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## BOOK REVIEW

# Commute through nature makes lyrical, universal connections

By Chip Walter, Globe Correspondent, 7/17/2003

Among the more mundane rituals we face in modern life is the daily commute. Each morning millions of us stop and start our way to work hunched over the steering wheels of our cars or on various rumbling forms of mass transit, nodding off, reading the paper, or transfixed by the sounds vibrating through our headsets. But in his latest book, "The Path: A One-Mile Walk Through the Universe," physicist Chet Raymo reveals that there are other kinds of commutes in the world, and to prove it he transforms his own daily trip to the office into a lyric and affectionate tour of the universe and the natural world that unfolds within it.

Every morning of his adult life Raymo has walked down his tree-lined street in the village of North Easton and then through nearby woods and meadows until he arrives one mile later at the campus of Stonehill College, where he has taught physics and astronomy for 37 years.

Many of us might make this walk and never think twice about it, but Raymo's curiosity and the sheer Zenlike experience of covering the same exact ground for so many years lead him to spin whimsical parables that make unexpected connections. Everywhere along this path he sees the interlocked nature of the history, forces, and phenomena that surround us. Flowers, rocks, ponds, and animals become an elaborate index for exploring everything from global warming to the birth of stars and the mysteries of water.

It's a clever conceit to take the common things around us and use them to track down big mysteries. But what is also impressive is how Raymo takes those things and uses them to illustrate how we and nature and the universe are all collaborators, deeply interwoven, impossible to disconnect. As he walks through the nearby woods, for example, the Canada mayflower becomes a platform for launching into an explanation of the sun's pyrotechnics and how the alchemy of photosynthesis taps them to create the intricate ecosystems that sustain us. He explains why we consist of the shrapnel of detonated suns, composed of the carbon, oxygen, and iron atoms that supernovas generated billions of years ago, now turned conscious.

The book is broken down into the linear chunks of his daily journey -- the village of North Easton; the Queset Brook, which runs through town; the meadow between his house and Stonehill -- but these are really artificial markers. In such a collaborative world, nothing can really be as purely linear as a path. He recalls, for example, watching bluebirds grow in past springs from eggs to fledglings, and he wonders about the power of genetics. He then connects the formation of our own DNA with nitrogen and the plants on the forest floor. Though nitrogen, which is necessary to our survival, is the most abundant element in the atmosphere, humans don't have the power to decouple its atoms from the air we breathe. Instead we have to eat plants, use the solar energy locked in them to break the nitrogen apart, and then use that to assemble our DNA. The plants, in turn, get their nitrogen from bacteria, which alone have the power to pull the stubborn nitrogen out of the atmosphere. By eating plants that live by the power of the sun -- and the good graces of lowly bacteria -- we humans gather up the amino acids that construct our DNA and make us possible. Everything circles back on itself.

Raymo, who writes the weekly column "Science Musings" for the Globe's Health/Science section, also manages to weave a good deal of New England history into his thoughts on nature and astrophysics. The small Queset Brook leads to ruminations about the force of gravity and how it once powered, at the dawn of the Industrial Revolution, the nearby Ames Shovel Factory, a fortune that built North Easton, paid Frederick Law Olmsted to landscape the meadows through which Raymo now walks, and later spearheaded the construction of the transcontinental railway. In Plymouth Rock he sees clues about the ways glaciers carved the erratic geography of New England. "Pieces of New Hampshire, Vermont and Quebec," he muses, "litter the ground beneath my feet," carried inexorably by ice created when India collided with Asia on the other side of the world 60 million years ago and set a series of global cold snaps in motion.

At its best, reading "The Path" is like walking through the woods with a docent who has made the universe his museum. The writing is eloquent and the tone unremittingly romantic, a rarity in science writing. Unfortunately, Raymo too often digresses into local history and odes to the Ames family that sometimes lead to literary cul-de-sacs. And though the path gives Raymo's insights a kind of natural structure, more scientific detail as well as more connections that we haven't seen before would make a strong book even stronger.

Nevertheless, thanks to his fusion of lyric style, scientific breadth, and personal experience, Raymo manages to transform his commute into a pleasurable metaphor for all journeys -- no longer simply a path that takes us from home to the office and back, but "*the Path, a Tao (Way), a thread that ties one human life and the universe together.*" In the end he comes to a simple but powerful conclusion: In the smallest, single phenomenon, we can, if we look closely enough, glimpse everything. On our next commute, that might be worth keeping in mind.

### **The Path: A One-Mile Walk Through the Universe**

By Chet Raymo

*Walker*, 208 pp., \$21

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