



# Ecological Literacy: Damaged Environments and Damaged Children

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***Abstract:** The legacy of the modern era is seen in our landscape and in our children. As we think about future generations, can we envision a different legacy for them? Required is that we understand what we have done and what has been done to us. And that changes are required to design systems that will have very different outcomes. The focus in education on special needs is understandable. Rising numbers of children are diagnosed with obvious and subtle conditions that affect life, learning and potential. Yet, in our effort to address the consequences of a way of living, we need to be careful not to accept as inevitable the continuance of that system and to be complicit in its survival.*

***Keywords:** toxic exposure, victimization and special education.*

The historic shift to a synthetic environment after the Second World War has meant a dramatic increase in the general exposure to hazardous materials. I grew up in a coal mining and steel production region of Pennsylvania that may bear some resemblance to the Ostrava region. Environmental disease in my region preceded the broader shift and I expect it did here as well. Yet, the lesson of environmental disease has largely gone unaddressed even in such regions where it is strikingly clear.

It is not my intent to provide the epidemiological evidence for environmental health problems nor to expend great effort describing the details of health problems. I want to talk about broad trends.

The first wave of concern over environmental disease was focused on other species and the problems for reproduction and viability caused due to chemical exposures. In the U.S. Rachel Carson singlehandedly woke up the nation to the dangers of pesticides such as DDT. In the midst of her becoming a celebrity for her work, she died of cancer.

The next wave of concern over toxic exposures was fittingly focused on cancers. Indeed, there has been a dramatic increase in cancers, with the most significant in the U.S. being breast cancer for women and prostate cancer for men. Much of the focus in the U.S. has been on treatment of these cancers, resulting in much improved survivability. But there has been insufficient attention to the cause of the cancers and how to protect people from the causal conditions. We scant understand exposures; the issue of cause is complicated by the fact that most cancers have multiple possible causes and people are exposed to a wide range of hazards that may well interact in complex ways. The result is that rarely can we peg the cause with sufficient clarity given the scant exposure information that we collect. In contrast, the victims are quite clear.

In the 1980s a new wave of concern was spurred by an excellent book called „Our stolen Future.“ The issues raised in this work included other effects of chemical exposures for organisms, including the confounding of sexual development by estrogenic chemicals and other hormone mimicry. These findings helped to account for the fact that human reproduction has become highly problematic in industrialized

nations due to such factors as falling sperm counts. And sexual characteristics have become confused with the historic divide of humanity between men and women moving toward a continuum, with unknown long term consequences. These same problems are found in other species, some times with horrible and identifiable consequences.

There have been other waves of concern to follow. These include the notable rise for children of conditions such as attention deficit disorder, asthma, autism and learning disabilities. To some degree these rising numbers are due to more testing and reporting. But one must assume that they are in some ways accurate. These illnesses are in part a reflection of the vulnerability of immature bodies to chemical impacts, to childrens' higher levels of respiration, to the tendency of children to put things in their mouths, and so on. Their susceptibility makes them perfect victims.

I have been studying the psychological and social consequences of toxic exposure, particularly in residential settings, for more than 30 years. In case after case of families involuntarily exposed to known environmental hazards, mothers in particular have taken special precautions to be protective of their children. This result is so prevalent that we can say with confidence that parents will tolerate considerable personal risk but much much less risk for their offspring.

These incidents of toxic exposure entail a situation I call Environmental Turbulence. People are interrupted from their normal lives by notification or news that they and their families have been exposed to a hazard. Many have trouble believing the notification initially, but most come around to accepting the bad news as accurate. They subsequently make their children the focus of their concerns and of any protective actions.

The nature of environmental turbulence is to awaken people from the complacency of normal everyday life. Things formerly taken for granted now become a matter of preoccupation. Parents forbid their children from going into contaminated spaces. Young children are not allowed to play on floors or in the back yard. They may obsess with the quality of the water and with exposure during showers. They shift to a much more precautionary approach, assuming that a situation may be hazardous rather than assuming it is safe.

