Learning Through Participation

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In this short response to Carolyn Raffensberger's piece, I would like to pick up on the theme of learning. I strongly agree with Carolyn that all the participants in analytic-deliberative decision making processes should be given "new job descriptions and read from different scripts" and that "rather than characterizing risk we should strive for learning and problem solving." While she ends up focusing on scientists as needing to be co-learners and co-problem solvers, really we should pay attention to the roles and responsibilities of all participants: scientists, government agency staff, employees of corporations, and members of multiple publics (the "lay people"). I think it is also important that we consider the scale at which learning occurs and the content matter learned. I will briefly elaborate on these two points.

First, *Understanding Risk* identified learning at various scales: individual, group, institutional and, what we might call generally, societal. For example, the report discusses "building organizational capacity" necessary to implement analytic-deliberative processes (National Research Council 1996, 150-155). Societal learning occurs when we collectively learn and incorporate those lessons into how we do things on a macro scale (across multiple institutions, groups, and individuals). Recent research has addressed the issue of learning at all of these scales within the arena of environmental and risk policymaking (Chess et al. 1995, Laird 1993, Webler et al. 1995, Wynne 1992). An even larger body of literature and research exists about learning in other policy arenas.

Second, I also think that we need to pay more close attention to *what* we are learning. Substantive issues are important to any decision-making process. We engage in this type of learning when we ask, What are the technical issues? What is my vision for a future? What values are important to my community? Associated with substantive learning are the skills and practices related to how we do things: skills of problems solving, skills of argumentation, processes for doing "good" public involvement and collaborative decision-making.

This characterization of learning provides me the opportunity to introduce yet another taxonomy into the world. It is summarized in Table 1. The taxonomy is defined by *who* learns and *what* is learned. Illustrative examples of the types of learning for each category are given. There is no room here to elaborate on the issues, opportunities, and difficulties associated with learning about substantive issues and process skills at each level. A diverse literature addresses many important issues that are worth exploring as we experiment with new ways of responding to the challenges posed by the *Understanding Risk* report, Carolyn Raffensperger's paper, and the commentaries featured in this Forum. As a small contribution to that effort I would like to present some insights that we can gain about how individuals might learn by *participating* in activities. To me, this is an important line of (applied) research because analytic-deliberative decision-making processes provide opportunities for all participants to learn by doing. These opportunities have not been fully taken advantage of by practitioners or participants.

Table 1
Types Of Learning In Deliberative Policy Making Processes.

Who learns	What is learned	
	Substantive	Interactional
Individual	what is my opponent's interpretation of the data?	how can I make a forceful argument for my perspective?
Group	what are the primary values guiding our vision?	how can members be motivated to participate?
Institutional/ Organizational	what are the interests and values of different stakeholders that ought to inform this policy decision?	what are the best ways to structure meetings for gathering and evaluating all relevant information?
Societal	what are the implications of this issues (e.g., clean-up of a nuclear weapons facility) on other issues (e.g., safety of radioactive materials transportation)	what are the lessons for designing processes for shared decision making in other policy arenas?

While individual learning has been discussed in literature on environmental and risk policy making, the focus is generally on the substance of the issue (i.e., what the controversy is about or what people know about the issue) (Gale 1983, Laird 1993, Sinclair and Diduck 1995, Tuler 1995, Webler et al. 1995, Wynne 1992). Rarely discussed is the issue of learning the skills for discourse or thinking (Hartley 1998, Laird 1993, Webler et al. 1995). Moreover, even if such learning is mentioned, there is no discussion of the socio-psychological mechanisms by which it occurs.

One approach to study this issue is provided by socio-cultural psychology. A central claim of socio-cultural psy-

chology is that human action cannot be analyzed by reductive approaches that isolate individuals from the means by which individuals carry out an action (Wertsch 1998). How people talk, their problem-solving methods, the "frames" they use to represent and interpret phenomena, and other such mental functions must be understood as dialectical processes, between the means people have at their disposal for accomplishing these mental activities (e.g., particular languages, mental frames, etc.) and their unique use in specific interactions.

