



Lines, Circles, Cycles, Spirals

By David W. Winkler

I sit today with my back to the sun, gratefully absorbing its warming rays on this shortest day of the year. Early this morning, Earth passed the point at which the Northern Hemisphere most shunned the Sun. A rigid cold air mass has engulfed Ithaca and the entire East for the past few days, bringing what even we Ithacans would call winter to as far south as Florida. Thus another winter begins, and I welcomed the solstice this morning, enriched and strengthened by the fact that the shortening of days has once again ended, that spring is only a few short months away. And, before I drop headlong into the excitement of gifts and family dinners that my children so love, this solstice put me in mind of my last solstice, the one I celebrated with friends, a continent away, just six months ago...

For the past three years, I have been privileged to be part of the Mono Basin Bird Chautauqua, a gathering of naturalists, educators, and conservationists, united in a curiosity and love for Mono Lake and the lands in its watershed. Mono lies at the border of the Sierra

Nevada and the Great Basin on the eastern edge of California, between Tahoe and Death Valley. Mono has been the wellspring of a Western conservation success story, pitting the needs for water between Los Angeles, 300 miles to the south, and the gulls and plovers that come here each year to nest. At Mono, a Public Trust Doctrine that includes the interests of wildlife and scenic values in valuing snowmelt streams has been applied to a new blending of water interests that is influencing water law throughout the West. This struggle is a long rich story told elsewhere, but birds have played a large part in enlarging the notion of public trust values, and the Chautauqua, held on the weekend nearest the Summer Solstice, celebrates the birds: what we have learned and how much more we need to know. For the Chautauqua this year, I was asked to say a few words over dinner in the Lee Vining Indian and Community Center to welcome the weekend's participants, and that experience led to this article of reflection.

I began putting together my thoughts for that talk as I drove down to Mono from Reno the previous evening, an experience that is always good for my perspective. The drive fueled my incredulity that the same human sprawl that has enveloped California west of the mountains has gained a thriving foothold in Nevada and is spreading, like a slime mold, replacing sagebrush steppe and wetlands with trophy homes and landscapes that could as well be in Tampa or Vale or Salinas. And it occurred to me that very few of the people building these houses, or living in them, were likely to be celebrating the Summer Solstice. Most people everywhere are so preoccupied with the challenges of life lived day-to-day, week-to-week, month-to-month, that their lives are one long line of commitments made and fulfilled, of relationships forged and sundered. We live life on the metaphor of a line.

But it occurred to me how strange this is. When we observe once again the longest day of the year, so few of us reflect on how inexorably will come the shorter days of autumn and winter; the transition for many, from doing things to thinking about doing them. When the sun's path stands still and begins inching its way back toward the equator, my friends in Argentina will be gearing up for another field season just as mine begins to wind down. So much of our lives here on Earth results from cosmic accident. There is no physical law that says the axis of rotation of Earth should be inclined 23.5°

from perpendicular to the plane of our orbit around the Sun. Other planets have very different angles of inclination, various directions and speeds of rotation, etc. Some cosmologists think that the angle of Earth's rotational tilt is determined by random perturbations from asteroid impacts. If this is so, then Earth may in earlier times have been very different indeed. If the tilt were less, we would have less in the seasons to mark, if it were more, our seasons would be even more extreme, with day-long darkness and midnight sun coming to a much larger part of the globe each year. The searing straight-on attack of the sun rules the tropical latitudes and drives global patterns of rain and drought, the distributions of rainforests and deserts. The sun's photons would be distributed much differently over Earth if our tilt were different. Thus, not only would the seasons be very different than now, but the same 23.5° of the tilt dictates the latitudes at which we draw the tropics of Capricorn and Cancer.

A different tilt would bring a different distribution of life on Earth, different severity of winters and delightfulness of summers. Surely this tilt, and the cycles it engenders, are worthy of reverence.

