

“Invisible People, Invisible Risks” ...right here in Madison!

In the new MIT Press book, *Technoscience and Environmental Justice: Expert Cultures in a Grassroots Movement*, the Midwest Environmental Justice Organization (MEJO) chronicles its Madison effort to raise local awareness of toxins in locally caught fish and the two-year odyssey to convince public officials to place fish consumption advisory signs at popular shoreline fishing spots.

The story is chronicled in the chapter entitled, “Invisible People, Invisible Risks: How Scientific Assessments of Environmental Health Risks Overlook Minorities—and How Community Participation Can Make Them Visible” by Maria Powell, PhD and Jim Powell, with Ly V. Xiong, Kazoua Moua, Jody Schmitz, Benito Juarez Olivas, and VamMeej Yang.

Excerpts from the book:

“In this chapter, we describe our work with MEJO to make these disparities more visible in public health agency risk assessments related to subsistence fish consumption. We describe how knowledge and communication gaps related to fish consumption risks are created and ignored by the same institutions that have power and responsibility for addressing them. We also highlight the obstacles MEJO has faced in bringing these gaps to light in institutional risk assessments, including: societal deference to what is perceived as more “valid” risk assessments of institutional experts, the parallel belief that local knowledge and community-based knowledge about the risks are less “factual” and therefore not valid evidence, and systemic indifference among institutional and political actors about class, race, and cultural contexts and how they are connected to environmental health risks.”

“MEJO discovered “knowledge gaps” in data about toxins in Madison lakes’ fish, fish consumption levels, body burdens, potential health effects, and communication and knowledge about who fish advisories are reaching.”

[One striking example is the very small number of fish—478 over a 32-year period—that have actually been tested in Dane County waters. Even with this low number of samples, there is concern.] “Levels of PCBs in Madison lake sediments and fish are also within the range in which people should carefully follow advisories. The Madison fish tested ranged from 0.05 to 0.46 ppm PCBs, and some fish had levels higher than this. The EPA recommends that to avoid “noncancer endpoints” (immune, reproductive, neurological problems), people should consume no more than half a fish per month with 0.19 to 0.39 ppm PCBs and no fish over 0.39 ppm PCBs. To avoid “cancer endpoints,” the EPA recommends that people eat no fish that contain over 0.097 ppm PCBs, and only half a fish per month in the 0.048 to 0.097 ppm range—which would include all the fish tested in the Madison lakes.”

“Mass media also play important roles building anglers’ and the broader community’s awareness of fish consumption risks and the political will to address them. In part reflecting local institutions’ lack of attention to toxins in Madison lakes and fish, these issues have not been priorities for local media. Although declining water quality in Madison lakes has been a frequent theme of local media stories in recent decades, from 1989 to 2008 only 4 percent of 222 articles in the two local daily newspapers that were about the water quality of Madison lakes referred to toxins other than those associated with increasing nutrient loads in the lakes.” “In its first two years (2006–2008), MEJO held over thirty group meetings, organized ten ‘Let’s Talk Fish’ meetings, and held eleven public outreach events. MEJO has presented at several conferences, including the 2006 “Finding Solutions to the Global Mercury Crisis,” an international conference in Madison concurrent with the Eighth International Mercury as Global Pollutant conference. MEJO members presented an outdoor workshop, ‘Minority Angling in Urban America,’ at Monona Bay during the conference, where sixty participants (including scientists from both conferences) ate a traditional Hmong fish dinner cooked by

community members. Leaders in the group have organized more than ten meetings with MEJO members and public agency representatives and political officials. Our members and student volunteers have surveyed more than 275 people, primarily lower-income and minorities, about fish consumption and advisories in parks, along shorelines, in food pantries, at public meetings and events, and door to door.”

“MEJO members completed more than 125 fish consumption surveys, primarily among minority and/or low-income anglers (published in the 2008 report *The State of Shoreline Fishing in Dane County*). Our data show that the levels of fish consumption among some minority, poor, and subsistence anglers range much higher than advisories recommend. Many minority survey respondents to date, for example, have reported eating fish every day or several times a week (recall that most Madison fish fall within two to four meals per month). Contrary to the assumptions of agency officials, a considerable portion of these anglers are not strictly eating panfish and other smaller, less contaminated fish. Many report regularly eating bass, carp, catfish, buffalo, walleye, and other larger fish that tend to have higher levels of mercury, PCBs, and other contaminants.”

