ACTING ON INTERDEPENDENCE

B Y   A N D R E W   J O N E S

The world works much better when we respect its interdependence. I learned this lesson 15 years ago, when my colleagues at Rocky Mountain Institute and I were trying to keep more water in rivers and aquifers by helping communities use water more efficiently. We traveled around and wrote editorials to encourage cities like Tucson, Arizona, to invest in water-saving toilets, showerheads, leak detection systems, re-use contraptions in industry, and efficient landscaping (see "My Mental Model").

It was going well—on average, each family and business was using less water. But one day I received a letter from an environmental activist: "Dear Mr. Jones, you are making things worse!" he wrote. He acknowledged the improvements in efficiency, but asked us to look at the effects on rivers and aquifers, where total withdrawals had actually gone up. Our programs had helped people be more efficient, so something else was going on, but what? The writer argued that population in the area was growing, and that we were helping to drive the boom.

Consider how things worked in a desert city like Tucson before water-efficiency improvements. What was the main limit to population growth? Water. So after the water-efficiency

MY MENTAL MODEL

Water Efficiency Effort → (s) Saved Water → (o) Total Withdrawals → (o) Streamflows in Waterways → (s) Ecosystem Health

My vision of how to keep more water in rivers and aquifers involved promoting conservation efforts such as water-saving toilets and showerheads. But this linear approach failed to take into consideration the system's interconnections.

programs helped people and local businesses use less water, developers were able to build more houses. Growth in population wasn't just an external force over which city officials and environmentalists had no control; it was something that we were helping to spur. So, as the letter writer said, our efforts didn't bring any improvements in rivers and aquifers.

It didn't stop there. The writer argued that when people and businesses are inefficient in their use of water and a drought occurs, they can cut back on their water use to make up for the lack of rainfall—shorter showers, less lawn watering, and so on. But in a high–efficiency setting, that kind of buffer doesn't exist anymore. During a drought, the city makes up for the shortfall by taking water from rivers and aquifers. Nature carries the extra load, not the old buffer of wasted water (see "How the System Actually Behaved"). Ouch! At best, we didn't help much. At worst, we hurt this system. What was going on?

As preservationist John Muir said, "When we try to pick out anything by itself, we find it hitched to everything else in the Universe." This story of increasing water efficiency is an example of an approach to change that goes back 3,000 years.

Reductionist View

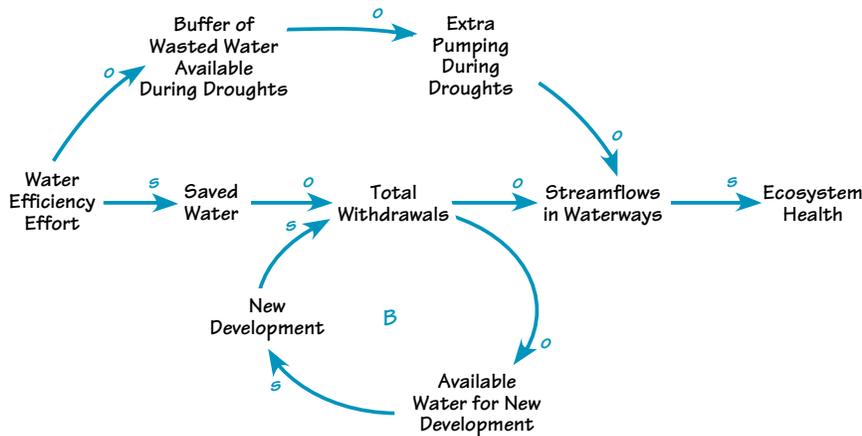We can trace the reductionist view back to around 500 B.C., when the Greek philosopher, Parmenides, made the case that the universe is composed of divisible parts. Flash forward to Newton and Descartes in 1700s and 1800s, describing the universe as a collection of separate, distinct parts that all fit together like a big, orderly clock. This kind of thinking served us just fine in many ways. And yet at some level, it has led us to think of our world as unconnected, so, for example, we spew untested toxins into the atmosphere to the point where mother's milk contains dozens of unnatural chemical compounds. Our blindness to such interconnections reminds me of a Buddhist saying: "The illusion of separateness is the source of all suffering."

Systems View

Back 3,000 years ago, a second line of thinking was also at work: a systems view, consisting of ideas that didn't fit within the reductionist paradigm. Roughly contemporary to Parmenides was the Greek philosopher, Heraclitus. Heraclitus said that everything was transformation and change. One of his metaphors was that people and all living creatures are like flames—the transformation of matter from one state to another. From this perspective, we are never the same or static, contradicting Parmenides' assertion.

Biology seems to support Heraclitus. Consider that the matter in our skin exchanges itself with the rest of

TEAM TIP

As a group, compile a list of challenges that your organization attributes to external sources. Now, discuss how your view of these problems—and potential solutions—might change when you see your firm's actions and those of others as interdependent.

After water-efficiency programs helped people and businesses use less water, developers were able to build more houses, which boosted overall water usage. The shift toward low-flow toilets and other forms of conservation meant that, when a drought occurred, water users couldn't cut back their usage any further, and the city had to make up for the shortfall by taking water from rivers and aquifers.

the world every month. Our liver, every six weeks. Our brain, every year. The cells in our body transform into air and earthworms and dogwoods and plankton and tigers and the woman standing next to us in the check-out line. As Lily Tomlin said: "We all time-share the same atoms." We are a pattern through which matter passes.

The ideas of Heraclitus and others have evolved through the centuries, sustained by thinkers such as Goethe. Since the 1940s, the field of systems understanding has blossomed with the work of Ludwig von Bertalanffy, Norbert Wiener, Jay Forrester, and others. At the heart of it, this perspective focuses on the interaction of the parts rather than the individual elements. For example, ecologists focus on how a tree interacts with soil, microbes, fungi, air, water, and animals. Therapists don't focus just on an individual's troubles, but also on his or her relationship with parents, siblings, children, and friends. Holistic doctors and healers, seeing a person as the interaction of mind, body, and spirit, look beyond symptoms to examine the underlying causes. Policymakers and business leaders consider multiple interactions as they design strategy.

What We Do

So, how would we think and act if we knew that we were truly interdependent? First, we wouldn't see ourselves as victims of some unconnected external source. We see our actions and others' as interdependent in what some Buddhist writers call "mutual co-arising."

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With this new systems lens, if someone were to propose widening a bridge to alleviate traffic congestion, we could predict that the flow of cars would increase to fill the new capacity. Traffic and congestion mutually co-arise. As Winston Churchill said,

"We shape our buildings; thereafter, our buildings shape us." In the same way, we shape the world; thereafter, the world shapes us.

Second, acknowledging our interconnectedness means recognizing that the CO_2 that came out of my tailpipe as I drove this morning will warm the Earth, causing drought in Africa, producing floods in India, and intensifying hurricanes. The shirt I'm wearing was made in China, where I have no idea about the condition of the workers. How do we deal ethically with such a level of interdependence?

The viability of a life-sustaining society depends on our ability to experience now the long-term effects of our actions and to innovate with new behaviors and new tools. Our actions are in close connection with the world of reactions. This is what Martin Luther King, Jr., referred to as the "inescapable network of mutuality."

These realizations open opportunities for us: gratitude and appreciation for the abundance of life, chances to respond to the pain of the world with effective action, and, in this unprecedented time when we live in each others' backyards, we can pay attention to outcomes we are creating in the world.

It boils down to this: declaring each of us to be an intimate part of something—the holy, the universe, the web of all existence—anything greater than ourselves and then taking appropriate action. That is our work. ◘

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