

## ***Racing Towards The Starting Line: The Radical Nature Of Precaution***

Mary H. O'Brien

It is exciting to come here from Oregon to be with you, because Massachusetts is doing some amazing things that I want to take back home. Your coalition for a statewide Precautionary Principle Initiative is extraordinarily exciting, and far advanced of where we are in toxics policy in Oregon. You have a statewide clean production institute - I hope we get one in the state of Oregon sometime within the next decade. In fact, in October 1999, long-time Oregon environmental activists met for a three-day retreat, and we decided to form a statewide toxics organization, because we have none. We have a premier statewide *pesticide* organization, the Northwest Coalition for Alternatives to Pesticides (NCAP). We have statewide organizations for protecting rivers and forests; for removing four major dams to save salmon which are going extinct; for getting cows off the national public grasslands and forests in Oregon... ...but no statewide organization for toxics.

But that list of what we *do* have in Oregon colors the thoughts I bring today regarding the meaning of and strategy for the Precautionary Principle in relation to breast cancer.

In Oregon we have some large public lands. We still have some ancient, native forests that have never been logged; some native grasslands that have never been plowed or grazed by livestock; some wild rivers; lots of cougars and elk; some bighorn sheep, chinook salmon, mule deer, lynx, wolverine, and even, this last spring, the first wolf to wander into Oregon since the last Oregon wolf was killed in the 1930s. I am who I am because of the cougars and elk and native bunchgrasses and 700-year old Douglas firs.

In Oregon we also have a breast cancer epidemic, a prostate cancer epidemic, an Alzheimer's epidemic, and a childhood cancer epidemic, just like every other state in our nation. We have deformed frogs and inter-sex fish. We have peregrine falcon and bald eagle eggs thinned by DDT. We are spreading industrial toxic wastes onto our farms in agricultural land fertilizer. We are about to begin burning chlorinated military nerve gas weapons in incinerators near Hanford Nuclear Reservation where, during World War II and the Cold War our nation made nuclear bombs and where today radioactive tumbleweeds blow around on the surface and cadmium flows underground towards the Columbia river. We have lots of those little mobile industrial factories with the horizontal emission stacks, called automobiles, running around on *lots* of highways. And we have lots of rain to wash the motor drippings off those highways into the waterways that have been sprayed with herbicides.

And so I am who I am, a 53-year old woman with one breast removed; one son

with severe Attention Deficit Disorder; and a friend who is dying of lung cancer in her brain and hip, though neither she nor her husband nor either of their parents had ever smoked. I'm also a 53-year old woman who has been working full time at toxics activism since moving to Oregon as a 35-year old.

So how do we stop the epidemic? We race toward the starting line. While brainstorming with some toxics activists in Montana recently, we imagined something fun. We imagined being at one of the annual Breast Cancer Races for the Cure, but we imagined that *some* women would start at the finish line, but would instead run for the *start*, the *cause*, of breast cancer. There would likely be fewer women running in this second race and this less money would be raised by the Race for the Cause, because the Race for the Cure is heavily advertised with underwriting from the cancer industry. The two groups of women would pass each other about halfway through the race (unless the women running for the Cause were slower...), and would greet each other, and continue on with their separate races. Talking with the press about the Race for the Cause could be enlightening for the public.

I don't think anyone has really done such a race yet, but it was fun imagining it. But really, that's what the Massachusetts Breast Cancer Coalition is doing. You're trying to get to the environmental *causes* of the breast cancer epidemic, and *eliminate* those causes. That takes large understandings of how our society works; it takes ambitious campaigns; and it takes large personal commitments from many people.

I believe that a campaign that is serious about ending the breast cancer epidemic has to be serious about committing to changing our society's entire orientation toward nature.

Let's look at precaution- the principle of precaution, in relation to stopping the epidemic. Imagine taking apart the best clock in your house. First, imagine you're told to take it apart in five seconds. You'd probably do it with a sledgehammer.

Then imagine you were told to take it apart in the gentlest way you could, within a half an hour. You'd probably pick at it with a screwdriver, and then a stout darning needle, and finally, but quickly, because you're running out of time, a very fine needle.

