



We are All Part of the Tangled Bank

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Thank you very much for the invitation to address you on Founders Day. I am grateful to the Emeriti Scholars, the UGA Alumni Association, and President Adams for the opportunity.

Today we honor Abraham Baldwin, who became the first president of the University of Georgia in 1785, when the University was little more than a gleam in its founding father's eye.

In 1787, Abraham Baldwin became one of our country's Founding Fathers, representing the state of Georgia at the Constitutional Convention.

President Baldwin, a theologian by training, served as UGA's president during its planning stages until 1801, when the secular scientist Josiah Meigs succeeded him. President Meigs oversaw the opening of the University to students.

When we walk under the Arch now, we can imagine North Quadrangle two centuries ago, with horses tied to hitching posts waiting for their riders to emerge from classes in Old College or New College.

The students—all men—carried satchels with books, pen, inkwell, and paper, and perhaps a peach—but no I-phone, I-pad, computer, MP3 player, or earphones.

They heard only the sounds of birds chirping in the oak trees, horses clumping down unpaved Broad Street, and each other. They must have talked with each other.

By 1832, according to Tom Dyer, who wrote a comprehensive history of the University of Georgia, there were six professors on the faculty: three in the sciences and three in the humanities.

So these professors must have talked with each other as well.

The University of Georgia was a small community of scholars then. Now it is a large community. I think that the brightness of our future as intellectual leaders of our global society depends on our talking with each other.

I came to Athens in 1973, as an Instructor in the Comparative Literature Department, newly formed out of the English Department.

In 1973, at the age of 27, I held philosophical ideas inherited from two millennia of Western thought. These ideas were based on what we call Western dualism—a mental habit of dichotomizing reality into opposites, which we can trace back to Plato.

Over the centuries, scholars and theologians translated Plato's dualism of ideas and their material manifestations into dualisms of spirit and matter, culture and nature, society and natural environment, humans and animals, self and world, mind and body, mental and physical, and—in the academy—humanities and sciences, reader and text, teacher and student.

I didn't question that dualism till I came to the University of Georgia.

In the late 1970s and early 1980s, I was fortunate to meet several great thinkers here at the University of Georgia who helped transform my thinking from dualism to holism.

They were: Stell Kefalas in the College of Business, who introduced me to the concept of holism; Ernst von Glasersfeld in Psychology, who became famous in Europe for his work on the holistic concept of constructivism; and, of course, Gene Odum in Ecology, who taught me about the ecosystem.

Wyatt Anderson in Genetics told me to read Darwin's *Origin of Species* and *The Descent of Man* in their entirety. I did.

I mention the departments of these dear friends of mine to show how valuable friendships across disciplines can be to one's research and teaching—and to one's intellectual growth in general. The possibility of such friendships is one of the great benefits of working in a large research university.

I want to thank these friends and many others for teaching me to think holistically.

To think holistically is to understand the world in terms of systems. A system is a "whole," because its components are interactive.

Whereas a dualistic thinker divides phenomena into two opposing components, a holistic thinker sees phenomena as integrated, indivisible wholes.

In the intellectual world, a holistic paradigm has been gradually emerging—at different rates in different disciplines—over the past century: in ecology, in biology, in physics, in anthropology, in literary study, and eventually in all the disciplines.

In 1859, Charles Darwin's book *On the Origin of Species* discredited the dualism of humans and animals and introduced a way of understanding nature holistically, as an evolving biotic system.

Darwin concluded the book with a statement I've always found beautiful. I will read it:

It is interesting to contemplate a tangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent upon each other in so complex a manner, have all been produced by laws acting around us.

With his theory of evolution *by natural selection*, Darwin rendered obsolete the concept of correct, static species types. According to Darwin, nature is characterized by diversity, variation, and continuous change.

In 1935, Sir Arthur Tansley connected the tangled bank to soil, water, and air, with his concept of *ecosystem*.

In the 1940s, Aldo Leopold, whose book *Sand County Almanac* influenced America's environmental movement, wrote that we humans had failed to acknowledge our dependence on "the land," ignoring the relation of our natural environment to our own human health.

On the principle that interdependence behooves cooperation, Leopold argued that the time had come to expand our ethical community to include "the land."

Leopold's "land ethic" undermined the dualism of society and natural environment. Leopold saw society and natural environment as a single system.

My friend Gene Odum, here at the University of Georgia, explained and developed the concept of the ecosystem in his 1953 textbook *Fundamentals of Ecology*.

Gene helped me understand how "the ecosystem is greater than the sum of its parts." That is, the interaction of a system's diverse components produces phenomena not predictable by examination of the individual components in isolation.

