

## TRADUCCION 2007 CSACE

The more popular and entertaining aquariums become, the more supporters insist that they educate and inspire conservation. And the more critics worry that aquariums are actually acting as enticing, crystal-clear substitutes for dying oceans.

In that regard, the Georgia Aquarium was particularly ambitious, building the world's biggest fish tank to accommodate a display of the world's biggest fish, the whale shark, which can grow longer than 60 feet and about which little is known.

Biologists warned that they could not yet explain the dappled creature's penchant for sinking to depths of 3,000 feet or more, a feat that not even a \$300 million aquarium could accommodate. But aquarium officials countered that the whale sharks — there were four — were saved from the dinner table, bought from Taiwanese fishermen who have an annual catch limit. Their presence, it was promised, would let researchers examine the species up close for the first time. Certainly the aquarium has increased public awareness of a species that few had heard of and that scientists have yet to observe mating or giving birth.

But in January, the attention shifted from positive to negative: Ralph the whale shark, an adolescent, died.

Responding to the outcry, Jeffery S. Swanagan, the aquarium's president and executive director, wrote in *The Atlanta Journal-Constitution* that the display had opened "the hearts and minds" of visitors, created a "special bond" between them and the animals and inspired the public to conserve threatened marine environments.

Critics argue that aquariums have the opposite effect: as exhibits grow more technologically sophisticated, they implicitly suggest that oceans are disposable. "What they say is, the natural habitat doesn't matter," said Randy Malamud, an English professor at Georgia State University and the author of "Reading Zoos" (New York University Press, 1998). "That the awe and mystery of the animal's life — which is so much dependent on the animal's living where it lives — that that's all irrelevant and can be dispensed with for our convenient consumption."

Bernard Marcus, the co-founder of Home Depot who built the Georgia Aquarium as a gift to the city, went so far as to promise that it would improve on nature, giving fish a leisurely and worry-free existence. "This is like going to the Ritz-Carlton," he said before the grand opening. "If you ask them do they want to go back to the ocean, you know what they would say? 'Are you crazy?'"

The details of Ralph's death, provided a glimpse of a not-so-luxurious life. Ralph, who stopped eating after the tanks were chemically treated for parasites, had been force-fed for months — apparently a common practice at aquariums, even for tiny creatures like sea horses.

"Sometimes in science we learn as much through death as through life," Mr. Swanagan wrote. In Ralph's case, one thing we learned was that he died of a perforated stomach,

most likely caused by the feeding tube.

Yet some scientists argue that the knowledge that can be gleaned from animals in captivity primarily improves their care in captivity.

If aquariums are hard on ....., they provide a nurturing home for the rosy notion that humans can not only control nature, but improve on it.

In an essay published in *The Believer* in 2005 before the Georgia Aquarium opened, Ginger Strand catalogs the relationship between aquariums and ruined ecosystems: the Monterey Bay Aquarium in California is on the old Cannery Row, made obsolete by the depletion of sardine stocks; the Alaska SeaLife Center in Seward was paid for largely by the Exxon Valdez Oil Spill

But the aquarium café serves only sustainable seafood, and you can deposit your ticket and map in a recycling bin as you exit through the gift shop. “The implication is that individual action” — rather than corporate responsibility — “is what counts,” Ms. Strand wrote.

John Fraser, the director of public research and evaluation for the Wildlife Conservation Society Institute, which oversees New York’s zoos and aquarium, said that critique bears no relation to what he sees. Corporations are made up of individuals, he argued — individuals

A lot of people would like zoos and aquariums to be a lot more aggressive in terms of our environmental advocacy,” he said, but sociologists have learned that moral indignation is not the only motivator to action: there must also be emotional and cognitive connections

An encounter with a living being, on the other hand, is a catalyst for action. “This,” Mr. Fraser said, “is the place where the love starts.”

# LISTENING 2007 CSACE

STEREOTYPES about national origin are the dirty secret of technology communities.

This week: Advertisers and Imus, the Predator robot plane, human growth hormone, and stock market momentum.

The riffs on nationalities go something like this: The Chinese do not invent anything; they only copy. Italians design beautiful shoes, but who ever heard of a Tuscan computer programmer? Russians dominate chess, yet cannot seem to engineer a children's toy. Germans excel when they control all variables — of a high-performance automobile. The French routinely lead in technologies that require large government subsidies. The Japanese so yearn for acceptance that individuals won't promote a new idea without the approval of their peers.

If I have offended anyone, I will not apologize. I am recycling crass stereotypes about national traits in the service of a better understanding of how innovation works.

Talk of national identity rarely comes up in public, but privately many people — from academia to venture capital firms — take for granted that the contours of a career in technology are often shaped by the national origin of the technologist.