But imagine you were then told to put these two clocks back together, so they *work*. How much time would *that* take? You wouldn't have a prayer of refurbishing the clock you had smashed with a sledgehammer. You'd have to make or buy all the new pieces, and then fit all of them together in intricate patterns so the clock would actually run.

As for the clock you had picked apart with the tinier tools, I imagine it would take you a very long time to put it back together. You would have to import or make some pieces you had inadvertently broken or bent; you would have to talk with a clockmaker, maybe get a book from the library. You'd have to learn a lot about clocks and work, very,

very carefully.

But what if there *were* no clock makers we could consult with? What if no human had *ever* built a clock, but we had simply *inherited* clocks, throughout all the world's history in an endless stream, for us to use, and misplace, and throw away. How *then* would you put your clock back together? Maybe you could look at one of the clocks that was still working?

Well, we inherited the Earth and we've been dismantling its ecosystems for quite a few years now. We've done some of it with sledgehammers; nuclear bombs, drills, plows, cattle, dams, asphalt spreaders, incinerators.

We've also been taking it apart with darning needles, like making teething rings with endocrine-disrupting chemicals. Using throw-away coffee cups. Throwing away used computers. Producing one or a few new birthdays at a time until we are now six billion and driving myriad companion species into oblivion at a rate that rivals or exceeds the other five great extinctions in Earth's history. And several times a day flushing our bodily wastes into the little freshwater stream that is diverted through our house and which we call our toilet.

So by now, some of the pieces are gone. And there isn't another fully-functioning Earth to work from as a model. We don't *have* a library book that tells us how to make Earths. And we don't have any Earthmaker to go buy new pieces from, or to ask how she makes Earths.

All we can do with our breasts and our lives and our Earth that are unraveling under the onslaught of our sledgehammers and darning needles is three things: (1) stop hammering and picking at natural systems when we don't have to; (2) work awfully hard at backing off to let Earth and our bodies rest and recuperate from the onslaughts; and (3) actively (albeit clumsily) try to restore our Earth, lives, and breasts to health.

Our breasts are simply *one* marvelous part in Earth's systems. As a scientist, I do not think we are going to be able to stop the breast cancer epidemic until we make sure *all* the Earth's embryos and longest-living individuals are clean. They need to *start out* free of human-introduced toxic chemicals, and, at the end of their biological lives, they need to *die* free of human-introduced toxic chemicals. *That's* how the breast cancer epidemic will end.

I recently read an interview (van Gelder 1999) with an industrial architect named William McDonough in *Yes!* magazine, a truly wonderful magazine of practical, positive futures. In this interview, McDonough imagined the design assignment that would have resulted in our first industrial revolution. He said it would be something like this:

Could you design a system that pollutes the soil, air and water; that measures productivity by how *few* people are working; that measures prosperity by how *much* natural capital you can dig up, bury, burn, or otherwise destroy; that measures progress by the number of smokestacks and requires thousands of complex regulations to keep you from killing each other too quickly; that destroy biodiversity and cultural diversity; that produces thing that are so highly toxic they require thousands of generations to maintain constant vigil while living in terror?

McDonough goes on to ask, “Is this *ethical*?” It’s like asking, “Would you design a death camp? Can you do this for me?”

Instead, McDonough suggests that our next design experiment, our next industrial revolution, should be, “How can we design in a way that loves all the children of all species for all time?” I think that’s a positive way to state the precautionary principle. It’s a good standard by which to judge our society, our personal lives, and our breast cancer campaigns.

McDonough’s design task for the next industrial revolution requires listening to the Earth- not just to our breasts, or just our species, or just our current environmental regulatory processes. If we’re going to put our bodies and our breasts back together, if we’re going to restore functioning of *our* hormone systems, we’re going to have to restore the hormone systems of the frogs. We’re going to have to allow peregrine falcon eggs to get thicker. We’re going to have to put estuaries and streams and grasslands and the winds and the ozone layer back together. We’re going to have to reconstruct our transportation systems so we don’t mine the Arctic National Wildlife refuge for oil and kill each other with exhaust pipes every time we go to the grocery store. We’re going to have to reconstruct our agriculture so that farms are not hazardous chemical sites, but instead are safe habitat for wildlife and farm workers and farm owners’ embryos. We’re going to have to reconsider what it means to know and care for children , to avoid forcing them into a world that has no room for anything but humans.

