

ASU anthropologist Robert Boyd a pioneer in cultural evolution

The newly named Regents Professor explains why culture, not just genes, made us human

By Marshall Terrill , ASU News
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[Robert Boyd](#) did not walk into the room expecting a surprise.

When Arizona State University President Michael Crow's office asked him to appear at a specific time with no explanation, Boyd assumed it was just another meeting.

"I got a call or an email, I forget which," said Boyd, an anthropologist and professor in ASU's [School of Human Evolution and Social Change](#) and a research scientist with the [Institute of Human Origins](#). "Probably an email from President Crow's office saying I was to be present at such and such a time, and no information whatsoever regarding what it was about."

Outside the conference room, Boyd waited with another faculty member. They speculated quietly about why they had been summoned. Only after they were ushered inside did the reason become clear. Boyd had been named a [Regents Professor](#), the university's highest faculty honor, reserved for full professors whose work has achieved national and international recognition.

"It's great," Boyd said afterward. "I didn't expect it. It doesn't change my life so much, but still I'm quite pleased by it."

The understated response is typical of a scholar whose ideas have reshaped how scientists think about humanity itself. For decades, Boyd has been one of the central architects of cultural evolution, a field grounded in the idea that human behavior, technology and cooperation cannot be explained by genes alone. Culture evolves, Boyd argues, and that evolutionary process is a defining feature of what makes us human.

"Robert Boyd's groundbreaking work has not only transformed our understanding of human culture, cognition and large-scale cooperation, but has also helped lay the foundation for an entirely new field of study," said [Patrick Ryan Williams](#), professor and director of the School of Human Evolution and Social Change. "His scholarship has fundamentally shaped research on cultural evolution, illuminating what makes our species uniquely human."

Boyd's path into anthropology was anything but straightforward. He grew up in Marin County north of San Francisco, attended public schools and enrolled at the University of California intending to study physics.

"As an undergraduate, my major was physics," he said. "I was trying to decide what kind of physics I wanted to do."

The pivot came during a summer job at the Scripps Institution of Oceanography. Down the hall from Boyd's lab, a faculty member was building mathematical models of tuna populations to inform fisheries regulation.

"There was this guy down the hall who made mathematical models of tuna populations in the eastern Pacific," Boyd said. "I got talking to him, and that seemed a lot more interesting to me than the physics I was doing."

The appeal was not just the real-world application. Boyd realized that biological systems demanded a different style of thinking.

"Modeling in biology requires more ability to distill models out of complex interactions," he said. "I found I'm better at that than working on problems that everybody's been working on for a while."

He entered graduate school in the early 1970s to study mathematical ecology, part of an early wave of researchers interested in how populations change over time. From there, his attention turned naturally to human evolution.

At the time, evolutionary explanations of human behavior were gaining prominence. Sociobiology was ascendant, and many scholars were asking how natural selection shaped social life. Boyd and his longtime collaborator Peter J. Richerson were excited by the questions but troubled by the answers.

"The things that people were doing didn't take into account the fact that people are cultural organisms," Boyd said. He added that humans acquire much of their behavior by imitation and social learning, not just by instinct.

Anthropologists already believed culture mattered. The problem was that no one had rigorously connected culture to evolutionary theory.

"They had no way to connect it to evolution," Boyd said, "to the fact that 2 million years ago, we were quite apelike, and now we're totally culture-saturated organisms."

Boyd and Richerson decided that gap was the real puzzle worth solving. Their collaboration culminated in the 1985 book "[Culture and the Evolutionary Process](#)," which introduced mathematical models describing how cultural traits spread and asked why natural selection would favor the psychological mechanisms that support culture.

"After the introduction, every single chapter attacks that problem one way or the other," Boyd said.

Looking back, he acknowledges the book's influence. Alongside earlier work by Marcus Feldman and Luigi Luca Cavalli-Sforza, it helped establish the foundations of a new field that initially consisted of "four or five people shouting in the wilderness."

[Charles Perreault](#), an associate professor in the same school, said Boyd's work transformed culture from a vague background influence into a rigorously modeled evolutionary process.

"By showing how cultural traits are transmitted, selected and accumulated, Boyd provided theoretical foundations for concepts such as social learning biases, gene-culture coevolution and cumulative culture," Perrault said.

When Boyd explains cultural evolution to non-scientists, he often uses a simple example: the kayak.

For Inuit communities, kayaks were essential for survival. Yet no individual could invent one from scratch.

"The way people make kayaks evolved over a couple thousand years," Boyd said. He added that humans differ from other animals because they accumulate information across generations.

"There's not another single example of that in other organisms," he said. "Culture allows humans to survive in environments where genetic adaptation alone would fail."

Boyd illustrates the point with stories of European explorers who became stranded in unfamiliar environments and starved, while Indigenous populations thrived using locally accumulated knowledge. Culture, in this sense, is survival information stored in people rather than DNA.

When Boyd began describing his work as cultural evolution, skepticism was common. Over time, students trained in the approach trained others, data accumulated and models improved. The field grew steadily rather than through any single breakthrough.

Despite his influence, Boyd remains candid about his limits as a popular writer. Teaching, however, remains a joy.

"I love figuring out how to explain things," he said, quoting theoretical physicist Richard Feynman's belief that if you cannot explain an idea simply, you do not understand it.

After decades studying culture and cooperation, Boyd is worried about humanity's future. Climate change concerns him, but war concerns him more. History, he says, offers little reassurance.

Still, he keeps working. He keeps teaching. He keeps refining ideas that explain how humans became a species defined by culture.

"What other choice do we have?" Boyd said. "So, soldier on."

This story originally appeared on [ASU News](#).

Main image



School of Human Evolution and Social Change Professor and Regents Professor Robert Boyd poses for a portrait outside of Creativity Commons on the ASU Tempe campus, Dec. 3, 2025. Photo by Armand Saavedra/Arizona State University