“These results illustrated to us how important it is to assess actual fish consumption among specific groups and not assess risks based on averages or assumed fish consumption levels. Some groups eat far more than average. If risk assessors do not know the range of fish consumption among different anglers, they cannot identify those most at risk, communicate with them about ways to reduce or avoid these risks, or involve them in decisions about how to best address them.”

“MEJO’s participatory methods suggest the possibility of creating knowledge about fish consumption and fish advisories that can address the gaps that currently plague regulatory agency practices. Yet MEJO’s research and organizing work have found that understanding and communicating risks to minority and poor subsistence anglers who fish from local lakes have not been priorities for government agencies and academics in Madison, despite the numerous political and scientific resources in this community.”

“How can very visible minority anglers be so “invisible” to academic and government scientists and officials? Many minorities fish daily from highly visible shoreline spots in Madison, just blocks from government agencies responsible for fish risk assessments and advisories. When asked why there are not more data on fish contaminants or consumption levels among Madison anglers, a common answer from government scientists we found was that “nobody eats very much of the fish” and/or “they only eat the small fish.” Yet there is little evidence for these assumptions.”

“MEJO’s interactions with agency and academic actors suggest that the apparent invisibility of these anglers is rooted in deep institutional “blindness” to Madison’s race and class disparities, as well as to the diverse cultures and contexts of nonwhite people in the community. Government institutional cultures, we found, do not “see” minorities and poor for reasons that mimic long-standing patterns of institutional racism in the United States.”

“One year later [after MEJO’s initial attempt at public fish consumption advisory signs failed], a county supervisor, the only person of color on the county board, contacted MEJO after seeing an article about our work in a local minority paper by one of our volunteers. That supervisor expressed interest in submitting a county resolution to install fish advisory signs. With MEJO members, the supervisor co-wrote a resolution that described disparities in fish consumption and advisory awareness and required the county to place advisory signs in Spanish, English, and Hmong at popular shore fishing spots. The resolution also required that in developing the signs, agency officials’ work with environmental justice organizations and communities of color to determine where to post the signs and what should be on them.”

“The county officials’ reception of the resolution further illustrates the problem of invisibility in risk-assessment and communication practices. In this case, shortly after the supervisor introduced the resolution, county agency staff drafted a substitute resolution that removed almost all of the original language (374 of the original 426 words). Their resolution removed the terms minority, low-income, and of color, plus all the text about data gaps and unknowns, and replaced them with text from general state fish advisories. Moreover, the substitute resolution significantly weakened the action items in the original resolution (see Appendix I).”

In debating the resolutions, one local watershed authority said, “he favored the substitute resolution without the social and environmental justice language because the watershed commission ‘doesn’t deal with social justice issues . . . we just deal with water quality issues.’ The substitute resolution was quickly adopted by the commission without further opportunity for MEJO to comment. Similarly, at a later meeting with public health officials—one at which minority anglers again spoke about disparities in fish advisory outreach and awareness as important ethical and racial justice issues—a high-level state public health official and renowned national expert on fish consumption advisories said he did not want to bring environmental justice into this because it was ‘just a communication issue.’”

“In sum, MEJO’s interactions with agency experts—many of whom are the key actors in government decisions about fish consumption risk assessment and communication strategies—revealed the agency experts’ limited understandings of the connections between racial and class disparities and environmental health issues. It is notable, for example, that two established white professional agency representatives (senior-level scientists with doctorates) felt comfortable explicitly stating in public meetings that race and class disparities in fish advisory awareness are not relevant for the watershed commission or the public health department, especially with people of color present who testified about their community’s concerns about water pollution and fish toxins, and their lack of awareness of fish advisories. That racial disparities remained invisible to agency experts presented a significant obstacle to MEJO’s attempts to see the knowledge of minority groups represented in agency decisions.”