The unit of analysis in the socio-cultural framework, the person *and* the cultural tool, is based on the claim that actions, means, and goals are interconnected. Cultural (or psychological tools) mediate human mental action, in much the same way that technical tools mediate forms of physical activity (e.g., a lawn mower mediates the activity of mowing a lawn). For example, frames or worldviews can be understood as a type of cultural tool.[1]

Cultural tools do not by themselves *determine* action. They mediate an active process that is based on *use* of a cultural tool in an instrumental act. In this sense they are the means by which mental action is mediated. People are neither viewed as passive sponges who are deterministically controlled by their environment, nor are they viewed as atomistic, masterful selves in total control of their interaction with the environment. Instead, cultural tools can both empower and constrain human action.

In elaborating these claims, Wertsch suggests that individuals generally have access to a set of cultural tools, a tool kit, if you will. They draw on this resource to achieve a goal. Individuals select cultural tools, for example, when plotting an argumentative strategy in a dialogue. The use of one cultural tool, for example, does not imply that others are unavailable. Certain cultural tools may be viewed by particular individuals as more or less appropriate, given the context. Another way to say this is that these tools have a normative character with respect to specific social, cultural, institutional, or historical settings. This does not imply that selecting from one's tool kit is always an active choice. Often the selection can be made unreflectively. In fact, cultural tools can be invisible to individuals who use them. For example, language and stereotyping frames are often treated as existing independently and abstracted from human use (Wertsch 1998). People also can privilege some tools over others. Privileging is related to the organization of cultural tools in some type of socially learned hierarchy (Vygotsky 1986). Moreover, the issue is not one of truth, accuracy, or efficiency. Instead, patterns of privileging can also reflect how an individual defines a situation or activity, including patterns of interest, power, status, and authority.

Vygotsky argued that two levels of social interaction are important for an individual to internalize or master a cultural tool. The first level has been termed the "interpsychological" or "intermental." Here, communicative behavior occurs during concrete social interactions. These social processes are found in interactions among small groups of individuals. The second level is more impersonal. Interaction here is embedded in the social-institutional context in which an individual finds him/herself (e.g., private religious school, university classroom, state legislature). These include, for example, historically situated patterns of interaction which "operate independently of individual human plan or volition" (Wertsch 1985, 60).

Mastering and employing cultural tools can become more conscious activities. This leaves open the possibility that self-regulated, reflective change is possible. Viewing participation in deliberative policy making in this way (as a socio-cultural activity) opens the way to address how individuals may learn to interact (i.e., deliberate) in the practice of an activity (Rogoff 1995, Vygotsky 1986, Wertsch 1990, Wertsch and Minick 1990).

Conclusions

By viewing participation in deliberative policy making as a socio-cultural activity, a way is open to address how individuals may learn to interact, think, and represent issues through their participation. I would want to go even further — this framework suggests that a goal of discursive policy-making processes should be to provide opportunities for learning of different sorts by the participants (i.e., thinking and argumentation skills, substantive issues).

Similar needs and opportunities for learning exist at group, organizational, and societal levels, as well. For example, organizations can learn how to conduct participatory processes by careful evaluation, both during and after the implementation of a process. Different theories and methods can be brought to bear about how to conduct such evaluations (Tuler and Webler 1995). Of course, while policy processes based on deliberative models can seek to facilitate learning, they may not always be successful. Nothing will ensure that participants learn about how to act in concrete, dialogically situated interactions, but attention to the micro-details of talk can prepare people for the opportunities and barriers to a successful deliberative policy making processes. Nothing will *ensure* that organizations conduct useful evaluations or apply their lessons, but integrating opportunities for "real time" reflection can increase the likelihood of identifying ways to improve people's participation and process outcomes. Complexity and barriers to success do not mean impossible.

There is much room for improvement in the way that deliberative processes are designed and implemented. A focus on the processes of learning provides another avenue for improving their performance.

Endnote

1. Examples of environmental discourses that function as cultural tools are described by John Dryzek in his recent book *The Politics Of The Earth: Environmental Discourses* (1997) which I have reviewed in this issue of Human Ecology Review.

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