

## A Citizen's View: The Nuts and Bolts of Co-Partnerships

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Table shapes, seating assignments, and Stone Soup analogies aside, Ms. Raffensperger's message in "Guess Who's Coming For Dinner: The Scientist And The Public Making Good Environmental Decisions" boils down to a well-founded recommendation to the National Research Council to extend its work, *Understanding Risk*, with a subsequent compendium, in which scientists, bureaucrats, and members of the public collaborate as true partners in the process of addressing the twin issues of scientific uncertainty and risk reduction.

As a person born and raised in a heavily radiation-exposed community adjacent to a major nuclear weapons facility, now considered one of the most polluted places on earth, I have attended endless meetings of the sort described by Ms. Raffensperger. Oftentimes, risk assessment forms the primary focus of discussion while a disenfranchised public listens to endless, complex bureaucratic and scientific monologues. While attempts have been made, of late, to hold public meetings in which scientific agendas are defined with public involvement, public attendance at these meetings has been disappointing. Public involvement and the sort of "partnership" advocated by Ms. Raffensperger truly require an examination of the factors which will facilitate establishment of a trusting relationship between the parties she envisions "coming for dinner" to make good environmental decisions.

Ms. Raffensperger advocates a very important shift of focus toward risk *reduction*, rather than risk *assessment*, in this new process for scientists, decision-makers and stakeholders. She discusses in detail the elements of Funtowicz and Ravetz's "post normal science," concentrating upon risk *prevention* rather than risk *characterization* (Funtowicz and Ravetz 1993).

Yet, lacking within this meaningful discussion, I feel, was an examination of the true, down to earth, "nuts and bolts" challenges to attainment of meaningful co-partnership among scientists, bureaucrats, and the public in decision making with regard to environmental problems with high societal stakes. As a citizen and person believed to have been significantly harmed by the radioactive toxins of a major nuclear weapons facility, allow me to bring to this discussion the wisdom (which the author herself describes in her article) of the citizen, "the wisdom and ethics of place."

### Understanding Harms to Stakeholders

This is one of the primary points made in the NRC book, *Understanding Risk*. What does this really entail?

First, it requires truly *LISTENING to the public*. This is not as easy as it may seem. For, "the public" is a broad-spectrum group consisting, potentially, of everyone and anyone—from people with very little education and a whole lot of life experience, to those with advanced training and very little of the coping skill it would take to survive in the very neighborhoods adjacent to the toxic exposure site in question. That is to say, the highly trained, Ivy League epidemiologist brought in to deal with public health impacts at a site of known or unknown radioactive or chemical exposures (often located in close proximity to neighborhoods largely populated by urban poor and minority group members) may well find him/herself faced with an inter-cultural experience of monumental proportions. Not even the Stone Soup referenced by Ms. Raffensperger could ease the extreme cultural adjustment required in such a situation.

So as Raffensperger, the NRC, and others easily recommend that scientists and bureaucrats adjust their thinking so that they function as co-partners with the public, they must think carefully through the realities of what they are suggesting. For, to function as a co-partner, the scientist or bureaucrat must be willing to:

- (1) abandon the use of scientific jargon to which he or she has become firmly wedded over the years, the use of which may have to that point provided for that person a sense of self-importance and academic superiority;
- (2) listen to angry outbursts and seemingly personal verbal attacks by members of the public who have been hurt by toxic exposures and who feel betrayed by their government, without taking these attacks personally;
- (3) listen to input from members of exposed communities which may be disjointed, difficult to understand, or otherwise may seem never to get to the point;
- (4) explain scientific principles in ways understandable to the lay public;
- (5) attend meetings in locations and at times convenient to members of the public (not, for example, during times convenient to one's own work schedules, which may conflict with work hours of public members);

(6) spend some time socializing at meetings, for this is of extreme importance in establishing and maintaining comfortable rapport;

(7) honestly feel in his or her heart that the public members “at the table” are equal partners in this process. This will require, for many, leaving learned prejudices behind.

Second, it requires understanding the full range of actual and perceived harms. Ms. Raffensperger and the NRC’s *Understanding Risk* both point to the importance of understanding the full range of harms suffered or perceived as suffered by the public. This understanding is essential to application of either of the alternatives to risk assessment proposed by Ms. Raffensperger and others: alternatives assessment and the precautionary principle.

Alternatives assessment requires, much like an Environmental Impact Statement under National Environmental Policy Act (NEPA), that all alternatives, including the “no action” alternative, be considered prior to a proposed action going forward. This approach, according to the author, offers an opportunity to avoid risk, rather than simply to manage it.

Some, in fact, consider alternatives assessment a method for implementing the precautionary principle, which says, in the face of scientific uncertainty, and with likelihood of societal or environmental harm, to act with prudence and caution.

Both of these approaches, which emphasize risk reduction rather than risk assessment and management, require scientists and bureaucrats, as equal partners at the table with public members, to gain a comprehensive understanding of the actual and perceived harms to the community in question.

