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Julie Cohen

The Case for Interdisciplinary Research

According to UC Santa Barbara's Thomas Scheff, history offers valuable lessons about conducting research in the modern world. A professor emeritus in the Department of Sociology, Scheff argues for integration among specialties, something French scientist Blaise Pascal advocated in the mid-17th century.

In a paper published in The American Sociologist, Scheff outlines Pascal's point of view and explains its relevance more than 350 years later. Pascal believed that advances in understanding require both "the spirit of geometrie" (system) and "the spirit of finesse" (intuition). Scheff claims that combination tends to be lacking in today's research.

"All of the disciplines need considerable reform, but humanities and social and behavioral studies much more so than physical sciences," he said. "Physical sciences need reform too but not to the extent that the other groups do. These other groups need to be changed into interdisciplinary units that work not on a topic but on a real-life problem."

Scheff used the example of 16th-century Danish astronomer Tycho Brahe to illustrate how research can stall when system and intuition are mutually exclusive. During his lifetime, Brahe tried in vain to determine the orbit of Venus. Despite his accurate chartings of the orbit, he was unable to succeed because he subscribed to the commonly held belief of the time that the planets revolved around Earth.

After Brahe’s death, his assistant Johannes Kepler continued the effort but was unable to solve the problem until he took a new approach. Kepler built a model of the planetary orbits that predicted the correct orbit for Venus because he accidentally placed the sun in the center. “Kepler inadvertently used intuition rather than system to solve the problem,” Sheff said.

He added that current research relies on system rather than intuition. In psychology, he posits, the rigid adherence to the scientific method without incorporating intuition has brought the discipline to a standstill. Scheff noted that over the past half century, more than 20,000 studies using self-esteem scales and other reliable methods such as systematic social surveys have yet to be able to predict behavior.

“The scales all confound thoughts —such as egotism — with emotions — such as authentic pride,” Scheff argued in the paper. He advocates for two separate self-esteem scales: an egotism scale (self-satisfaction) and a pride-shame scale (self-esteem). “We don’t really need the egotism scale; that’s what has been done repeatedly in the thousands of studies to date,” he added. “We need a tool that will predict behavior and in order to do that we must devise a new self-esteem scale that focuses on emotions.”

For Scheff, the future of scientific research lies in an integrative approach in which the expertise of different disciplines is combined to make new discoveries. “The nonphysical sciences need a certain kind of reform if they’re going to go further in understanding the nature of the world,” he concluded. “We need a marriage ceremony between the humanities and social and behavioral studies. Only then will we be able to start solving real-life problems in these disciplines.”

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.