

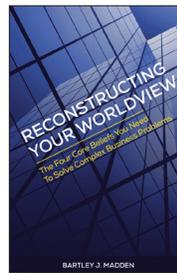
Reconstructing Your Worldview: *The Four Core Beliefs You Need to Solve Complex Business Problems*

Review by Bruce Nevin
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This book is of particular interest because of the author's engagement with Perceptual Control Theory (PCT). It is challenging to review from this perspective because Mr. Madden is concerned with problems of business organizations and processes, and PCT is for the most part concerned with behavior of individuals. (Nascent work in collective control is the major exception.) For the same reason, while Madden's grasp of PCT seems good, in the one chapter devoted to it, his proposals in the other chapters are presented as though diverse, and he was unable in this book to achieve a further integration with PCT that seems to me tantalizingly close. In my view, we should encourage him to seek a deeper grasp of PCT and then apply it more fully to the business problems that concern him.

Madden's four "core beliefs" (propositions, hypotheses) are not difficult to restate in PCT terms:

- 1 Past experiences shape assumptions.**
Reference values and collectively controlled perceptions that were established in prior circumstances may make it difficult to perceive present circumstances accurately.
- 2 Language is perception's silent partner.**
Collectively controlled expressions in language can substitute for observation, and "the uniqueness of something meriting a name fosters the erroneous thought that the thing has an independent existence—*independent of context and purposeful behavior*—as well as the false idea that there's no need to think further about any assumptions behind the name." (p. 36) Dag Forssell calls these 'word pictures' in the subtitle of the collected correspondence between Bill Powers and Phil Runkel [1].
- 3 Improve performance by identifying and fixing a system's key constraints.**
Objects, events, and processes are systemically interrelated. Trying to solve a problem isolated at its point of manifestation creates more difficulty. One must go up a level to the larger systemic context. Madden sharpens this to focus on choke points, reminiscent of critical path analysis.



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By Bartley J. Madden

4 Behavior is control of perception.

Madden says this short book (about 100 pages, plus notes, etc.) developed over 30 years, beginning with curiosity about how we know what we think we know, followed by progressive recognition and questioning of assumptions. He quotes a number of writers in neuroscience and economics expressing views much like those reached by Bill Powers and others on the basis of PCT. We live in a world of perceptual constructs, many of them imagined, yet creating the illusion of direct contact with objects in the physical world. He cites John Dewey's later philosophy and its influence on Adelbert Ames' stunning experiments with perception, which in turn affected Bill Powers strongly. (Some of them may be experienced today in the Exploratorium in San Francisco.) But this is not the empty philosophical musing of an intellectual tourist visiting the marvelous world of perceptual illusions. His aim is to show these principles at work in business decisions that have had significant economic consequences in the lives of a great many people, and to show how to apply them for the amelioration of business processes and other social arrangements.

For Madden, a worldview is

a part of, and a result of, one's process of building knowledge. It represents the ideas and beliefs with which one sees, interprets, and interacts with the world. As a familiar example, it's easy to observe how those on the far left of the political spectrum see the world quite differently from those on the far right. (pp. 2-3)

In other words, perceptions on the System Concept and Principle levels ("ideas and beliefs") determine the ends to which one controls perceptions on the Program, Sequence, and lower levels (how "one sees, interprets, and interacts with the world").

Strongly held but faulty assumptions that influence how we see the world are not easily dislodged. To change how people behave, I believe it is helpful to appreciate how they see the world. Compelling evidence that speaks in a forceful way to the individual is required. Often, individuals need to understand why different circumstances—that is, a changed context—have made the validity of one or more of their assumptions obsolete. (p. 13)

“[A]ll too often their political ideology guides their selection of data and their interpretations, which, to no surprise, support their deeply held assumptions about how the world works.” (p. 16)

(The relevance to the history of PCT is obvious.)

A culture is a system of collectively controlled perceptions at the highest levels. “Cultural” artifacts controlled at lower levels function as reminders of these System Concepts and Principles, useful for teaching, learning, and even for enforcing them or opposing them. Language supports the most obvious examples. Indeed, Madden cites a document by Ray Dalio called *Principles*.^[2]

The main reason Bridgewater performs well is that all people here have the power to speak openly and equally and because their views are judged on the merits of what they are saying. Through that extreme openness and a meritocracy of thought, we identify and solve problems better. Since we know we can rely on honesty, we succeed more and we ultimately become closer, and since we succeed and are close we are more committed to this mission and to each other. It is a self-reinforcing, virtuous cycle.