These responses routinely occur with regard to contaminated communities, publicly known and identified. Thus, particular places and points of contact arouse concern. Yet, there is no comparable disregard for the overall toxic nature of the synthetic environment within which children are reared, including the food they eat, the water they drink, the air they breathe, the clothes they wear, the buildings they live in and the playground down the block. When a shipment of toys from China is proven toxic, there is a flood of concern about children playing with them. Yet, the baseline environment is assumed safe; it is only the exceptions that are feared.

This brings me to the point at hand. Educators everywhere have been overwhelmed by demands that they address children with special needs. While special needs may have known causes, in most cases, we have no clue. The symptomology is clear, the causality is unknown.

The shift in education to address special needs and disabilities is appropriate given the demand. Yet, it is unmatched by a level of effort to prevent the exposures to begin with. Our environments are out of our control and yet the resulting sense of being disabled does not sufficiently motivate the response of retaking control. Given the structure of everyday life, the stress and demands on time, we tolerate the situation as being outside

our range of control. It is easier to treat symptoms than to shut the whole system down to address their cause. In short, children become guinea pigs under such conditions.

While there is no doubt that already impacted children need to be handled accordingly, the current acceptance of the rising rates of adverse symptomology demands pause. Parents and educators alike chose to accept the incidence of problems as though they themselves were disabled and had no choice. As a result, the level of public will required to make dramatic changes in the ways things are being done is absent. In fact, the effort to remediate the consequences contributes to the protection of the causes. The system of victimization become normative. Maintaining the problem is now required to maintain the client systems that depend upon its incidence.

Among the consequences of aiming education at the needs of „exceptional children“ is the growing failure to create the kinds of anticipatory and critical minds that one hopes to encounter in college. We no longer teach to the bright given our expectation that most have learning deficits. We thus tolerate a double failure. First, we fail those who are disabled by not sufficiently understanding the source of their disability and thus our ability to prevent reoccurrence or create the conditions for recovery and reversal. Additionally, by lowering the critical nature of our educational expectations, we give up on the ability of society to develop levels of educational achievement needed to have a corrective social process. We maintain the problematic system and at the same time we tolerate problems against which we would rebel if thought we knew some villain was victimizing us. Because we are complicit in the system, we however have become complicit ourselves.

In this way, we can see the dramatic rise of special education as adaptation to the disabling process rather than a rejection of the situations that cause the problem to begin with. Carried to its extreme, a major sector of society comes to be dependent on the problem's continuance for their livelihood or at least chosen path.

I recently served as the prime editor for a book comparing cultures of contamination in the U.S. and Russia. A fascinating emergent realization from this effort suggested that Russians lack any expectation that they can control the hazards that confront them. They accept fate no matter how unpleasant. It follows that advanced efforts have been developed to help build the condition of children to withstand the inevitable pollutants. In contrast, Americans tend to assume that dangers can be controlled and that a major effort to do so is expected. We do not expect children or adults to have to adapt to situations we find to be unacceptable. Or at least, that is what we think we expect.

In contradiction, however, it would appear that Americans also accept the cards that are handed them. Here it is not due to fatalism or disempowerment as much as to inattention, apathy, trust of product manufactures or some other process by which the hazard is either not recognized or accepted. Hazard has been normalized.

In making this statement, I contradict the expectations of Ulrich Beck, the German risk theorist who, in his book *The Risk Society*, argues that the modern era has itself become the source of hazards that modern people most fear. My own work shows that rather than widespread fear, people pay little attention to their environmental conditions until confronted with adverse conditions that they are forced to accept and address. It takes Environmental Turbulence to shake people out of their complacency and acceptance of baseline conditions as normal and therefore as safe as one can get.

In conclusion, as we adapt to what may be an epidemic of diagnosed symptoms, we must pause to ask its origins and what can be done to stop it. Our normal synthetic lives

have placed toxins everywhere. These ubiquitous substances tend to persist in the environment because no organisms have evolved to consume them. They tend to bioaccumulate in animals increasing toward the top of the food chain. And so we all become personal storehouses for the very substances that we wish to avoid.

It will require fundamental reorganization and reorientation of the society, its places and products to begin to get a handle on this situation. If you are addressing the resulting disabilities that afflict children today, then perhaps you can be a force for change and reform demanding that our children be raised in non-toxic environments. The European adoption of the Precautionary Principle gives you a greater advantage in seeking to do this than I myself have with them.

References upon request.

## Curriculum



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