“Specifics in the Dane County fish advisory debates illustrate how scientists’ high status can preserve knowledge gaps and, in turn, justify inaction on environmental health concerns. Omitting statements in the original county resolution related to unknowns about environmental impacts of pollution on low-income and minority citizens, lack of data collection, and lack of consideration of these populations in determining public policy, for example, reflected authorities’ reluctance to acknowledge that they had not researched these issues.”

“In spring 2009, MEJO worked pro bono with the public health department staff to develop a shoreline angler survey in three languages to evaluate the efficacy of the signs (one of the conditions placed on funding the pilot sign project by agency officials who resisted the project). In the summer and fall of 2009, MEJO helped train interviewers and conducted about 150 surveys with shoreline anglers in English, Hmong, Laotian, and Spanish. Public health staff did about 50 more interviews. MEJO’s citizen scientist (Maria Powell) analyzed the quantitative and qualitative results and submitted them in a report to the public health agency in December 2009.”

“The survey results supported previous evidence we and others have gathered on consumption and awareness disparities (e.g., minority shore anglers eat significantly more fish than white anglers and are less aware of advisories)—but also provided useful information on where different kinds of anglers tend to get information about fish and what kinds of information they prefer. The signs are inspiring conversations and questions among shoreline anglers and others who spend time at the lakes about fish consumption risks, causes of water pollution, and ways to get more information and get involved. Most importantly, the interviews showed that shoreline anglers felt the signs were very useful for easily accessible and understandable fish consumption advice. Many anglers suggested that more signs be posted.”

Technoscience and Environmental Justice: Expert Cultures in a Grassroots Movement

Edited by Gwen Ottinger and Benjamin Cohen Afterword by Kim Fortun Cambridge, Mass.: MIT Press ©2011

Over the course of nearly thirty years, the environmental justice movement has changed the politics of environmental activism and influenced environmental policy. In the process, it has turned the attention of environmental activists and regulatory agencies to issues of pollution, toxics, and human health as they affect ordinary people, especially people of color. This book argues that the environmental justice movement has also begun to transform science and engineering. The chapters present case studies of technical experts’ encounters with environmental justice activists and issues, exploring the transformative potential of these interactions.

Technoscience and Environmental Justice first examines the scientific practices and identities of technical experts who work with environmental justice organizations, whether by becoming activists themselves or by sharing scientific information with communities. It then explores scientists' and engineers' activities in such mainstream scientific institutions as regulatory agencies and universities, where environmental justice concerns have been (partially) institutionalized as a response to environmental justice activism. All of the chapters grapple with the difficulty of transformation that experts face, but the studies also show how environmental justice activism has created opportunities for changing technical practices and, in a few cases, has even accomplished significant transformations.

Reviews

"This book brings together many of the top scholars at the intersection of science and technology studies and environmental justice studies to explore how scientists and engineers engage with environmental justice issues and activists, often in the face of significant institutional constraints. Through detailed case studies, the scholars break new ground by showing how both the topics studied and methods used to understand difficult environmental justice issues have undergone significant innovation." --David J. Hess, Professor of Sociology, Vanderbilt University "This collection brings empirical insight and fresh analytical perspective to issues of science, engineering, and environmental justice. In presenting scientific identities and practices as dynamic rather than static, it takes us beyond science-citizen dualities and opens up transformative possibilities for both science and environmental change." --Alan Irwin, Copenhagen Business School; author of *Citizen Science*

"The questions raised by the authors about environmental justice and the transformation of science and engineering related to environmental decision making are important and have been largely neglected in the literature until very recently. The rigorous and scholarly discussion of how risk science can be transformed by values associated with the environmental justice movement is quite impressive." --Elaine Vaughan, Research Professor and Professor Emerita of Psychology and Social Behavior, University of California, Irvine

About the Editors

Gwen Ottinger is Assistant Professor in the Interdisciplinary Arts and Sciences Program at University of Washington–Bothell.

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NOTE: The Midwest Environmental Justice Organization was previously known as the Madison Environmental Justice Organization.