

Reader Response

to the Spring 2008 Bulletin

The Endangered Navajo

The article on “When Diversity Vanishes” was superb. I was especially glad to see the point made by Suzanne Romaine about the extinction of languages, that “it’s not just languages that are at stake, but forms of knowledge.” Many years ago I was talking to a Navajo medicine man who bemoaned the loss of the Navajo language among the young. He said the ceremonies he performed would “not work” if performed in English instead of Navajo. He made the point that the Navajo people would cease to exist “when the last person who speaks Navajo dies,” even if there were thousands of registered Navajo tribal members still living on the Rez at that time.

He recognized that culture and language are inseparable; you can’t have one without the other. Museums can never be a “vault to preserve human culture” in the way a seed bank can preserve the genetic diversity of crops. You need living, believing, and speaking people to preserve culture; nothing less will suffice.

Douglas Preston

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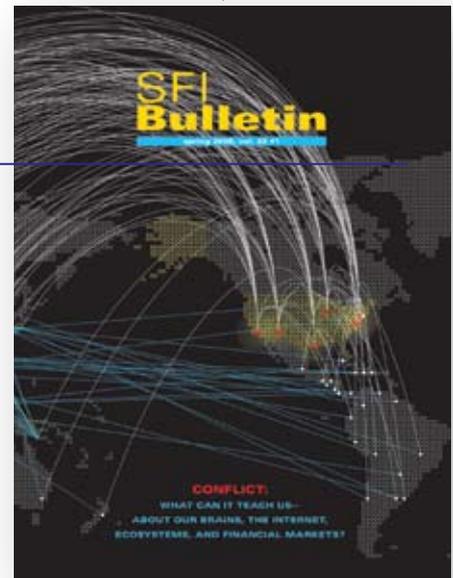
Author of The Monster of Florence and several other novels and nonfiction books.

The Transforming Self

“Know thyself,” instructed Socrates. Several centuries later, Shakespeare in *Hamlet* has Polonius exhort his son Laertes, “To thine own self be true, And it must follow, as the night the

day, Thou canst not then be false to any man” (or woman, I like to add). Clearly, an underlying assumption is that a coherent “self” exists which is possible of being known and honored. Jon Wilkins’ stimulating article “The Conflicted Brain” challenges this notion and asserts that “Every decision we make is argued by at least two distinct evolutionary “selves.” I found his argument so interesting that I requested and received an extended conversation with Jon at the Institute in order to learn more about the neuronal and genetic underpinnings of his point of view.

It won’t surprise anyone to hear that I came away from this dialogue with yet more questions than answers, and I’m hoping for a “rematch” with Jon. As a counseling psychologist for almost four decades, I have been working away, all this time, with the self of each of my patients. For years I’ve looked at all this material of human existence and daily lives, as though lived, ostensibly, by the same person who came for her 10 a.m. appointment last week, and is now here again. The unspoken assumption is that she, albeit changed a bit perhaps, is nonetheless still the same person who walked in and sat down in that chair last week. Now, I’m reconsidering a working definition of the self. I recall the dictum that the more things change, the more they remain the same. I’m toying with the notion that the self might be like that, that what is constant is the emergent property



of change. Does this make any sense? What do other readers out there think? I would enjoy talking about this, a work-in-progress.

Penelope Penland

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Large May Be Smart But Small is Beautiful

Well, if you live long enough most things get turned on their head. British economist E.F. Schumacher popularized the notion of “Small is Beautiful” in his 1973 book by that name, which, as far as economic development is concerned, is largely debunked by your recent article “Cities: Large is Smart.”

What Professor Bettencourt et al. call “scaling,” *The Economist* recently called “lumping,” as in “Lump Together and Like It” (Nov. 8, 2008), based on the World Bank’s latest annual *World Development Report*. The article suggests that “third-world cities grow so big and so fast precisely because they generate vast economic advantages, and that these gains may be increasing.”

