

Book Review of *Systems Thinking Made Simple: New Hope for Solving Wicked Problems*

Jeremy Solin (University of Wisconsin-Extension, ThinkWater)
jsolin@uwsp.edu

Abstract:

In this book review the author summarized the text, *Systems thinking made simple: New hope for solving wicked problems* by Derek and Laura Cabrera (2015). In the text, cognitive thought is described as a complex adaptive system and four simple rules of thinking are included as an approach to problem solving.

Keywords: cognition, complex adaptive systems, sustainability education, systems thinking, thinking

As an educator for the past 20 years, I would have told you that systems thinking was at the core of my approach to teaching – helping people understand things from a critical systems perspective. What I have come to realize is that my understanding of systems thinking was helping people understand systems science, but not using systems science to understand their own thinking. Dr. Derek Cabrera a cognitive and systems scientist at Cornell, and author, along with his partner Laura, of *Systems Thinking Made Simple: New Hope for Solving Wicked Problems*, helped me to connect systems and thinking.

In *Systems Thinking Made Simple*, the Cabrera's lay out the case for understanding thinking as a complex adaptive system (CAS). A CAS is a system of autonomous individuals acting together to create some collective, emergent behavior. Think schools of fish, murmurations of starlings. Also think human organizations, hives of bees, evolution and thinking. And, interestingly, complex adaptive systems often have simple rules that direct behavior. The murmuration of starlings or the school of fish does not have a leader directing movement; instead each individual is following simple rules (e.g., stay equal distance from those around, move in the same direction as those next to you, and avoid predators). The same is true of thinking.

The four simple rules of thinking are: making Distinctions, organizing ideas into parts and wholes of Systems, identifying Relationships, and taking Perspectives (DSRP) (pp. 47-50). DSRP are the simple rules that we follow to build knowledge using information; said another way, DSRP is how we think.

Systems Thinking Made Simple is essentially a handbook for this new way of understanding and practicing systems thinking. The book is organized into three sections. In Section 1, the Simple Rules of Systems Thinking, the case and explanation for DSRP is described. Section 2, Becoming a Systems Thinker, walks readers through applying DSRP in everyday and advanced settings. And, Section 3, 7 Billion Systems Thinkers, discusses what's needed to democratize systems thinking and to apply systems thinking to organizational development.

Overall, this book is well written, is not overly dense or academic, and provides the information for us all to be better systems thinkers. And, most importantly to me, it shows how I as an educator can integrate teaching thinking (systems thinking) into what I do. No longer is thinking some black box in which some magic would happen. I can understand what thinking is, how people build knowledge from information using DSRP, and help to build people's thinking skills. And, we can all apply systems thinking in our everyday lives, to complex issues we are facing as a society, and to the organizations within which we work and learn.

Some academics might find the paucity of references troubling, but the intent of this book is not to summarize the research and knowledge leading to this new understanding and application of systems thinking. Its intent is to engage more people in becoming systems thinkers, to democratize systems thinking.

Others might find there is a lack of specificity or complexity to the examples provided in the book. We all want to find something that is directly relevant to our situation. But, of course, it is not possible to accomplish that for everyone in any one book. And, this is meant to be an introductory text, the starting or midway point for a journey for us all to become better systems thinkers.

In my role with ThinkWater, a national water education campaign based on the systems thinking framework described in this book, I extensively use the strategies and tools included in *Systems Thinking Made Simple*. A few examples include: 1) DSRP is a powerful analytical tool to understand any topic or issue. I use DSRP with students and educators to map our thinking and knowledge of issues. Using DSRP leads to deeper understanding. It also makes our thinking transparent and we can work toward building shared mental models of an issue. In addition to the basic use of DSRP, the “jigs” (simple patterns) offered in the book provide easy steps to deeper thinking. 2) Map-Activate-Check (MAC) is a systems thinking based curriculum design tool. This tool is simple, but powerful. “Map” is the process of identifying and describing the mental models using DSRP you want to others to construct (the knowledge you want them to have). “Activate” is identifying the most effective ways to activate that knowledge. And, “check” is determining if that mental model has been constructed, and if not, identifying another strategy to activate it. MAC is the tool I use in developing workshops, and even presentations, and how I do curriculum planning with other educators. 3) I have also used systems thinking at the organizational level as described in the book. The underlying understanding of using systems thinking at the organizational level is that organizations are complex adaptive systems. The Vision-Mission-Culture-Learning (VMCL) tool opens up great potential and empowers the members of the organization. I have used VMCL both within newly forming organizations (like the Wisconsin Water Thinkers Network) and with existing organizations to help them clarify their vision and mission and to empower their employees to fulfil the organization’s mission to achieve their vision. In this approach, leadership is about building the culture and capacity of the organization and ensuring learning is happening.

Systems Thinking Made Simple makes a significant contribution to the interrelated fields of systems thinking, sustainability education, and cognitive science. This is a worthwhile book to read, to have by your side as you practice the skills and tools introduced in the book, and to share with others. It is a great companion to other works in the field such as *The Systems Thinking Playbook* (Booth Sweeney & Meadows, 2010), *Thinking in Systems* (Meadows, 2008), *The Web of Life* (Capra, 1996) and *The Fifth Discipline* (Senge, 2006)). DSRP provides an underlying, unifying theory and approach to systems thinking as discussed in these books. In combination, these are powerful resources that can advance the field of sustainability education.

*Note, in my current role as the Wisconsin ThinkWater Coordinator and National Program Manager, I work with the Cabrerias. The work that we do in ThinkWater is based on the system thinking principles and framework presented in *Systems Thinking Made Simple*.

References

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