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Risk Avoidance, Cultural Discrimination, and
Environmental Justice for Indigenous Peoples
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There appears to be increasing tolerance among environmental decision makers and commentators for risk avoidance--strategies that call upon risk-bearers to alter their practices so as to avoid the harms of environmental risks--in lieu of risk reduction--strategies that look to risk-producers to prevent or eliminate contamination in order to reduce these harms. Under risk avoidance approaches, risk-bearers might be forced to move from their homes or homelands to avoid exposure to soils or waters contaminated with lead or polychlorinated biphenyls (PCBs); they might be admonished to refrain from certain pursuits or ways of *3 living, such as fishing in and consuming fish from lakes and rivers contaminated with mercury; or they might be called upon to take certain medications to counter the severe respiratory distress they experience during acute exposure to sulfur dioxide.

Although the burden of undertaking avoidance is unlikely to fall on members of the dominant society, risk avoidance is likely to be the strategy of choice only where members of the dominant society do not value the practice that entails risk or do not understand the particular avoidance measures to occasion profound loss. The first of these points is disquieting as a matter of distributive justice, inasmuch as it is communities of color, low-income communities, and indigenous peoples who are disproportionately among the most exposed, and so will be disproportionately among those called upon to undertake avoidance. The second of these points is perhaps even more troubling as a matter of environmental justice, to the extent that the values and cultural understandings reflected in the dominant society's evaluation of risk avoidance measures are not the values and understandings of those who must undertake avoidance. This is often the case where indigenous peoples are among the risk-bearers. Environmental policy that is inattentive to this observation becomes a means by which the dominant society continues to dismantle the cultural bonds of indigenous peoples and to sanction the destruction of the land and resources that are crucial to the flourishing of these peoples.....

Environmental regulatory efforts have, until recently, focused on reducing environmental risks to levels deemed acceptable by eliminating the sources of these risks, i.e., environmental contaminants. Under this approach, threats to human health are reduced by targeting the first link in the chain that connects environmental contamination to adverse health effects in humans. While concern for human health has been the touchstone for these regulatory efforts, the focus on the source has meant that ecological health benefits as well. Increasingly, however, decision makers and commentators have entertained a shift in focus: environmental risks might be addressed by intervening late in the chain, *5 breaking the link at the point of human exposure. Under this new approach, environmental regulatory efforts include strategies that leave contamination unabated and instead shift the burden to affected humans to eliminate or mitigate their exposure, thereby "avoiding" the risk. Reliance on risk avoidance strategies, however, will in many

cases result in cultural discrimination and environmental injustice from the perspective of indigenous peoples--a claim explored in Parts II and III of this Article. By way of background, this Part defines and provides examples of "risk avoidance" strategies, presents evidence of an increasing tolerance for such measures as a staple of environmental regulatory policy, and offers a cautionary note regarding the perils of risk avoidance as a general matter.

A. Risk Avoidance Versus Risk Reduction

Risk avoidance strategies are those that require risk-bearers to avoid the risks they face rather than require risk-producers to reduce these risks. Risk avoidance strategies seek to "manage" environmental risks by looking to the individuals whose practices or lifeways expose them to environmental risks--given the presence of a contaminated environment--and requiring them to alter their ways. These risk-bearers might be required or induced, for example, to move from their homes or homelands to avoid contact with neighborhood soils or reservation waters contaminated with lead or PCBs; they might be advised to stay indoors on "ozone alert days" to avoid respiratory problems, particularly if they are asthmatic, elderly, or otherwise sensitive to air pollution; they might be admonished to refrain from certain activities, pursuits, or ways of living, such as fishing in and consuming fish from lakes, streams, or bays contaminated with mercury, particularly if they are children or women of childbearing age; they might be called upon to take certain medications to reverse severe respiratory distress, as in the case of asthmatics who receive acute exposures to sulfur dioxide; they might be asked to undergo medical monitoring to keep an accounting of the lead content in their blood; or they might be induced to undergo prophylactic surgeries to correct physiological conditions that render them particularly susceptible to environmental contaminants. What these strategies have in common is that they place the burden of addressing environmental risks on those who bear the risks of environmental contamination....