We’re going to have to improve our legislative system so corporations are brought into public accountability, because there is no action of so-called “private industry” that is *less* private and *more* public than using toxic substances. And we’re going to have to reconstruct our homes as bodily toxic waste dumps; our lawns as killing grounds; and our trash cans as “Hear no evil, see no evil, speak no evil.”

You are extremely foresightful and fortunate to have the Lowell Center for Sustainable Production as one of your partners for your Massachusetts Precautionary Principle project, because it helps you indicate how Massachusetts industries can and *should* behave. It would be additionally wonderful if you also had as partners, the Sierra

Club, the Isaac Walton League, hunters' organizations, the Nature Conservancy, Planned Parenthood, and Republicans for the Environmental Protection of America. Because the precautionary principle can't be just about restricting individual toxic chemicals when only five laboratory animal experiments *indicate* harm rather than when 25 laboratory and the human epidemiological studies *prove* harm. The precautionary principle *must* be more than simply being more conservative with risk assessments.

The precautionary principle is necessarily about clean production; wildlife conservation and ecosystem restoration; simple living; bringing democratic accountability to corporations; and reducing human overpopulation. It is necessary for 500 years from now, or, as Bill McDonough challenges us to think, it's for *all* time.

“Ah,” you might be thinking, “O’Brien is going off into the ozone. Easy for her to walk in from Oregon to say this. We’ve got *practical* things to do. We’ve got people in the Department of Environmental Quality Who think corporations have the rights of people and think women should take dying from breast cancer laying down.”

Well, I do know what incredible, down-to-earth work and sweat and tears it takes to sit for five years on committees with people who are being paid to make sure that their rights to pollute are protected. I know what work it takes to make sure “shall” rather than “may” is in line 17 on page two of a legislative bill; to make sure 20 people turn out to testify at a hearing on some seemingly obscure change in a badly-written regulation. I do know what it takes to gather 11,000 signatures on the street for an initiative; or to understand that trichloroethylene (TCE) targets the reproductive organs of mice and PCBs stimulate uterine growth in rats; or to try to develop or implement an alternative to methyl bromide for pests on imported grapes.

And I do agree that some campaigns need to focus specifically on breast cancer, while others focus on endometriosis, others focus on childhood brain cancer, others focus on the decline of meadowlarks in North America, and still others focus on saving the Mekong River in southeast Asia from World Bank-funded dams.

But we're ecologically mistaken if we think we can get clean human embryos and breasts if we don't *also* make sure old whales and the Mekong River are clean. The precautionary principle, which is a common need of ALL environmental campaigns, must have an articulated ethic, so that our goals are not only practical, but also remain sufficiently radical and collaborative to accomplish what needs to happen and also touch what most people *feel* and *know* is the right thing to do.

Most Americans, perhaps most humans on Earth, do not spontaneously think of the large social and ecological implications of what they buy, what they do at work, how they vote, or how they recreate, or procreate. Therefore, we need to articulate the largest, most decent goals possible and provide images of what our lives and state and nation will look

like if we behave with the Earth in mind.

I believe McDonough's design task for the next industrial revolution, to care for all the children of all the species for all time, is the only goal that is sufficiently large to reverse the breast cancer epidemic and the unraveling of our breasts' environment.

I frequently get told by fellow activists, "Well, most people get involved in toxics activism because of some incident in their life, or because of their children, or some other human predicament. You *can't* appeal to people on the basis of other species."

I disagree. I believe we *must* appeal to people on the basis of *all* of us living here on Earth. Placing humans at the center of the universe, as if we're separate from the other lives around us, is what got us *into* this mess, and so I don't believe placing humans at the center of our campaign goals will be able to get us *out* of this mess. Rachel Carson understood this. Her book on the havoc played by pesticides, *Silent Spring* (1962), told stories of sunfish, muskrats, and armadillos right alongside stories of humans. Read about the land of sagebrush, quail, mule deer, and pronghorn antelope in her Chapter Six. Carson was born, lived, and died on the East Coast, but she showed how the unraveling of the pronghorn antelope's western U.S. habitat is the same story as the unraveling of our breasts' habitat.

