

Peninsula Community Foundation
Center for Venture Philanthropy
Environmental Solutions Forum
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Environmental Literacy: An Accident Waiting to Happen?
Keynote Address by Jack Chin*

Thank you for asking me to speak this afternoon about environmental education. I'm especially grateful to have this opportunity since, in large part, it has been *in* and *from* this special place – the San Francisco Peninsula – that I have learned so much about the natural world and our relationship with it.

Like some of you, I came to the Bay Area not knowing that I would stay. But I fell in love at first sight with the rolling green foothills, the towering redwoods, the rugged Pacific coastline, the delicate elegance of a maidenhair fern, the intricate web of life of the salt marsh ecosystem.

I am not alone, of course, in being seduced in this way – there are many of us “invasive species” who have decided to make this corner of the Earth our home. The out-migration of pink-slipped dot-commers notwithstanding, there are sure to be increasing stresses placed on the abundant but finite natural assets – both local and global – that sustain the exceptional quality of life in the Bay Area. To preserve what makes this place so special, and to do so without being unfair to other current and future inhabitants of this planet, we will need an educated and engaged public to support and implement environmentally friendly practices, both institutionally and individually.

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Let me start making the case for environmental education here in Silicon Valley by taking us to the other side of the world. Earlier this month, government officials, business executives and nonprofit leaders from over 100 nations met in Johannesburg, South Africa at the World Summit on Sustainable Development. The 21,000 participants deliberated on some of the Earth's most pressing economic, social and environmental challenges: basic issues such as safe drinking water, clean energy, viable fisheries, protected biodiversity, proper sanitation, sustained agricultural production, enhanced women's health, among many other issues. You may have seen something about the Summit on the news...

Then again, you might not have. There wasn't a whole lot of coverage in the media – and what there was came late in the news program or was buried in the international news section.

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Granted, there is a lot going on these days – but even on slow news days, the tendency of the media to focus on the sensational and immediate, rather than on the elemental and less urgent, limits the coverage of environmental issues.

That, in a nutshell, is the challenge for us. If our goal, as was articulated at another United Nations conference 25 years ago¹, is to develop a population that can work individually and collectively toward solutions of current environmental problems and prevention of new ones, we have a lot of work to do.

Studies show that Americans get most of their environmental information from the media². Perhaps not so coincidentally, other studies indicate that the level of environmental literacy among Americans is low to moderate at best³. Whether we are concerned about global climate change or preservation of the San Bruno Mountain elfin butterfly, we need a public that is better educated about the environment and motivated to take environmentally responsible actions.

As with other aspects of a democratic society, an educated public is necessary to support good public policy, to make conscientious consumer choices, to engage willfully in civic activities, to pass on an environmental ethic. Unfortunately, members of the American public typically experience environmental education in an episodic fashion. Television “sound bites” on their own don’t convince voters to support statewide parks bond measures. Public service announcements have not gotten folks out of their cars. One trip to a nature center does not make someone a lifelong steward of the environment. The slogan, “Reduce, reuse, recycle,” is only another set of buzzwords. Though we might wish otherwise, educating a population requires a longer-term, more concerted effort.

So what will it take?... How do we develop an environmentally literate population?

Perhaps it would be instructive to look at an example of how NOT to become environmentally literate. Let me present Exhibit A... Jack Chin! At the risk of drawing overly generalized conclusions from a very biased sample of one, please indulge me for a few minutes as I convey to you how I learned about the environment.

I grew up in Queens, New York in a Chinese laundry. Across the street was my greenbelt – the Maple Grove Cemetery. My little piece of wilderness was the drainage culvert alongside the Long Island Railroad tracks. As the commuter trains rumbled past on their way to Penn Station, I was discovering tadpoles, praying mantis and monarch butterfly amid the cattails and milkweed.

My first bit of environmental activism was convincing my mom to buy a jar of grape jelly at the kosher deli next door. For every label mailed in, Welch’s donated five cents to the campaign to save the bald eagle. The first Earth Day took place when I was nine – we learned in current events class about the efforts to pass the Clean Air Act and Clean Water Act. My first overnight camping experience – and the first time I saw the Milky Way – came the summer after my senior year in high school, when I served on a Student Conservation Association trail crew at Acadia National Park in Maine.

These seeds of environmental literacy sprouted and flourished when I made my way to Stanford. Through formal classes and extracurricular pursuits, I learned about the interdependence of human and natural systems. Coursework ranging from applied earth sciences to urban studies provided the academic base; internships at Hidden Villa, Yosemite National Park and the Rocky Mountain Biological Laboratory gave me hands-on learning experiences.

While at Stanford, I had the good fortune to meet two people who modeled for me a passionate devotion to understanding and preserving the natural environment. I took a class from local naturalist Herb Dengler who taught me everything there is to know about the Bay Area's natural history, from *Accipiter cooperii* (Cooper's Hawk) to *Zigadenus fremontii* (Fremont's Lily). And I served as a teaching assistant to Denis Hayes, Chairman of Earth Day, who was then attending law school and teaching the environmental policy course. Their examples guide me to this day.