In an ecosystem the function of any one component depends on the function of the others.

Gene became an environmental activist committed to showing the consequences of human activity on our natural environment.

More recently, Edward O. Wilson, with his introduction of "sociobiology," undermined the dualism of culture and nature by showing the influence of genes on social behavior.

That's what was going on in the sciences. The same paradigm shift was taking place in the humanities.

Linguists explored the influence of language on the way a culture structures its reality.

Literary theorists broke down the dualism of reader and text, by elaborating the principle that the meaning of any word, or any event, is always contextual, and the reader is part of the context.

Philosophers argued that we cannot understand anything fully—be it text or ecosystem, atom or universe, individual or culture—without acknowledging our position in relation to what we're observing. They thus replaced the self/world dualism with a holistic model whereby we are involved in what we see.

Feminist scholars were revolutionizing not only the way we read books but the way we understand the social forces that structure our society. They exposed the prejudices subordinating women to men, discredited the hierarchical conceptual order, and showed that what once appeared to be the "nature" of women and men was highly determined by culture.

Feminist scholars, post-colonial scholars, and other humanities scholars showed the pernicious effects on human beings of the once unquestionable hierarchies of gender, sexual orientation, race, skin color, culture, and ethnicity.

They argued, successfully, for replacing the "ladder" model with an appreciation of diversity.

Environmental scholars showed the pernicious effects of the human/nature dualism on our natural environment and hence on ourselves.

If we see culture and nature as an indivisible system, we recognize the influence of all the parts on each other. We recognize their interdependence.

If we think holistically about our planet, if we see the planetary ecosystem as an interactive whole, we recognize the interdependence of all its parts, from oceans to algae.

We discard our habit of ranking that we inherited from Aristotle. We "lay the ladder down."

What does "laying the ladder down"—that is, thinking in terms of interactive wholes in which the functioning of all the parts matter—imply for our global society?

We cease to rank humans on a vertical scale of worth or intelligence, the way European anthropologists did in the eighteenth and nineteenth century when they placed their own race—Caucasian—highest on the scale and placed other races in descending order beneath them.

We cease to place the lighter-colored races higher on the ladder than the darker. We cease to place men higher on the ladder of value, virtue, and visibility than women.

If we think holistically, we cease to evaluate individuals according to their proximity to an ideal type. We see all humans as part of an interactive whole, and difference ceases to be difference in value. We see difference among people as natural, not as deviance from type.

The civil rights movement in the 1960s, the women's rights movement in the 1970s, and now the gay rights movement have taught our whole society to see diversity as natural. Accordingly, in our laws and accepted practices, we have expanded our ethical community to include all humans, regardless of color, gender, or sexual orientation.

Thus in both our intellectual community and our social community, we are coming to see the world holistically.

If we think holistically about our global society, we must acknowledge our nation's interdependence with practically all the other nations in the world.

Our prosperity depends not solely on being the world's militarily and economically most powerful country. It depends also on the political stability of all the other nations, even the least powerful.

So we benefit more from cooperation than from dominance. Here we can apply Leopold's principle that interdependence behooves cooperation.

Last year's revolutions in the Middle East remind us that our global society is a system, a whole, in which disruption in one region affects the stability of the whole.

We learn that if some components of the system are unstable, the whole system is unstable. And if the system is unstable, all its components undergo change.

If we think holistically, we see all kinds of relationships: the relationship of petroleum usage to climate change; the relationship of climate change to the blossoming of flowers in the spring, the migratory patterns of birds, and crop production; the relationship of industrial waste to human health.

If we think holistically about our natural environment, we recognize that pollution of our air and our water is ultimately pollution of our own bodies.

When we ingest pharmaceuticals and hormones to make us feel better and then excrete them into our water system, they affect frogs, deer, and ultimately other humans, humans who don't have prescriptions for those pharmaceuticals and hormones, who don't want them and don't know they're ingesting them.

When we dispose of our garbage in the oceans, the garbage affects tuna and oysters, which we like to eat, dolphins which we just like, and ultimately other humans.

The pollution of our planet, the rapidly decreasing biodiversity, and the accelerating global climate change will affect our lives and the lives of our descendants in ways we cannot predict. We can never understand fully the function of all the interactive organisms in a planetary ecosystem system.

With a holistic vision of nature, we realize that our well-being as humans in the planetary ecosystem depends on the biological stability of all the other components of the planetary ecosystem. It depends upon the stability of organisms that seldom cross our minds, such as algae, earthworms, bees, and vultures. And it depends on the stability of the planet's climate, as well.