There appears to be an increasing tolerance among decision makers and commentators for risk avoidance strategies in environmental policy. Whereas in the past risk avoidance measures were undertaken as a last resort and characterized as regrettable, temporary, or exceptional responses to contamination, risk avoidance measures now serve as important, permanent, and even primary components of several environmental regulatory efforts...

Examples of Risk Avoidance as Environmental Regulation

a. Fish and Wildlife Consumption Advisories...

Increasingly, health and environmental agencies have turned to fish and wildlife consumption advisories as a means of "managing" the resulting risks to human health. Consumption advisories seek to address these risks by encouraging those affected to reduce the quantity or frequency of their fish consumption, or to refrain from eating fish altogether, thereby avoiding the exposure to toxic contaminants that these practices

would entail. For example, signs posted along the Columbia Slough, a contaminated waterway on Portland, Oregon's northeast side, advise against fishing at all, cautioning: "Danger. Polluted River. This river is polluted. Swimming, eating the fish, and drinking the water is not advised due to health hazards. Do at your own risk. Bureau of Environmental Services 823-7740."...

As of 2000, 26 percent of the lakes and 11 percent of the river miles in the United States were under state or tribal advisory--a total of 63,288 lakes and 325,500 river miles. In addition, the entirety of the Great Lakes and their connecting waters were under advisory in 2000, as were 71 percent of coastal waterways in the contiguous 48 states (including 100 percent of the Atlantic Coast and 92 percent of the Gulf Coast)....

As with other risk avoidance strategies, fish and wildlife consumption advisories have become accepted as a staple of agencies' "risk management" efforts. Although agencies continue to characterize advisories as regrettable or temporary responses to contamination, they now occupy an important--and seemingly permanent--place on many agencies' risk management rosters....

b. Institutional Controls...

For over two decades, environmental agencies have endeavored to clean up contaminated sites. Under CERCLA and other statutes, several sites contaminated with lead, PCBs, and other toxic chemicals are slated for or are in the process of being cleaned up....

Since the mid-1990s, however, environmental agencies have counted increasingly on risk avoidance measures in the form of institutional controls that permit them to alter the cleanup baseline, allowing some amount of contamination to remain in place at the site, undiminished in quantity or toxicity. Institutional controls are legal, administrative, or institutional devices that seek to induce or require people to limit their contact with the contaminants that are left in place. Institutional controls include such tools as fences and notices, zoning measures, easements, restrictive covenants, reversionary interests, and prohibitions or restrictions on resource use. They operate within--and provide legitimacy for--a paradigm of "risk-based" or "use-restricted" cleanups, whereby the future uses of a site are limited to those that will result in little or no human contact so that cleanup can be less extensive, and thus less costly. So long as future uses are adequately circumscribed and human exposure thereby avoided, such use-restricted cleanups should in theory result in the same amount of human health protection for less money....

c. Plant Gathering Restrictions

Forest lands are contaminated with herbicides routinely applied by the United States Forest Service ("USFS") to eliminate vegetation thought to compete with coniferous species preferred for timber production. In California's Eldorado, Lassen, Sierra, and Stanislaus National Forests, for example, the USFS applies herbicides containing glyphosate, hexazinone, and triclopyr as part of its "herbicide treatment

programs" for areas that have recently been logged or burned due to forest fires. ..

Human exposure to these herbicides is, for most individuals, limited. California Indian basketweavers, however, are exposed to these herbicides regularly as they tend, harvest, prepare, and weave the plants in the process of making baskets. Basketweavers are exposed through their skin: dermal contact takes place as they prune, cut, tend, and gather contaminated plant shoots and roots. Weavers are also exposed through their mouths: dermal contact and perhaps ingestion occurs as they prepare the plant materials and as they weave, because they often need to hold one end of the grasses in their mouth-- one weaver refers to her "splitting tooth," that is, the one she uses to split grasses to prepare them for weaving...