Carson did not put humans at the center of the universe, and yet probably more people have read her book than any other toxics book in the history of the U.S. Likewise, what image is finally waking up American citizens to the horrors of genetically-modified food crops, something peasants worldwide have been actively and dramatically resisting for years? It is the image of the Monarch butterfly potentially falling victim to wind-scattered pollen from B.T.-modified corn crops (Reaney 1999)\*\* People do care about more than humans.

When, at some times in history, some indigenous tribes have exercised restraint with respect to their surrounding environment, they have done so by articulating explicit ethics and rules, for instance about how one needs to treat Mother Earth, or have articulated in their business meetings the responsibility to make decisions with the seventh generation in mind.

Martin Luther King understood the role that images and ethics play in guiding people's lives. "I have a dream," he said, and people know through that simple phrase, that it was ok to imagine a society in which more than one color of human is respected.

We have to give our fellow citizens images that say it's O.K. to care for frogs and mule deer and children of the fourteenth generation from now. For decades, our fellow citizens have been unremittingly hammered by the mantra that the Bottom Line Is Survival, that if we don't mine and cut down and plow up and dam and spray and dump, then we'll

be run into the ground by economic competition from the rest of the world. We have been told that risk assessment of unnecessary technologies is logical, because supposedly the *only* objective, scientific regulatory question is not *whether* a toxic chemical should be used at all, but only *how much* of that toxic chemical should be released into the environment.

But on October 20, 1999, the Montana Supreme Court, in a stunning ruling, unanimously *rejected* the risk assessment approach in favor of alternatives assessment (MEIC v. DEQ). The ruling was based on the Montana Constitution which states that people have the right to clean and healthful environment. The Montana Legislature and DEQ had given the Seven-Up Pete Joint Venture, which was proposing another gold mine in Montana, a waiver of its test pumps from review under the state's nondegradation policy even though the test pump wastewater was releasing arsenic into the Blackfoot River. When citizens protested, the DEQ said that citizens had neither demonstrated "significant harm" (that's a risk assessment term) to the river nor that they had been injured. The DEQ said the arsenic would be quickly diluted downstream to "background" levels (another risk assessment term).

The Supreme Court disagreed. They wrote:

We conclude, based on the eloquent record of the Montana Constitutional Convention . . . that the delegates' intention was to provide language and protections which are both anticipatory and preventative. The delegates did not intend to merely prohibit that degree of environmental degradation which can be conclusively linked to ill health or physical endangerment. Our Constitution does not require that dead fish float on the surface of our state's rivers and streams before it's farsighted environmental protections can be invoked."

With regard to having given the Seven-Up Pete Joint Venture a waiver for its test pumps, the Court wrote, "{The} government must demonstrate both a compelling state interest for doing so . . . {and that the waiver} is the least onerous path available."

So we need to provide alternative images and ethics, as the Montana Constitution does, by stating simply that people have a right to a clean and beautiful environment. We need such emotionally large agendas, to draw in as many people as possible into resistance against biocidal madness, of which breast cancer is but one fallout. As McDonough says elsewhere in that *Yes!* magazine interview, "I'm not that interested in sustainability, because if sustainability is just the edge between destruction and regeneration, then it's a kind of maintenance – it's a demeaned agenda."

And so I believe we need to press for the agenda that McDonough articulated, and

which the Montana Constitution has articulated: Taking care of all the children of all species for all time. Then our breasts will be taken care of.

So we see the potential of the precautionary Principle for our breast cancer campaigns. However, there are four things that I worry about regarding our invocation of the Precautionary Principle:

I worry that our language will become technocratic around the Precautionary Principle.

Definitions of the Precautionary Principle vary, but generally are quite dry and formal. A common definition is cited on the cover of an issue of Massachusetts Breast Cancer Coalition's newsletter, *Stop the Epidemic!* (MBCC 1999):

When an Activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

That is a good and necessary definition, but as we campaign around it, we need to remember to go beyond cold definitions; to be *eloquent*, in order to reach the hearts of those around us. We need to articulate the basic emotions, ecological understandings, and ethics so that the "should" in "... precautionary measures should be taken ..." takes deep root.

Even if you've read it before, I urge you to re-read *Silent Spring*. I know of no one who can teach us more than Rachel Carson about how to explain science in plain language, how to invoke ethics that move us from the inside out, and how to aim high with our strategies.