This is refreshing stuff. In the past, green concerns have encouraged anti-development beliefs, which could lead to people frowning on such counter-intuitive findings that Big is Beautiful, as far as cities go. That such concentrated development might not only help pull people out of poverty but be green-friendly as well is definitely a new viewpoint. Humans are funny birds and they just seem disposed to bunking and bulking up—in lumps. And when scale economies run out, well, we just innovate to revitalize.

Despite being an optimist, I still feel mildly queasy when the researchers suggest that cities can “grow indefinitely” through innovation or wealth creation. As the article noted, by 2007 Buenos Aires, Calcutta, Mexico City, and São Paulo were losing, not gaining, population. *The Economist* provided a potential answer when it averred that such cities rise “fast until they [make] up about a quarter of their countries’ population, then [stabilize] when the country’s income hits about \$5,000 per person.”

Alas, all growth rates must flag, in spite of Viagra-like innovations. I, for one, after living over five years in both New York and São Paulo, with metro areas around 19 million, moved to a colonial town of 7,000 inhabitants in the interior of Brazil, adding to São Paulo’s exodus. Small can still be beautiful, depending on who’s looking at it.

Ben Batchelder

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Individualized Computing

While reading the article “Malware

Wars,” I was struck by the repeated biological reference to malware as a quickly evolving “parasite” on the Internet host. Stephanie Forrest and others have pointed out an aspect of computer security that needs more attention: The increasing lack of diversity in the computing environments participating in the Internet is making the chance of large scale “infection” more likely. In computing, it makes little economic sense to support many ways of doing the same thing, so Forrest suggests a means of making each computer’s software execution environment unique through the use of special compilers and the scrambling of other system properties such as the names and locations of system files.

We already naturally have this situation in the differences between the various flavors of the surviving operating systems: Windows, Linux, AIX, HP-UX, Solaris, BSD, etc. For instance, though there are trojans, worms, and viruses for OS X (a BSD variant), these are few and far between. Of course, if Apple had the market share that Microsoft currently enjoys, it is likely that there would be more. But maybe this is the point: having more, less commonly used systems may be ultimately more robust. As Robert Gleichauf points out, we are

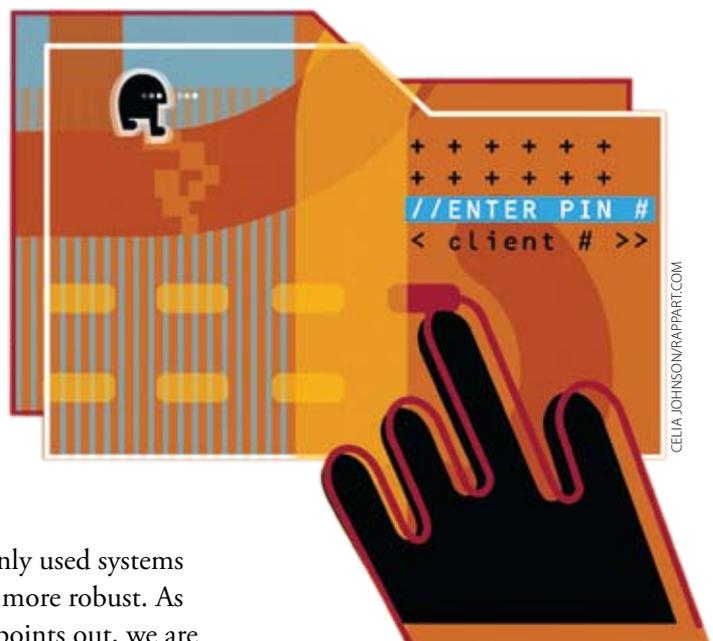
actually moving toward having more different computing environments participating in the Internet with the rise of portables such as phones and Internet tablets and other so-called net appliances.

All of this leads to a very basic question: How do we encourage diversity in a world that favors economies of scale? Is there a way to make the network infrastructure itself more diverse? Natural systems seem to trade efficiency/redundancy for adaptability and robustness; how can we do the same for our own engineered systems?

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Send comments to grr@santafe.edu or Editor, SFI Bulletin, Santa Fe Institute, 1399 Hyde Park Rd., Santa Fe, NM 87501. Please include your full name, address, and daytime phone number. Published letters may be edited for length and clarity.



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