In other contexts, too, agencies and others are looking to risk avoidance measures instead of risk reduction. For example, rather than requiring risk-producers to prevent or control air emissions of oxides of nitrogen ("NOx") and volatile organic compounds ("VOCs") sufficiently to reduce the formation of ground-level ozone to healthy levels, agencies instead issue "ozone alerts" on days when the ozone levels are unsafe. Ozone alerts typically recommend that everyone--especially children, people with asthma or other respiratory diseases, the elderly, and those who work or exercise outdoors--curtail their outdoor activities during the day...

A shift to reliance on risk avoidance is troubling on several grounds, especially for those interested in environmental justice...

First, risk avoidance strategies are myopic. Risk avoidance measures break the link between contamination and adverse human health effects late in the chain, at the point of human exposure. Thus, such measures leave unaddressed the myriad adverse effects of contamination that do not directly threaten human health, specifically, the adverse effects on all non-human components of ecosystems...Second, risk avoidance measures are of questionable efficacy. Even proponents of risk avoidance concede the difficulty of conveying warnings about or enforcing restrictions on uses that entail risk, as well as the difficulty of effecting behavioral changes in people, even those unopposed to the measures on philosophical, moral, or cultural grounds. Signs intended to warn against consuming fish from contaminated waters get misplaced; fences intended to keep children from playing in contaminated soils get scaled; zoning restrictions designed to limit future uses of contaminated properties get waived....

The burden of undertaking risk avoidance measures is unlikely to fall on members of the dominant society. Nevertheless, risk avoidance measures are likely to be judged by reference to the dominant society's values: risk avoidance is likely to be embraced where members of the dominant society do not value the practice that entails risk or do not understand the particular avoidance measures as occasioning profound loss. The first of these observations is troubling as a matter of distributive justice: indigenous people, members of other non-dominant groups, and low-income individuals will again be called upon disproportionately to shoulder the burdens of environmental degradation that have attended industrial and agricultural development even though the benefits of this

development have been enjoyed not by these risk-bearers, but overwhelmingly by affluent members of the dominant society. This maldistribution of environmental burdens and benefits, however, is only one component of the environmental injustice likely to be worked by a shift to risk avoidance. Where risk avoidance strategies burden practices that are valued only by indigenous people or members of other non-dominant groups or require measures that are problematic only from the perspectives of these non-dominant....

It is not the case that we are all equally likely to be among those conscripted to undertake risk avoidance measures...Because whether an individual will suffer adverse health and other effects from environmental harms is dependent on her exposure circumstances, even the most susceptible individual will not come to harm if she does not come in contact with contaminants, i.e., if she is not among the exposed. Although we cannot predict without further research who will turn out to be among the most susceptible, we can predict who is likely to be among the most exposed to environmental contaminants. As environmental justice advocates and others have demonstrated, people of color, low-income people, and indigenous people are likely to be among the most exposed...Thus, the distributive implications of risk avoidance proposals come into focus. We are not all equally likely to be among the conscripted. For those among us who enjoy relative freedom from contact with environmental contaminants, the chance that we would need to move or to cease eating fish or to undergo surgery to avoid environmental risks is slim. For those among us who are highly exposed, the chance that we would be so burdened is much greater....

It is also not the case that we all value similarly the practices that, given contamination, entail exposure, nor perceive similarly the ease or anguish that would be occasioned by various risk avoidance measures....

Risk reduction strategies are likely to be pursued where the practice or pursuit that exposes humans to risk is viewed as laudable, natural, essential, or important to living a human life. Risk avoidance strategies, by contrast, are likely to be entertained where the way of living that exposes humans to environmental risk is not valued or is thought to be unnecessary. Even if the practice in question is condoned (or at least not condemned), risk avoidance strategies may nonetheless be selected in lieu of risk reduction where avoidance measures could be readily and cheaply undertaken...

Examples of Differing Understandings of Practices that Entail Risk

a. Basketweaving

Depending on where one obtains the grasses and other plant materials used in basketweaving and on how one handles these materials, this pursuit might entail risks resulting from toxic contamination of the materials. For most basketweavers in the dominant society, obtaining materials is a matter of a trip to a craft or hobby store. Much of the processing of the materials has already been done by the time they are purchased by weavers. For many indigenous basketweavers, by contrast, obtaining materials

involves tending the plants and their habitats (e.g., pruning, thinning, burning, and otherwise managing plant resources); harvesting the roots, shoots, and other portions of the plants to be used (e.g., digging for, cutting, and gathering the plants); and preparing these materials by hand (e.g., cleaning, pounding, splitting, dyeing, and otherwise readying materials for weaving).