For instance, the last chapter of *Silent Spring* speaks of what we must do about pesticides, but by extension speaks equally to industrial toxics, automobile exhaust, and throw-away plastics, and ultimately is a rewording of the precautionary principle. She writes:

The choice, after all, is ours to make. If, having endured much, we have at last asserted our "right to know," and if, knowing, we have concluded that we are being asked to take senseless and frightening risks, then we should no longer accept the counsel of those who tell us that we must fill our world with poisonous chemicals; we should look about and see what other course is open to us.

This is the precautionary principle in language that reaches inside us. Rachel

Carson was a scientist, but she wasn't afraid to also speak in language that shows why the science matters. We shouldn't be afraid, either.

I worry that we will use the precautionary principle primarily to say "No."

We must not paint ourselves into a corner where we are dismissed for constantly saying, "Ban this. don't use this. Phase this out. Stop doing that." There is no question that we need to eliminate unnecessary use of toxics, and ban and phase out many of them. But the decision to do so will be made infinitely sooner and more easily if we point to the alternatives. This is the genius of the Health Care Without Harm movement: While invoking the Hippocratic Oath and Precautionary Principle in calling for the elimination of mercury and PVC in hospitals, the participants in the Health Care Without Harm movement are showing how hospitals can *function* without mercury and PVC. They aren't just *saying* hospitals could do so, they are helping hospitals figure out the cost accounting of adopting alternatives, and giving them names of suppliers and contacts within other hospitals that are successfully eliminating their use of mercury and PVC. The Health Care Without Harm participants are putting effective pressure on suppliers to develop alternatives, and, by enlisting hospitals in the campaign, are providing suppliers with the promise of markets for these alternatives if they develop them.

For the same reason, the Massachusetts Breast Cancer Coalition Precautionary Principle campaign collaboration with the Lowell Center for Sustainable Production is extremely wise.

I worry that we will invoke an impossible reversal of onus via the Precautionary Principle, and thereby allow many to dismiss it.

Often I will see someone explain the Precautionary Principle as meaning, "The proponent of a potentially hazardous activity should be required to prove that the activity is safe, rather than the public being required to prove that it is hazardous."

I don't believe this is an appropriate standard to invoke literally, because we don't and can't ourselves live by it. So much of what we *ourselves* do is not safe, so why do we expect to prohibit industry from acting because they fail to meet a standard we ourselves can't live up to? Our process of driving a car, is not "safe" because every mile we drive emits 22 pounds of carbon dioxide for global warming. Painting our house with most commercial paints releases volatile organic compounds that contribute to smog; they are not "safe." In the Northwest, most of our household electricity comes from dams that are making the salmon go extinct, so turning on an electric light in our living room is not "safe."

I would instead say, as the Montana Supreme Court said, that the proponent of a possibly hazardous activity should be required to show that less harmful activities are not

feasible, rather than the public being required to prove that it is hazardous. For example, if some factory wants to put a substance into the public air, then it should have to show that if it has to put *anything* into the air, let alone *that* particular substance.

In other words, the proponent should be required to show the *necessity* of the possibly hazardous activity, and the absence of less hazardous alternatives, rather than having to prove that their activity or a less dangerous alternative is “safe.” It’s *easy* to say the proponent should have to prove an activity is safe, and it seems a reasonable comeback to our having had, in the past, to always come up with dead bodies before an activity is regulated more strictly, but it’s not *possible* for a proponent to prove an activity will be safe, so we shouldn’t be invoking that standard.

My fourth and final worry is that we will adopt under-ambitious goals.

For instance, I worry that we will invoke the precautionary principle primarily when a pesticide or industrial toxic has *already* been shown to be highly hazardous, and invoke the precautionary principle to get that toxic phased out.

That is not really precautionary. That is simply halting the use of a known toxic. Take dioxin, for instance. There’s nothing really “precautionary” about closing down an incinerator that produces dioxin: That’s simply halting the release of one of the most astonishingly toxic substances known to humans. That’s simply closing down a known killer.