These various and sundry experiences *somehow* came together to inform and inspire me to strive for the environmentally-right thing: To eat organic foods; to landscape with native, drought-tolerant plants; to take public transit as much as possible; to purchase an Energy Star washing machine; to share a sense of wonder with my sons, Neil and Nevin, as they delight in playing with "roll-y-poll-y" bugs in the dirt or spotting a red-tailed hawk spiraling overhead.

My own environmental education has led me to be more conscious of the consequences of my everyday choices: should I gas up at BP or Shell? Order Chilean sea bass or local, line-caught salmon? Buy cloth diapers or disposable? Invest in a socially responsible mutual fund or one with high returns over the last 12 months? I have to admit that I don't always make the "correct" choice, but I do try to think about the choice, about how that choice affects the environment.

It is my hope that more of my Bay Area neighbors act in similar ways because it's the aggregated, individual actions across a population that account for most environmental impacts. Case in point: the National Academy of Sciences has found that every eight months, the equivalent of an Exxon *Valdez* oil spill is carried to sea by stream and sewer as a result of thousands of tiny, individual releases by ordinary Americans. While agencies monitor sources of runoff pollution from specific or point sources such as industrial facilities, no agency is appointed to police the non-point runoff. I would not advocate for such an agency. The most effective solution, I would argue, is for each person to monitor his or her own behavior.

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Let me now return to something I said earlier. I did say that I am an example of how NOT to become environmentally literate. What did I mean by that? The truth of the matter is that my experience has been a long series of accidents...

If I hadn't spent many hours as a kid exploring that drainage culvert, who knows? A University of Michigan study found that in 1997 kids spent, on average, only 42 minutes per week in unstructured activity outdoors.⁴ Kids' lives nowadays tend to be programmed, whether it's soccer practice and Sylvan Learning Labs in more affluent communities or latchkey programs in blue-collar neighborhoods. In either case, youngsters rarely touch the natural earth.

If I hadn't been a child of the 60s, who knows? By the end of that first decade of environmentalism, nearly everyone became concerned about the environment. Smokestacks belching out black smoke and rivers catching on fire were easy images around which to grab public attention. In 1989, three-quarters of Americans considered themselves environmentalists; by 1999, that figure had dropped to only 50%.⁵ An ABC News/Washington Post poll conducted this past January found that while Americans believe protecting the environment should be a high legislative priority, environmental issues rank #9 on the list of top ten policy concerns.⁶ Part of the explanation is the fact that environmental issues today are much, much more nuanced. Genetically modified organisms and ecosystem management strategies are not easy issues for the public to understand, much less take a stand on.

If I hadn't seen the Student Conservation Association poster on a bulletin board in my high school, who knows? I would not have had the opportunity to work for four weeks alongside eleven other young people from around the country in building trails and restoring habitat, learning in the process that you really can make a difference, that you really can make a place better than it was when you first arrived.

If I hadn't come to the Bay Area on a gorgeous spring weekend for a campus visit, who knows? My visit to Ithaca the preceding week had been cold and dreary. Now Cornell probably would have provided me with a perfectly fine education. Nevertheless, I'm thankful for the bit of serendipity that allowed me to meet Herb Dengler and Denis Hayes, and spend time at Hidden Villa carrying out my undergraduate and graduate research projects.

Unfortunately, my environmental education experience - this long series of accidents - is not unusual. In its report to Congress, the National Environmental Education Advisory Council⁷ found that most American's environmental education experiences are just as diffuse and fragmented, just as accidental.

Now one can take the Zen approach, which someone once told me views Enlightenment as an *accident*, and that we just need to be more *accident-prone* to achieve it! Perhaps another way of phrasing it is we need to be more *intentional* in providing environmental education opportunities. If we were to design a more systematic environmental education strategy for the general public, what would be key considerations? Drawing from my experience, but also from environmental education research and practice, I'd like to offer the following:

- Start early. Make it possible for young children to develop a kinship with the natural world. These early years should be about evoking a sense of wonder. My son, Neil, loves to build houses of leaves in our garden for the beetles.
- Be immersed in the landscape. Starting around age eight, young people should have the chance to get to know a place really well as I did mucking around the LIRR right-of-way. Sense of belonging and sense of place are key at this point.
- Make a difference. For adults – young and old – we need opportunities to get involved and contribute to improving the environment. Seeing first-hand that change on a small scale can come about will motivate more

positive behavior. My summer working on trails in Maine led to a sense of accomplishment, a sense of hope, and a sense of responsibility.

- Reinforce regularly. These types of experiences need to occur consistently over time – from pre-school into adulthood – so that the understanding and motivation gained at each stage of life become ingrained. As I said, my enlightenment came by accident; let's figure out ways to make environmental education more routine.
- Set the norm. Being environmentally literate and responsible should become the rule. For young people, peers and role models are important opinion leaders in this regard. I was lucky to have adventuresome friends and supportive adults along the way who helped nurture my interest in the environment. And let's not forget the media, which send powerful signals to all of us in defining what's socially acceptable.