In California, these practices surrounding basketweaving expose weavers to risks from toxic contaminants applied by various federal and state agencies to manage public lands that are traditional and contemporary sources of basketry materials. The U.S. Department of Transportation, U.S. Forest Service, Cal Trans, and California Park Service all employ pesticides and herbicides that contaminate materials--such as bracken fern roots, buckbrush or deerbrush shoots, woodwardia fern, grey willow, and beargrass--relied upon by indigenous basketweavers. Basketweavers are exposed to these pesticides and herbicides through contact with their hands and mouths when they prune, cut, tend, and gather contaminated plant shoots and roots; when they prepare the plant materials for use; and when they weave their baskets....

For dominant society evaluators, basketweaving is likely to be viewed as a hobby or leisure activity. It is, for most, a pursuit that is primarily recreational and, as such, not necessary.... For California Indian basketweavers, by contrast, basketweaving is a culturally important practice with traditional, social, economic, political, and spiritual dimensions. Proper practice includes tending and gathering materials, weaving and using baskets--all in accordance with prescribed methods and norms. Proper practice is understood to be necessary, in part to maintain appropriate reciprocal relations that ensure ecological health and the availability of materials, and to ensure the well-being of the weaver, the weaver's people, and even of all the Earth...In short, basketweaving is a vital aspect of a living, dynamic culture and its continued practice contributes to the persistence and flourishing of California Native peoples....

Dominant society evaluators likely see several possibilities for avoiding the risks that basketweaving has come to entail. It is likely that those in the dominant society can quite readily imagine substitute sources of basketry materials, substitute gathering and weaving methods that would entail lesser exposure (e.g., avoid holding grasses in one's mouth; don gloves) or even substitute activities for basketweaving altogether that occasion little or no harm. While dominant society evaluators might understand these measures to involve some loss, particularly if one were required to give up basketweaving altogether, their understandings are likely to differ from those of California Indian basketweavers not only as to degree but also as to kind. That is, dominant society evaluators may perceive these measures to impose costs that are minimal and that involve losses only in terms of money (perhaps substitute materials are more expensive to purchase); convenience (perhaps substitute materials are not obtainable at the neighborhood craft store; perhaps substitute methods are unwieldy and time-consuming to work with); or predilection (perhaps alternative hobbies are somewhat less enjoyable or fulfilling).

For California Indian basketweavers, on the other hand, such risk avoidance

measures would likely occasion great anguish and considerable loss. Indeed, such "substitutes" might be unthinkable...[They] would suffer grave loss if risk avoidance meant an inability to tend and use traditional materials from customary gathering places, or if risk avoidance required altered or mediated gathering and weaving methods. ...

Fishing and Fish Consumption..

For dominant society evaluators, fishing is likely to be viewed primarily as a recreational pursuit and secondarily as an economic activity. Fishing is therefore likely to be understood as a pursuit that is not necessary for most practitioners, but important for recreational or economic reasons for some. Fish are likely to be recognized by those in the dominant society as a palatable, efficient, and relatively inexpensive source of protein and other nutrients for humans, although not the only such source. Fish consumption is therefore likely to be valued, but unlikely to be thought indispensable.

For Native peoples of the Pacific Northwest, by contrast, the various aspects of fishing are constitutive of their identity as peoples. Fish, fishing, and fish consumption are understood to be vital for the physical, social, economic, political, spiritual, and cultural health of these peoples and their members. Proper practice includes protecting and tending to fish and shellfish habitat, fishing for or gathering fish and shellfish, preparing, consuming and using fish and shellfish, all attended by appropriate methods, prayers, and ceremonies. Fish, fishing, and fish consumption are understood to be necessary, an indispensable part of what it means to be Nez Perce or Nisqually....