We cannot stop the breast cancer epidemic by taking on one chemical at a time. We need to take on *all* unnecessary uses and releases of toxics. We need to establish laws that give primacy to *clean* water, not “sustainably” poisoned water; to *clean* air, not air survivable by the strongest adults; and to *clean* embryos, not embryos with traces of only 33 industrial toxic chemicals in them instead of 53. I am extremely wary of campaigns that expend energy on one individual chemical, though occasionally that is necessary. I believe we should focus on the unnecessary use and release of *all* toxics and untested substances, because breast cancer is almost certainly facilitated by a whole soup of toxic stresses, immune suppressants, mutagens, and cancer promoters.

Those who would release hazardous substances into rivers, air, our food supply, wildlife, and embryos, should be required to show why they have to; why they are not able to fully contain the hazardous substances; why they have no feasible alternative to using that toxic. All entities that release hazardous substances into air, water, land, or products, need to be required to report their use and release of *all* their hazardous substances, not just 600 hazardous substances and only when they use 10,000 pounds or release 25,000 pounds. In 1996 in Eugene, Oregon we enacted a law that requires that manufacturers report the inputs and releases of each hazardous chemical down to 50 pounds of use a year (five pounds in the case of “Extremely Hazardous Substances;” see [HYPERLINK http://](http://)

www.ci.eugene.or.us/toxics) [www.ci.eugene.or.us/toxics](http://www.ci.eugene.or.us/toxics)).

We need to articulate the basics of right-to-know and informed consent. We would be outraged if our physician performed a procedure on us that could possibly be harming us without (a) telling us what she was proposing to do and whether there are less dangerous alternatives; and (b) obtaining our informed consent. So why do we have laws on the books that allow industry and others to release hazardous substances into our lunch, food, consumer products, and infants (a) without telling us they are doing so; and (b) without obtaining our informed consent? We have set our sights too low in our campaigns.

We need to invoke the precautionary principle for our most *fundamental* rights and biological *needs*. Anything less will not stop the breast cancer epidemic.

In the end, the precautionary principle is simply common sense, and if we combine the precautionary principle with democratic, public examination of a full range of alternatives, then most of what currently passes as “legal” under permits and state, federal, and international law, will be seen to be what it is: Murderous, abusive, and unnecessary.

While saying “No” certainly has its place and power, ultimately we define ourselves as a people and as individuals more by what we say “Yes” to. What do we live and stand up for?

What laws and activities will define us as a people who acknowledge that life is simultaneously a biological gift; the ultimate bottom line; and an infinite source of wonder, feeling, beauty, and integrity? What laws and activities will define us as a people who acknowledge that our sense of community must ultimately include *more* than people, and that people are more than the false bottom line?

What campaigns will define us as women who understand that our breasts are inseparable from all that is, and has been, and will be here on Earth? That a whale’s breasts are *our* breasts. That an outdoors stream is as holy as the stream of breast milk entering an infant’s mouth.

Indeed, what precautionary principle campaigns will be sufficiently vigorous, radical, humorous, effective, and comprehensive to define us as people who revere the air we breathe, the food we eat, the falcon we see above, and the baby girls with some-day breasts we bear, as all one, all holy, and all needing us to succeed in our campaigns?

I look forward to the discussions and presentations today. I am sure that people back in Oregon will get tired of me saying, “But in Massachusetts, they’re doing this precautionary principle campaign . . .” Maybe they’ll start one, too, with your help.

## References

Barnard, Jeff. July 26, 1999. Inmates offer solace to dying prisoners. *The Register-Guard* (Eugene). 2C

Carson, Rachel. 1962. *Silent Spring*. New York: Houghton-Mifflin.

(MBCC) Massachusetts Breast Cancer Coalition. 1999 *Stop the Epidemic!* Number 18 (Spring): 1.

(MEIC v. DEQ) Montana Environmental Information Center; Clark Fork-Pend Oreille Coalition; and Womens' Voice {sic} for the Earth v. DEQ and Seven-Up Pete Joint Venture. No. 97-455, Montana Supreme Court, 1999 MT 248.

Reaney, Patricia. 1999. Pollen from GM corn harms butterfly larvae, Reuters (20 May)

van Gelder, Sarah. 1999. How do you love all the children? Yes! Fall (15-18).

**Presentation for "At the Heart of Primary Prevention: Breast Cancer and the Precautionary Principle." Sponsored by the Massachusetts Breast Cancer Coalition. Boston, Massachusetts, 23 October 1999.**

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