Now we see our natural environment as an extension of ourselves. If we pollute it, we endanger ourselves.

The shift from dualism to holism in our way of looking at the world is a paradigm shift.

Decades ago, we learned about paradigm shifts from Thomas Kuhn's *The Structure of Scientific Revolutions*.

What I got from the book was faith in the ingenuity of new generations of young people to see the world differently from their elders, to ask questions that their elders did not, and to imagine a society that their elders could not.

This brings me to why I loved my thirty-eight years at the University of Georgia.

If I were asked what facet of our great research university appealed to me most, I would say the opportunity to interact with highly intelligent individuals—both faculty and students—who know things I don't know, who do research in ways new to me, who ask questions about nature and culture that I have not thought to ask, who come from countries other than my own.

In other words, I have loved the opportunities the University of Georgia offers to interact with individuals from all over campus, individuals who think about the world differently.

In our University community, we need never feel alone, for we are embedded in an exciting interactive *system* of thoughtful individuals all eager to understand the world.

And in such a system, whatever we do affects the whole.

It is from my friends in disciplines different from my own—through committee meetings, lectures, panel discussions, and dinner parties, especially dinner parties—that I learned to see the world in terms of interacting systems.

I learned from Gene Odum that new ideas arise out of the interaction of individuals trained differently from each other. The whole is greater than the sum of its parts.

I also learned from Gene that solving a problem requires looking at the big picture of which the problem is only a part. Gene shared Einstein's conviction that "The significant problems we have cannot be solved at the same level of thinking with which we created them."

I'll repeat a story I've told before. In 1973, shortly after I arrived at the University of Georgia, I put a cartoon on my office door in Park Hall that showed a couple looking up at a large sculpture of five people at a table. The man was saying to his wife, "There are no longer any great men, just great committees."

I thought the cartoon funny, because as a literary scholar I considered intellectual work to be a private matter, done by an individual alone in his or her office. I admired great individualists. I viewed committee work as work done only when compromise was necessary.

Now I think that "great committees" is the way to go. To make good citizens of the world in the twenty-first century, universities need to foster cooperation and collaboration among people who think differently. Five minds interacting with each other intellectually may create something "greater than the sum of the parts," because a "great committee" is a system.

We learn from each other. The more diverse the whole is—that is, the more diverse intellectually, academically, ethnically—the more we have to learn, and the greater is the possibility of creating something new.

In my own scholarship I have been driven by the excitement of glimpsing relationships among discourses and discoveries in fields not obviously related to each other.

In teaching my undergraduate Ecocriticism course I put into practice what I had learned about the value of interactivity in the production of new ideas.

Ecocriticism, as I define it, is the exploration of a culture's conceptions of nature—and their social, biological, and climatological implications.

The subject matter invariably attracted bright, interested students, like Buck Trible, who will speak to you in a few minutes. The students came from all the departments in the college and from journalism, ecology, agriculture, forestry, and education, as well.

I centered the course on unstructured discussion of the philosophical and literary texts we read. And although I guided the discussion, subtly, I did not control it. In the classroom, I "laid the ladder down."

I believe that when smart people trained differently from each other analyze a particular text or problem and then uninhibitedly share their ideas with each other, they will beget new ideas, new solutions to problems, new ways of looking at the world.

My classes turned into "great committees." What fun we all had learning from each other.

That is why I loved teaching, and why I miss the classroom very much.

I found out from my students that the holistic model of teaching has transformed the way they learn across the disciplines. The old dualist model of lecturer and passive student has given way to an interactive model in which students are actively involved in developing their understanding of things.

Now majors in the sciences and social sciences are engaged in research projects both in the laboratory and in the field. Majors in the arts and humanities are spending time abroad, becoming fluent in foreign languages and becoming acquainted with ways to see the world that are different from their own.

I think Gene Odum's motto that "the ecosystem is greater than the sum of its parts" is applicable to the university. The more we see the University as an intellectual *system*, rather than as a collection of faculty and students, the more we will do to enable their intellectual interaction across disciplinary boundaries.

In so doing, we facilitate creativity and generate intellectual excitement.

I propose an annual day-long research conference for all faculty in their first three years here to share their work with each other and to make friends from departments other than their own. Such a conference, on campus, will acquaint newly hired faculty with each other.

Then many, many young scholars will have the pleasure I got from knowing faculty outside my field. The friendships they form will enrich their lives, influence their research and teaching, and help them comprehend the dynamics of a large public research university.

I appreciate very much the invitation to speak to you all this Founders Day. I hope that my remarks remind everybody of how fortunate we are to be part of the University of Georgia.