THE INSTITUTE FOR STRATEGIC CLARITY

Welcome to the October 2002 edition of the Institute for Strategic Clarity electronic newsletter. Feel free to forward it to colleagues and friends.

TABLE OF CONTENTS

INTRODUCTION TO THE NEWSLETTER

With this newsletter we will periodically bring you interesting articles from the forefront of research and application on systems thinking, organizational strategy, and personal clarity. In each newsletter we will feature one article and available resources on the Institute website. Your feedback on this newsletter helps us increase its value to you. Please share your thoughts with our Executive Director, Jim Ritchie-Dunham at jimrd@instituteforstrategicclarity.org.

We sent you this newsletter because you requested it or you have worked with our members at Strategic Clarity (SDSG). If you wish to be added to the newsletter e-mail list, please send an e-mail to subscribe-newsletter@instituteforstrategicclarity.org. If you do not wish to receive this newsletter, please send an e-mail to unsubscribe-newsletter@instituteforstrategicclarity.org.

FEATURE ARTICLE

In this article, Barry Richmond focuses on the much debated issue of whether simulation is required to learn about complex systems. He addresses how people gain clarity about complex organizational systems through the process of modeling system dynamics.

Barry Richmond received his PhD in system dynamics at MIT in 1979. He taught at Dartmouth College and then founded High Performance Systems in 1985, where he created Stella and ithink, the most sold system dynamics software worldwide, and he taught the principles of systems thinking.

"The Important Learning in Systems Thinking"
by Barry Richmond, founder, High Performance Systems (http://www.hps-inc.com/)
[Reprinted with permission from Jesse Richmond at High Performance Systems]

Some systems thinkers argue that one can only learn about complex systems through computer simulation. Their comments serve to divide the community of practitioners, creating an "us" (who rely heavily on computer simulation) and a "them" (who don't). In fact, there is only a "we," people who are trying to effect a change for the better in the thinking skills people carry forward into the world. But my reaction to their position is not simply a "Hey, let's work together on this" message. I'd like to go on record as saying that they are factually wrong in saying, in effect, that "important learning" can come only from doing computer simulation.

I agree that it's possible to learn new things from doing computer simulation. In my experience (both direct and in observing others), the amount of learning that results has ranged from a little to a lot. Sometimes one merely confirms what one has already intuited from constructing the map, discussing the issue, or staring at a behavior over time graph. Other times one sees something they didn't see prior to computer simulation, but it doesn't completely "blow socks off." And sometimes, one is truly surprised (and thrilled!) by an amazing insight, with truly counterintuitive behaviors arising out of the computer simulations. I will not hazard a guess at the distribution among these outcomes. However, the "amazing insights" outcome is certainly not anywhere close to a 100% of the time phenomenon.

Perhaps more importantly, though, those people that argue that we can only learn through computer simulation fail to recognize and acknowledge a place in the learning cycle where hugely rich learning outcomes occur. This "place" comes prior to computer simulation, though computer simulation can later add to the learning gleaned in this phase. The "place" (actually an activity) I am talking about is construction of the stock/flow map. If people are equipped with the appropriate system-as cause, dynamic, and 10,000 meter, thinking skills, they will do a good job of filtering the reality they are seeking to model (i.e., setting the extensive and intensive model boundaries). They will make appropriate decisions about what to include within the model boundary, and at what level of aggregation to include it. Then, if they are equipped with the appropriate operational, closed-loop, and non-linear, thinking skills, they will do a good job of representing (using stocks, flows and wires) what they have decided to include.

The process of thinking hard about what to include, at what level of aggregation, and how to represent what's been included, generates a vast amount of learning-all of which precedes computer simulation! Again, computer simulation can serve as an excellent "sanity check" on this thinking, but before it does, mental simulation should always precede it! Mental simulation offers a second major learning opportunity in this phase of the learning cycle. If people only computer-simulate models that others have constructed, they will not develop the critical thinking skills needed to construct their own mental models. I would argue it is precisely these critical thinking skills -- i.e., the ability to think for oneself-that are the most important skills we can help people develop! And, because the map-construction process is best executed as a team activity, it affords an opportunity for developing another set of skills that are vital to people interacting with our ever more interdependent world: empathy and appreciation for diversity. When many voices are heard and viewpoints shared in the process of rendering a collective

mental model as a stock/flow map, not only is it likely to result in a better collective mental model, but people will move closer to becoming "systems citizens" (the true purpose of "systems" activities!).

I agree that computer simulation can play a role in building the requisite thinking skills. I only wish people that disagree with me could have been present at the workshop that Tim Joy and I co-facilitated in Norwalk California last December. Tim held the group spellbound while he illustrated how he used a behavior over time graph to facilitate a rich discussion of *Lord of the Flies*. I would defy anyone to characterize such a discussion as "superficial," or in any way "learning impoverished," because he did not invoke computer simulation! Let's get on with the work and forget the "us" and "them."

Barry passed away August 3, 2002. See his obituary at (http://www.hps-inc.com/barry/richmondObituary.htm). In September 2001, we asked Barry to write an article for this newsletter on how to gain clarity from simple models. We finally agreed on a modified version of a posting he made to the K-12 System Dynamics listserve in February of this year.

We began working with Barry in 1996 while co-teaching a series of courses at A.T. Kearney. That work evolved into an alliance where we taught HPS's courses on an introduction to systems thinking and ithink in Spanish-speaking countries, we worked on consulting projects together, and we helped promote the dynamic balanced scorecard. Since 1999, HPS sponsored research at the Institute by providing software, technical services, and funds. With Barry's passing, we lose a friend and a mentor.

You can reach High Performance Systems (HPS) at http://www.hps-inc.com/.

Reader Feedback:
If you would like to share comments or thoughts on this feature article, please send them to feedback@instituteforstrategicclarity.org. We will include your feedback on-line and in the next newsletter.

FEATURE WEBSITE CONTENT
We have developed an on-line resource library for you with the hope of helping you in your work towards gaining strategic clarity. In this library, we have cataloged many of the publications and presentations we have given over the past years on strategic applications of systems thinking tools (see http://www.instituteforstrategicclarity.org/lppubli.htm).

ABOUT THE INSTITUTE
The Institute for Strategic Clarity is a non-profit scientific research and educational organization that seeks to increase the clarity with which decision makers, in any organization, understand, develop, and communicate the organization's strategic

direction. For more information about the Institute, its purpose, membership, publications, courses, and upcoming events, visit http://www.instituteforstrategicclarity.org/. If you are interested in supporting the Institute for Strategic Clarity, please contact our Executive Director, Jim Ritchie-Dunham, PhD, at jimrd@instituteforstrategicclarity.org.