These harms may be communicated by the public in indirect ways, or may need to be pulled out of lengthy dialogue or repeated meetings. The process may be slow and possibly painful for scientists and bureaucrats not experienced in this sort of public interaction. From my own experience as a person harmed by toxic exposures, and from the insights I have gained from extensive dialogue from others in my situation, the losses and harms which the public may suffer in toxic exposure scenarios include:

(1) *physical harm*: disabling illness (acute or chronic); terminal illness (e.g., cancers); physical disability (e.g., birth defects in offspring); concern over occurrence of physical disability in future generations due to exposure-caused genetic damage;

(2) *psychological/ psychiatric harm*: clinically diagnosed depression, affective disorders;

(3) *economic harm*: decreased income-producing potential due to disability, chronic illness, mounting medical bills (particularly if a family member is undergoing chemotherapy or radiation therapy), loss of employment due to extensive sick time, leading to inability to pay bills, possible loss of

home, possessions, and resulting harm to self-esteem, and standing in the community;

(4) *community harms*: plunging property values due to presence, whether perceived or real, of toxins, within community; ostracism of the exposed community by surrounding, non-exposed communities.

### Keeping Promises Made

Understanding the harms of stakeholders involves, as well, responding to expressed needs, and establishing trust between “co-partners,” scientists, bureaucrats, and public members. An issue not addressed within Ms. Raffensperger’s piece is the importance of scientists and bureaucrats offering meaningful feedback to expression of community concerns and keeping promises made.

Time and time again, at meetings with bureaucrats and scientists in attendance, I have heard angry members of the public ask: “Why should we believe that anything is going to happen after this meeting? Why should we believe you are going to do any of the things you say you are going to do? You always come and have these meetings and then go away and nothing happens.”

The importance of follow-through on actions promised is paramount. In order to establish trust, government agency representatives and members of the scientific community often need to overcome the poor track record of those who have been there before — agency representatives and “experts” who have promised to take action or have promised community members that change would ensue, but who never followed through with those promises. Trust with community members, for this reason, may be extremely difficult to establish.

### Consistency of “Co-Partners”

One aspect of the application of alternatives to risk assessment (i.e., alternatives assessment and precautionary principle) and an important element of the successful application of these approaches, is the need for consistent, long-term representation by the scientific and governmental representatives at a site.

While it is understood that professional and career responsibilities change, it is of utmost importance that those working as co-partners under the risk reduction principles espoused by NRC and Ms. Raffensperger do not suddenly “disappear” from the “team” gathered at the table. Unfortunately, it is frequently the case that public members receive letters from government agencies or other sources, bluntly notifying them that the people they have gotten to know over the months or years, the very people they have just

begun to trust, have moved on to new jobs, have suddenly been replaced by new people, people who may have very little knowledge of the community, of the expressed concerns of the public. Public members of the “team” at the table are not given any choice in this matter, not given the opportunity to make this a “team” decision. Rather, they are just told after the fact that the switch in personnel is a “done deal.” This is extremely destructive to the all-important process of work as “co-partners,” a process which requires time, trust, and investment by all co-partners in the process.

Instead, members of the “team,” upon becoming aware of a possible need to end involvement at a particular site, should give advance notice, thus allowing a smoother transition to their replacements and a new representative to gain early knowledge of the community’s concerns.

### **Risk Reduction and The Role of Scientific Uncertainty**

The precautionary principle states that, in the face of scientific uncertainty, and with likelihood of societal or environmental harm, the “co-partners” at the table should proceed with caution and prudence. Ms. Raffensperger defines the “fulcrum” of this principle as scientific uncertainty. She thus differentiates this principle of risk *reduction* from risk *assessment*, where certainty is sought before action can be taken. In contrast, risk assessment results in action *before* certainty is in place, if there is a possibility of substantial harm.

What exactly *is* “scientific uncertainty?” We, as members of the public at toxic exposure sites, are often told that many of the harms about which people are concerned will not be measurable by scientific criteria even though they are of great importance to people exposed at the site.

We are told that reconstructed “doses” of substances to which we were exposed are not really definable. Rather, they fall within an “uncertainty range,” which can often cover a very wide range of potential exposure, causing in and of itself, a great deal of worry over health outcomes of these exposures.

Explaining this concept of scientific uncertainty, especially when that uncertainty is great and public concerns are high, requires true team work on the part of scientists, government representatives, and the public. This makes the establishment of trust, through the principles discussed

above, and the open, extensive discussion of the harms of the exposed community, even more important to a successful effort at risk reduction, as advocated by Ms. Raffensperger.

### **Conclusions**

Ms. Raffensperger is on the right track in her advocacy for a turn away from risk analysis, which she pegs as a gamblers’ term, towards environmentalists’ preferred approaches of risk reduction and prevention, which she favors as common sense approaches.

Risk assessment, in Ms. Raffensperger’s view, can’t handle the values part of decision making; the concerns of real importance to the community which may not be measurable by scientific criteria. She and the NRC recommend that all relevant losses be considered in order to evoke true risk reduction rather than mere assessment without reduction of risk.

In my humble opinion, as a citizen, the table can be round, the table can be square. It is the willingness of those at that table to treat each other with respect and as equals which is what really counts. And, the Stone Soup will indeed feed the entire town if each contributor to the final product listens well to what the others bring to the mixture. Many meals must be taken together, for risk reduction is not the product of just one gathering, nor of uni-directional information flow. Upon consideration of all the essential elements requisite to true team collaboration, Ms. Raffensperger’s suggested title for a follow-up compendium by NRC, to its *Understanding Risk*, might be rephrased: “Beyond Risk Analysis: Scientific/Governmental/Public Collaboration Towards Effective Risk Reduction and Elimination.”

### **Endnote**

1. Currently, I am also a member of the Hanford Health Effects Subcommittee and Lawrence Livermore National Laboratory ATSDR Site Team.

### **Reference**

- Funtowicz, S. O. and J.R. Ravetz. 1993. Science for a post-normal age. *Futures* 25(7), 735-755.