Create a culture in which it is OK to make mistakes but unacceptable not to identify analyze, and learn from them. (p. 35)

The application of these concepts and principles to business problems is sometimes quite simple. Managers had been evaluating performance by how quickly a maintenance team got balky equipment back on line. When they changed the CV, evaluating instead how long the equipment ran between breakdowns, the team stopped making their fire drill more efficient and analyzed what was wrong with the equipment. In general, there is a shift from local efficiencies to overall system optimization.

“Although the installation of a more efficient and faster machine at A upstream—which feeds into B—will improve A’s performance, this can easily make matters worse for B and degrade the overall system’s performance.” (p. 50)

Rather than maximizing some value given existing constraints, identify what to change (the CV where the system is constrained), what to change it to (reference), and how to bring about the change (output function and disturbances). Madden’s ‘evaporating cloud’ example (pp. 51-53) shows

“how a conflict situation can evaporate once a faulty assumption is revealed”

by going up a level, in a remarkable parallel to the Method of Levels.

The end of Madden’s Chapter 4 tidily dismisses the CogSci phantasy of perception as information from the world, cognition as information processing over a symbolic rendition of that information, and intentional action as the carrying-out of commands output from that central cognitive system. Chapter 5 gives a very succinct summary of PCT. One might cavil at a diagram label here or there, but all told it is really quite competent. Chapter 6 presents a case study proposing greater transparency and engagement of patients in the process of testing and FDA approval of drugs. His account of a significant cause of the high cost of pharmaceuticals is convincing (though the usual attributions to executive salaries and shareholder returns are no doubt also true), and his plea on behalf of people with life-threatening illnesses is compelling.

We may guess at the System Concepts and Principles that Madden controls. Of course, without protracted testing for controlled variables these are mere projections of imagined agreements or conflicts with our own “ideas and beliefs”. He quotes with approval the economist Edmund Phelps concept of ‘flourishing’, “engagement, meeting challenges, self-expression, and personal growth.” (p. 16). Phelps says (p. 17):

“In my account, attitudes and beliefs were the wellspring of the dynamism [and prosperity] of the modern economies. It is mainly a culture protecting and inspiring individuality, imagination, understanding and self-expression that drives a nation’s indigenous innovation. . . . the intellectual growth that comes from actively engaging the world and the moral growth that comes from creating and exploring in the face of uncertainty.”

Madden continues:

“Fiscal irresponsibility, cronyism with its endless special-interest laws and regulations, and corporate short-termism have been leading the way in the opposite direction.” (p. 18)

Elsewhere, he says:

“Society benefits from business firms competing,” (p. 94), and “Those of us old enough will remember the AT&T phone monopoly that gave us clunky rotary-dial telephones.” (p. 79)

Certainly, our world of cell phones and smart phones would have been much delayed and perhaps could not have emerged without the break-up of that monopoly. But competition sounds like conflict, and conflict is inherently bad for control. How could this be? Madden and countless other businesspeople must be wrong about the virtues of competition.

But is competition the same as conflict? Consider two sprinters in a race. Does the faster speed of racer A restrict the ability of racer B to control his speed? What of the runner who comes in last and is elated because it is his ‘personal best’? What of the jogger who is ‘competing against herself’? Competition is a rather more complex matter than mere conflict. We must be attentive to how “past experiences shape assumptions.” Words that seem synonymous may mask important differences. We may have to go up a level to see them. We have to perceive matters from the point of view of the observed person in order to begin to determine what they are controlling.

[1] Powers & Runkel (2011), *Dialogue Concerning the Two Chief Approaches to a Science of Life: Word Pictures and Correlations versus Working Models*. Hayward: LCS Publishing.

[2] Dalio, Ray. *Principles*. <http://www.bwater.com/Uploads/FileManager/Principles/Bridgewater-Associates-Ray-Dalio-Principles.pdf>