The drive along the Sierra's eastern scarp also filled me with wonder: The frank openness of the desert landscape, revealing so much that the lush abundance of my adopted Ithaca landscape hides from view. The delightful smells and light of a desert thunderstorm. In nature, materials go in cycles, circles if you will. Water up into clouds then back again as rain or snow. Materials cycle under gravity's pull back to Earth and energy screams off in straight lines. Energy fluxes in lines. The billions of photons that were enlightening the lush meadows of the Walker Valley as I passed, cruising in just above the Sierran crest and just below a bank of dark thunder clouds, had been on the surface of the sun just a little over 8 minutes before. Every one of them followed a pretty much straight path from star to planet. But even among those photons, many of them may have had slight curves in their journey: Einsteinian curves because space is not flat, and possibly grazing interactions with an air molecule or two before their sunset dance on Earth.

Perfect lines, like perfect circles, may exist only in our imaginations. And we, the strangest, most curious primates, have invented so much more: A multiplicity of gods and values. An astonishing array of languages to pass on the fruits of our imagination. We have abstracted from our experience and animal natures such things as hatred, and love. Perhaps our imaginations and abstract thoughts are responsible for the dominance of the linearity in the way we live. Humans have proved remarkably adept at creating things. Airplanes and cell phones; test tube babies and vaccines; nuclear power plants and bombs; we have both luxuriated and suffered from the extensions of our human thoughts and ambitions. Every year that the slime mold in Minden expands, I can hear jazz on the car radio ever farther toward Mono. No wonder that humans have grown accustomed to striving forward and succeeding, onward in a line of progress. It is no wonder that so few have considered the fact that mankind's time on Earth, too, will cycle past.

One of the most long-lasting inventions of man is the circle of friendship and fellowship. Lucky humans build many circles of friendships. So many of the great friendship circles in my life were started and are still anchored at Mono Lake. Summer romances that

might be better described as tiny arcs, fleeting acquaintances that may circle back many years later and grow stronger and richer; and students rooting new circles to this hallowed ground. This experience of circles bound to a place has taught me so much about what we mean by "place" and what a sense of place can come to be.

Some of the circles in our lives have raw severed ends. Being at the Chautauqua made me wish that David Gaines could be there. Gaines was with us in 1976, a stimulating presence, in the first Mono research summer. That was the summer that would eventually lead me to gather with Dave and his wife Sally to found the Mono Lake Committee in 1978. After a few months, I disappeared to graduate school, and Dave and Sally took the Committee to realize its enormous potential. Dave too was my mentor; he taught me so much: about Mozart, the Dead, Coevolution Quarterly, Faust... One of the songs we used to play, he on mandolin and I on his old Grammer

guitar, was Will the Circle Be Unbroken. Some of the circles in our lives are never concluded with a goodbye, and this broken circle still pains me most. This circle ended one night in 1988 on Highway 395. Few of us are so lucky as to run until our motor stops, so many are robbed of life by an errant car, or a cancer.

At Mono Lake we are at a special place, a place where the circles of friendship and interaction are firmly rooted for very many. For those who are new to Mono every year, I fervently hope that it can come to mean as much for them as it has to so many of us. The Mono Chautauqua is now a cycle that is binding many of us. A Chautauqua is a teach-in, a chance to learn from each other. We all have so much more that we can learn. And so much more to teach each other. But the Mono Chautauqua is a Bird Chautauqua, and we gather not only to learn from each other but from the birds and all their brethren. At this Chautauqua, it is important to listen to lots of talks and tour leaders, and tell the presenters how their message is being received. But it is equally important to sneak off if possible and spend some quiet time alone with the birds. These birds have been rooting their cycles to Mono for many generations. Some come here to breed, others to rest and feed on their way to other points in their annual cycles of movement. They do not have guidebooks and seminars to guide them, they are piloted mostly by the traditions that are passed down in tiny helical crystals in the DNA of each of their cells. And perhaps it is in the helix that we can see lines and circles coming together, as we rush headlong through our lives at what seems like an ever-increasing speed. Like a skillful flute player, it might be good to try to spin our tone and keep sight of the cycles spiraling along with us as we march onward. Helixes large and small: inspirations and guides for us all. And, for our lives, perhaps more serviceable metaphors than lines.

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