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How does all this pertain to the Environmental Solutions Forum?

As mentioned earlier, we are blessed to be living in a region with such abundant natural beauty - we certainly have ample reason to work toward sustaining this extraordinary place. And indeed, there are numerous organizations devoted to informing the public about our local environment – over 70 organizations in San Mateo and Santa Clara County alone⁸. With nearly 2.4 million people⁹ living in the two counties, new ways of working together are needed to ensure that a significant portion of the public receives the continuous and consistent environmental education necessary to become effective environmental problem-solvers.

The Environmental Solutions Forum promotes the development of a new way. It aims to strengthen and build connections among a cohort of organizations to result in the more systematic environmental education just outlined. I think that makes good sense. Ecology teaches us that the health of an ecosystem is a product of the components in that system and the vitality of the relationships among those components. The Forum will allow organizations to learn together ways to improve their operations so that they can individually and collectively achieve larger goals. This is an important and necessary shift from the more typical project-by-project approach of supporting environmental education. The Peninsula Community Foundation, along with other community foundations like the Upper Valley Community Foundation in New England, the Community Foundation for Southeastern Michigan in the greater Detroit area and the Marin Community Foundation, are recognizing that a regional capacity-building approach will lead to much greater impact than the current piecemeal approach.

Let me use one final personal anecdote to illustrate the importance of the capacity-building approach that the Foundation has so wisely adopted.

When I wasn't tromping around in that railroad drainage ditch, I spent a lot of time as a kid on my ham radio set seeking to make contact with folks in far away places like the South Pacific or Antarctica. My success in establishing contact was usually a function of what is called the signal-to-noise ratio. This works in two ways. First, the signal that I transmitted needed to be distinct

enough so as to be heard through the noise – whether that noise was static or the signals of others trying to get through. Second, the receiver on the other end had to be sensitive enough to detect my signal, even when it was a weak one.

By analogy, environmental education messages – whether sent through public service announcements or field trips to the nature center – are easily lost in the noise of our information-age culture. The National Science Foundation estimates that the average child is exposed to about 20,000 television commercials each year.¹⁰ The signals for consumption create a lot of noise, overwhelming the signals for conservation. We need to increase the wattage and align the transmitters (as it were) so that environmental education organizations can reinforce, strengthen and otherwise enhance their signals and thereby increase the probability of getting through.

Equally important, if environmental education organizations can be supported to reach a wider audience over a prolonged period of time, the recipients of the messages will be conditioned to tune in better – they will be more likely to pick out the messages even though they may not be the strongest ones.

What the Peninsula Community Foundation and its Center for Venture Philanthropy plan to do through the Environmental Solutions Forum promises to improve the signal-to-noise ratio. Stronger organizations will deliver programs in more effective ways, informing and influencing the public to be more environmentally responsible. Once achieved, we will be much further along the path toward a regional population that can solve environmental problems and prevent new ones. What better role for a community foundation than to promote efforts that would preserve the local quality of life for current and future generations. And at the same time, enable our community to leave less of an impact on the other communities – both human and non-human – with whom we share the planet.

Moreover, I would suggest that there is another potential benefit that extends beyond the Bay Area. Getting the signals for conservation through the noise is necessary but not sufficient. For even if the message is decipherable, both transmitter and receiver need to use the same language. As we have seen in international environmental conferences such as the recent one in Johannesburg, developing a world population that is committed to environmental sustainability is a monumental challenge. One recent presidential candidate even argued that it is the single most important challenge facing humanity.¹¹

Along with the rich natural assets that we have in this region, we also have a wide diversity of racial, ethnic and cultural groups, truly making the Bay Area a microcosm of the world. We have an opportunity to develop ways of working together across all these social categories to increase environmental literacy. Here on the San Francisco Peninsula, the Environmental Solutions Forum might very well contribute toward a model of a more inclusive, as well as more extensive, environmental education.

In so doing, we will act locally, *impact* globally. Thank you for letting me share these thoughts with you. I look forward to hearing your questions and comments.

Endnotes

¹ Tbilisi Declaration, UNESCO conference, 1977

² National Environmental Education and Training Foundation

³ Volk, Trudi L. and Bill McBeth. (1998). *Environmental Education in the United States – What Should Be...What Is... Getting from Here to There*. Rock Spring, GA: North American Association for Environmental Education.

⁴ Fishman, C. (May 1999). The Smorgasbord Generation. *American Demographics*, p. 54-60.

⁵ http://www.publicagenda.org/issues/overview.cfm?issue_type=environment

⁶ http://www.publicagenda.org/issues/pcc_detail.cfm?issue_type=environment&list=1

⁷ National Environmental Education Advisory Council. (September 2000). Report to Congress (draft). Washington, DC: U.S. Environmental Protection Agency, Environmental Education Division

⁸ Research for Peninsula Community Foundation by Susan Stanaway

⁹ Census data as cited by the Association of Bay Area Governments

¹⁰ As cited in http://www.penpages.psu.edu/penpages_reference/28507/285071819.HTML

¹¹ Al Gore, in his book *Earth in Balance*