Dominant society evaluators are likely to believe that there are a host of alternatives to fishing and substitutes for eating fish, each of which might involve some costs, but all of which would be reasonable means of avoiding the risks that fishing and fish consumption have come to entail. To the extent that the dominant society views fishing as a recreational pursuit, fishing in different places, practicing "catch and release" fishing, or taking up alternative pastimes might suit nearly as well. Because the dominant society is less likely to attach any significance to the consumption of particular species or parts of fish and shellfish, risk avoidance measures that advised against consumption of certain species or certain parts would be unproblematic, apart from small compromises in terms of money (perhaps the prohibited species is less expensive to purchase or catch) and predilection (perhaps the prohibited part is a delicacy). Similarly, because the dominant society is less likely to consume fish and shellfish at particular times and frequencies in accordance with seasonal availability or ceremonial requirements, risk avoidance measures that entail consuming at reduced rates or measured frequencies (e.g., "eat no more than one fish meal per week") would visit little or no hardship on its members, although it might entail some inconvenience (perhaps it is difficult to identify dietary substitutes that provide the nutritional benefits of fish)....

From the perspectives of the various Native peoples of the Pacific Northwest, such risk avoidance measures would occasion profound loss. Given that fish, fishing, and fish consumption is part of who these peoples are, it is simply not fathomable for them to avoid the attendant risks by ceasing to fish and eat fish. Indeed, it would be

unthinkable...It would also not be appropriate or possible in most cases to fish "elsewhere." As the Columbia River Inter-Tribal Fish Commission explains: "Salmon and the rivers they use are part of our sense of place. The Creator put us here where the salmon return. We are obliged to remain and to protect this place." Moreover, various tribes' aboriginal and treaty-based claims to the fish and other resources are tied to specific places; the legal protections that flow from these claims cannot simply be re-established somewhere else....

As agencies and others have contemplated various risk avoidance measures, they have largely failed to ask or to acknowledge who is likely to have to undertake avoidance. Such an inquiry would reveal that indigenous peoples are in many cases disproportionately among those who will be burdened by avoidance....This is the case, for example, with respect to fish consumption advisories. Agencies have embraced risk avoidance in the form of fish consumption advisories, either without cognizance of or without concern for the deeply troubling consequences for indigenous peoples...Agencies and others have assessed the move toward greater regulatory reliance on fish consumption advisories by reference to the values and decisional frameworks of the dominant society. Decision makers implicitly or explicitly weigh the costs and benefits of risk avoidance relative to the costs and benefits of risk reduction, with both "costs" and "benefits" typically assessed in the aggregate and defined narrowly, according to the values and experiences of the dominant society....

Operating within this framework, agencies decline to register indigenous peoples' protests to it, whether revealed by indigenous peoples' refusal to comply with advisories or lodged by express statements indicating the anguish that would accompany risk avoidance... Thus, for example, indigenous risk-bearers have refused to "comply" with or "adhere" to fish consumption advisories, continuing to consume and use fish according to traditional and cultural practices. Tribes and tribal groups have also denied the applicability of federal and state advisories to resources relied upon by their members. Often, these actions are accompanied by express statements characterizing the protest as such. Moreover, indigenous people have explained that their noncompliance is not a matter of failed risk communication--i.e., it is not that the advisories have not reached their "target audience" nor that the audience has failed to comprehend the recommendations--but an indication of the impossibility of complying and the inappropriateness of advisories and avoidance as a response to risk from environmental contamination...Whereas agencies have recently made commendable efforts to solicit the perspectives of non-dominant groups regarding fish consumption advisories, they have for the most part channeled this information into efforts to improve risk communication, with the aim of enhancing compliance and the efficacy of risk avoidance. Even where agencies have registered to some degree the existence of cultural differences between indigenous risk-bearers and the dominant society, agencies have done so by tinkering at the margins with the content of advisories in an attempt to make them more "culturally appropriate" (perhaps by deleting suggested alternative preparation methods that are culturally inapt, or by revising language to reflect local usage or language(s)). At the same time, agencies have persisted in assuming the presence of a meaningful choice for indigenous peoples as to whether and how to consume and use fish...