“Though the reasons can differ a fair amount, national origin does correlate with the innovativeness of the people of a country,” says Joel Mokyr, an economic historian at Northwestern University.

When a train set a new land speed record this month by reaching an astonishing 357 miles an hour, there was no mystery about where the train's designers lived or the speed test took place.

France.

“The French government has always been very good at making things where government support is critical,” like trains, nuclear power plants and airplanes, Mr. Mokyr says. “But the French are not terribly good at creating Googles or Microsofts, where private action is central.”

The French engineering company, Alstom, after all, is the world market leader in high-speed trains. But a well-informed person would be hard-pressed to name a leading French information technology company.

Indeed, many of France's best computer brains work in Silicon Valley. These Franco-geeks, who number in the thousands, even have two associations, SiliconFrench and DBF.

"The French business system is constraining for individuals while supportive of scientists and engineers working on large, rigid systems that actually benefit from top-down decisions and slow change," says Jean-Louis Gassée, a former Apple executive who helped organize DBF and is a partner at Allegis Capital in Palo Alto, Calif.

Comprehending innovation through the prism of national identity has its risks. In the 1970s, many people dismissed the Japanese as mere imitators and failed to see how the knowledge gained from copying would lead to path-breaking technologies. The success of Toyota, Sony and Japan's vibrant animation industry provide cautionary tales for those who might dismiss entire nationalities as copycats or only as consumers of advanced innovations.

Nations can and do change, sometimes by smart planning, sometimes by serendipity. Finland, home to the mobile phone powerhouse Nokia, was an agricultural country 50 years ago. So was Ireland, now home to thriving clusters in electronics and pharmaceuticals. Ireland's investment recruitment agency is now crowing about the virtues of "the Irish mind" in a series of print ads. The most popular ad, using a drawing of the Irish rock star Bono, declares: "The Irish. Creative. Imaginative. And flexible. Agile minds with a unique capacity to innovate, without being directed."

Friends of Israel's top engineering school, Technion, are paying for a similar series of ads, which appear periodically on the Op-Ed page of this newspaper. "The brainpower of its people" is "Israel's only natural resource," one ad declares.

Mr. Mokyr notes that "these ads pertain to highly trained people." He adds: "It's not that the people of one country are inherently smarter than those of others. But some nations invest more in education, or are more efficient in producing skilled people."

Why this is so has been debated endlessly by economists since Adam Smith, the 18th-century author of "The Wealth of Nations."

There is little debate, however, that small countries are freer these days than large ones to boast about the supposed talents of their people. That is partly because larger countries can inspire fear or may have a history of invading others. Irish chauvinism seems benign, yet some people may regard praising the genius of "the German mind," for instance, as objectionable, given the history of German aggression in World War II.

Some countries are too big and diverse for easy generalizations. Talk of "the American mind" makes no sense because "the U.S. is so multicultural," says Andreas Bechtolsheim, a native of Germany and a prominent computer designer in Silicon Valley.

While migration and the flow of knowledge across borders have led to a flattening of the world, different technological strengths remain associated with different nations. So nations bent on becoming more innovative in other fields must confront their own collective strengths — and weaknesses.

And that means taking stereotypes seriously, while not being imprisoned by them.

Consider China, the fastest-growing economy. "Chinese technologists are highly sensitive to their reputation as imitators, and they are trying to find areas where they can break through," says Carlos Genardini, an American who is chief executive of Hong Kong Science and Technology Parks, an innovation incubator.

"Building the designs of others is a hard habit to break," Mr. Genardini says. Sometimes success is the enemy. "The Chinese make a good living from making the products of others," he adds. "Why change?"

One reason is political pressure. This month, the United States said it would ask the World Trade Organization to compel the Chinese government to do more to reduce, if not eliminate, factories devoted to churning out copies of American movies and other products.

Self-interest ultimately ought to persuade the Chinese that creativity trumps copying. That is because profits and industrial leadership, often go to the companies and countries that create distinct technological systems. Think Intel's microprocessor family and Microsoft's Windows operating system.

Or France's high-speed trains.

THINKING ahead, China's technologists talk openly about "a second modernization" and the importance of creativity. Yet China's creative potential is limited by the hegemony of an authoritarian Communist Party, which recently showed its muscle by issuing new warnings against Chinese use of the Internet for suspect social and political purposes. Despite exhortations to be more original, Chinese people "feel a widespread fear of stepping out of the box," says Justin O'Connor, a professor of "cultural industries" at the University of Leeds in Britain who is studying China's recent experience.

China, of course, was the world's leading technological power — 500 years ago. The grand sweep of history engenders humility and hope. National traits are fluid. Always shaped by unpredictable experience, these traits are subject to design and redesign. Just as technologists invent great products, countries invent, and reinvent, people.

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