Dave Person

The hunter pounds his gnarly hand down on the counter. "I'm a logger", he says, "and these damn scientists or so-called experts don't have no common sense. They got to understand that we have to balance cuttin' trees with protecting dicky birds or whatever." The smiling politician announces, "My bill will balance the needs of local communities with protecting the environment. It is just plain common sense." The government bureaucrat tells the panel, "The only common sense solution is to balance the needs of consumptive and non-consumptive users of the resource. For that we need consensus between stakeholders." Common sense, balance, and consensus - buzzwords that help people convince themselves and others that they understand the issues and are making good decisions. The trouble with common sense is that it is all too common and often does not make any sense. Einstein defined it as the collection of prejudices we all acquire before age 18. The problem with balance is that neither side can gain any weight, and balance points, like beauty, are in the eye of the beholder. The trouble with consensus is that agreement to do the wrong thing is worse than no consensus at all. You are just going downhill faster while holding hands.

Perhaps before anyone sanctifies the presumed wisdom and correctness of common sense, balance, and consensus they should read Dietrich Dörner's book "*The Logic of Failure: Recognizing and Avoiding Error in Complex Situations*". It is invaluable reading for all natural resource policy makers, managers, and scientists and is a natural complement to Holling's book "*Adaptive Environmental Assessment and Management*" and Walter's "*Adaptive Management of Renewable Resources*". Dörner is a professor of psychology and director of the Max Planck Institute program of cognitive anthropology in Berlin, Germany. For over 20 years, he focused on the psychology of decision making with the goal of improving how people think about and address difficult and complex problems. He used computer-simulated scenarios that involved social, environmental, and economic factors similar to the computer game, SimCity, to explore how people singly or in groups performed solving problems. His results were an eye-opening expose' of how ill equipped most people are to think about and manage complex situations.

To put a real-world face on the problem, he described the decisions and actions of the engineers responsible for the Chernobyl nuclear power plant disaster. That event did not result from poor reactor design, lack of safety procedures and backups, or incompetent personnel. It happened because intelligent, conscientious, and well-trained engineers made a series of small but rational errors that ballooned into a catastrophe they did not see coming. They did not comprehend the magnitude of the nonlinear dynamics associated with reactor operation and dismissed small deviations from normal readouts on their instruments as unimportant. Any one of those anomalies would have been insignificant had it occurred in isolation but they all were linked in a time-series of events that went unrecognized by the engineers. They paid for their mistakes with their lives and the lives of many others.

Dörner argues that evolution has not endowed most humans with an inherent capacity to deal with complex nonlinear problems, particularly those that require long periods of time to recognize and resolve, or that do not fit within our simple preconceived notions of how things should work. Our ancestors were mostly concerned with day-to-day issues such as where to find food or how to avoid predators. That narrow, short-term focus served them well as long as their ecological footprint was small. Now, however, the ecological footprint of modern man is huge and we must manage complex problems that involve whole ecosystems and even the entire planet.

Dörner believes that we must learn how to think about those issues before we can deal with them. His book is not comfortable reading. Indeed, I recognized myself in some of his descriptions of people who performed poorly during the experimental simulations. Common

sense, notions of balance, and consensus do not guarantee good decision making. One person mentally equipped to address complex problems is far more valuable than a gaggle of stakeholders who are not.

As Dörner describes, good decision makers identify clear goals, are not constrained by dogma or overly simplistic ideas about the systems they manage, often make many decisions and corrections rather than "muddling through" with the same strategy, address the important problems affecting their systems rather than only addressing those they think they can solve, and learn from their mistakes. They also know that within complex systems they cannot do just one thing because all the components of the system are connected and they understand that most "solutions" are really tradeoffs that often have unintended consequences. They know their decisions merely define one of many possible paths upon which an inexorable chain of events will unfold. Good decision makers realize that most of their decisions will eventually need modifying, and consequently, they frequently monitor the results of their actions. So next time some policy maker, group of stakeholders, or politician confidently announces that they have devised the "win-win", balanced, or common sense solution to some complex environmental problem, offer them the following advice from Brecht and Weill's *Threepenny Opera*:

*"Go make yourself a plan  
And be a shining light.  
Then make yourself a second plan,  
For neither will come right."*