

Invited Presenter

SCI;

Reasoning from Basic Principles: Translating Behavioral Research Into Large Scale Applications

Chair: Derek D. Reed (The University of Kansas)

T. V. JOE LAYNG (ChangePartner, Inc.)



T. V. Joe Layng has over 40 years of experience in the experimental and applied analysis of behavior with a particular focus on the design of teaching/learning environments. In 1999, he co-founded Headsprout. At Headsprout, Joe led the scientific team that developed the technology that forms the basis of the company's patented Early Reading and Reading Comprehension online reading programs and science sequence for which he was the chief architect. Recently, Joe co-founded ChangePartner, a company combining basic behavior analytic principles with artificial intelligence to integrate constructional

behavior change at scale throughout large organizations such as hospitals. Joe earned a Ph.D. in Behavioral Science (biopsychology) at the University of Chicago. At Chicago, working with pigeons, he investigated animal models of psychopathology, specifically the recurrence of pathological patterns (head-banging) as a function of normal behavioral processes. Joe also has extensive clinical behavior analysis experience with a focus on ambulatory schizophrenia, especially the systemic as well as topical treatment of delusional speech and hallucinatory behavior. Joe is a fellow of the Association for Behavior Analysis International and Chairman of the Board of Trustees, The Chicago School of Professional Psychology.

Abstract: Elon Musk, Steve Jobs, and others have brought us innovation that both surprise and delight us. They not only produced new widgets, they are responsible for changing the way people live and work. Both advocated as essential the application of basic principles of science, engineering, and design in the creation of new technologies. Contrasted to reasoning from basic principles is reasoning from analogy. Much of what is created comes from this approach. In our initial design attempts we search for how others approached the problem. How did company X build an electric car? Reasoning from analogy may limit what we can do and prevent us from applying the full power of our science and technology in solving fundamental problems. Three products created at Headsprout, Inc. from 1999 to 2010 and the current approach taken by ChangePartner, Inc. today represent efforts to build applications at scale that rely on reasoning from basic principles. These efforts will be used to illustrate the power of the approach and suggest that searching for analogs, including, at times, previous applied research or applications, may be detrimental to applying the experimental and applied analysis of behavior at scale to new and interesting areas and problems.