

06.07.09

Lessons Learned—Why the Failure of Systems Thinking Should Inform the Future of Design Thinking

By Fred Collopy

“You never learn by doing something right ‘cause you already know how to do it. You only learn from making mistakes and correcting them.” Russell Ackoff

Design and “design thinking” is gaining recognition as an important integrative concept in management practice and education. But it will fail to have a lasting impact, unless we learn from the mistakes of earlier, related ideas. For instance, “system thinking”, which shares many of the conceptual foundations of “design thinking”, promised to be a powerful guide to management practice, but it has never achieved the success its proponents hoped for. If systems thinking had been successful in gaining a foothold in management education over the last half of the 20th century, there would be no manage by designing movement, or calls for integrative or design thinking.

Systems thinking, as written about and practiced by Russell Ackoff, C. West Churchman, Peter Checkland and others, contained within it many of the impulses that motivate the application of design ideas to strategy, organization, society, and management. Ideas such as engaging a broad set of stakeholders, moving beyond simple metrics and calculations, considering idealized options and using scenarios to explore them, shifting boundaries to reframe problems, iteration, the liberal use of diagrams and rich pictures, and tirelessly searching for a better set of alternatives were all there. If the business and management community had bought it, we would not be having the many discussions about design, design thinking, and expanding management education to engage the intuitive, to embrace values, to look beyond available choices. We would already be doing all of that and more. But systems thinking, despite its wartime successes never really captured the imagination of business leaders. And we must learn from its mistakes.

I have been an enthusiastic student and teacher of systems thinking for almost three decades. I was a student of Russ Ackoff's and I did my PhD in decision theory largely because of the work of pioneers in cybernetics and systems theory. I have taught systems thinking to undergraduates, MBAs, and executives. I have heard their objections to the arbitrariness of any particular system's boundaries, to the impossibility of balancing the incommensurable objectives of a system's many stakeholders, and to the difficulty in identifying clear measures of a system's performance. Still, many of my students over the years have found much to take away. And I receive email messages years after those courses have been completed that suggest that the ideas and techniques are useful and important to some students.

Systems thinking started with an impulse that insights from Gestalt psychology and biology might be useful in understanding and affecting complex organizational and social problems. It developed into a large, highly interconnected theory that is itself a complex system. Systems thinkers remain convinced that if managers saw things through the lens of that theory, the world would become better. But the number and sequence of things that must be done has become so arcane that to master it seems all but impossible to the managers in question.

I recently spent two days at a workshop with around a dozen architects and managers. The facilitator was one of Russ Ackoff's former colleagues at the Wharton School. It is a reflection of what has become of systems thinking that it took most of the two days for the facilitator to explicate all that he thought we needed to know before we could begin either critiquing or applying the ideas. In addition to obvious material on the nature of systems, we learned about chaos theory, living systems theory, Santiago theories, the four foundations of systems methodology (holistic thinking, operational thinking, interactive design, and socio-cultural models), five systems principles (openness, emergent properties, multi-dimensionality, counter-intuitiveness, and purposefulness), the five interactive dimensions of social systems (wealth, beauty, power, value and knowledge) and the related five dimensions of an organization (throughput processes, membership, decision, conflict management, and measurement), the elements of a throughput system (time, cost flexibility, quality, measurement, diagnostic, improvement and redesign), the nature of holistic thinking and iteration, the laws of complexity, loops and feedback, and more.

All of this was presented as foundational knowledge that was necessary before we could get to what it was that brought most of us (or at least me) to this particular workshop — designing for human interaction. In addition to the number of frameworks and ideas, and the density of the interconnections among them, there was a strong normative quality to the material and its presentation. "If one hopes to make any progress at all," we were told, "you need to both understand and accept these related ideas."

This particular version of systems thinking is not unusual in this respect. Peter Senge's 1990 edition of *The Fifth Discipline* describes one manager's reaction to a five-day introductory workshop on his approach, which among other things, requires growing comfortable with eight archetypes: "It reminds me of when I first studied calculus (p.

x).” Systems dynamics, the Soft Systems Method and other approaches face similar concerns.

Each of systems thinking’s various manifestations demands some degree of subscription to an orthodoxy (a particular view of just what systems thinking is). And each requires that the user master a large number of related ideas and techniques, most of which are not particularly useful on their own.

These requirements are at odds with how we tend to acquire new knowledge. Rather than accepting a new idea because we must, we like to try it out. A new skill is most likely to interest us if it contributes to both short-term and long-term learning objectives. And the easier it is to try out parts of a theory, the more likely we are to jump in.

The drive to nail “design thinking” down has the same normative flavor that has restricted the spread of systems thinking. The urge to create a framework that specifies what and how a design thinker proceeds seems not just futile but dangerous to the survival of a movement aimed at expanding the kinds of thinking that managers, policy makers and citizens engage in.

What is the alternative? I would suggest that we should focus instead on building and describing an arsenal of methods and techniques, many of them drawn from various extant design practices, that are applicable to the domains and problems in questions. Describing these techniques as well as the conditions under which each is of value would constitute an invaluable program of research.

You might think of the various pieces of knowledge that we produce as a component in a kind of intellectual scaffolding that can be used to support the efforts of others. Rather than having each flavor of “design thinking” rushing off to build its own comprehensive model of what “real design thinkers” do, we might better spend our energy on identifying what is useful in what we have tried or seen done, the conditions under which it seems to break down, and so on.

In addition to engaging a much larger community in knowledge-sharing, such an approach will provide the users of design thinking with “trial-size” access to a growing body of knowledge. One wouldn’t have to buy the whole of “design thinking”, for example, to accept that there are places in management where sketching could help out, or that for a large class of problems spending more time on problem framing and reframing will pay dividends down the line. In time, each manager will do what we have learned designers do, adopt those methods, techniques and ideas that best suit their own personal style and the nature of the problems that they typically encounter. In the end then, rather than learning and subscribing to a theory or system of thought that is based on ideas from design, managers and policy makers will become designers of a sort particularly suited to their circumstances.