

Book Review: TRIZ: Through the Eyes of an American TRIZ Specialist

By Ralph Czerepinski, *innovation consultant*, Ralph@czere.com

TRIZ: Through the Eyes of an American TRIZ Specialist, by Dana W. Clarke, Sr., Applied Innovation Alliance, December, 2002. 80 pp US\$30. Order from the [Products and Services page](#) of the TRIZ Journal or from <http://www.aia-consulting.com>

Dana Clarke is well known among North American practitioners of TRIZ as one of the best teachers of the subject available.

"This book ... is designed for new students and practitioners of structured innovation to use as a guide to the Basic Premises of TRIZ." This book accomplishes this, but with none of Dana Clarke's characteristic teaching sparkle and enthusiasm.

TRIZ can be a beautiful exciting experience with surprises around every corner. It's not the theory of TRIZ which is exciting; it is the euphoric experience of discovery of solutions to difficult problems. But this very excitement causes a problem: How does a technical person who has discovered TRIZ get his corporate management to underwrite the training needed to get people up to speed on creative problem solving?

There is a huge need for a good book that introduces TRIZ without trying to teach all of how to do it. Which immediately invokes an interesting contradiction: TRIZ can only be learned by *doing* it (preferably under with the guidance of a good TRIZ teacher who is considerably more experienced with it than the student).

I've always made the analogy with swimming. No matter how many books you read on swimming, or how many seminars given by Olympic gold medallists, you just don't know anything about how to swim until you are in the water - especially water over your head.

In these harsh economic times, most managers who would have to underwrite TRIZ training are limited by shrinking budgets, shrinking manpower and increasing expectations from above.

So how does an eager recent convert employee underling explain TRIZ and its enormous potential value to the manager? A possibility would be a small book serving as a simple, digestible introduction to TRIZ. This needn't be a "how -to" book, but might have a couple of examples of how TRIZ solved some problems, and how TRIZ has successfully predicted some next-generation products.

More valuable might be some case histories from an operational point of view with clear economic and/or time-savings benefits spelled out. Harried managers need something that can be read in one evening, which will convince them of the value of TRIZ to their organization.

Dana Clarke has written a book with the purpose of introducing TRIZ to scientists and engineers, but it doesn't bridge the huge rift described above. Many chapters introduce TRIZ jargon without really defining it.

The first couple of chapters offer an excellent attention-getter for anyone who might need TRIZ without being aware of it.

But the third chapter, "Ideality", while an easy read for people who have already been trained in TRIZ, starts way too abruptly for a novice. The opening paragraph is very a difficult concept for the uninformed. It is a conclusion, not a premise.

One of the difficulties TRIZ has had to bear as it has become adopted in English-speaking countries is translation from the Russian. Many words and concepts just don't come across well with literal translations. Examples might include such TRIZ terms as "Spheroidality" and "Anti-weight". Mr. Clarke's "Field and Informational Resources" include "Fields of Dissipation", which more properly might be translated as, "gradients". There is a little awkwardness here in the phrase, "Fields (energy)". They are not exactly parallel. Energy is exchanged, or converted by moving across a field gradient, but a "field" *per se* is not "energy".

Mr. Clarke's unit on System Approach Thinking, expands Altshuller's classic 9-cell system model to deal with cause and effect, and inputs and outputs, and useful and harmful results. Mr. Clarke offers some statements that might cause logicians to pause:

"Problems are caused by something. Cause and effect implies that an effect is a problem. And problems produce some harmful output (or result)."

As a logician, I would argue that *problems* are our value-interpretation of outputs or effects as harmful. Thus, an effect is a problem if it causes harmful results, and it is a benefit if that result is desired.

An *effect* has no intrinsic harm or benefit until placed into a context. Making coffee hot makes it more enjoyable (beneficial), while makes it more harmful in the context of a spill into one's lap. The effect, "Hotness" has *value* (positive or negative) only in a context. In his search for simplification of the concept and the language of problem definition, he has gone too far.

Dana Clarke introduces in a single page, *Simple ARIZ*. This is a very clear and concise integration of many of the tools introduced in earlier chapters. The outline is clear, but again, too theoretical for a beginner to apply.

As a closing, *Integration with Other Methodologies* is considered. This is a valuable discussion, as TRIZ integrates nicely with and in fact, enhances many well-known tools without displacing them in any way. This would be one of the sales tools for the reluctant manager, and deserves more attention.

Overall the book is quite readable, but not at all applicable by, nor attractive to a beginner. As an introduction, it rushes through many of the basic precepts of TRIZ, but it does not really give people any opportunity to experience the joy of discovery that accompanies TRIZ problem solving. The biggest example is incomplete, and implies that one method of problem solving is superior to another without having actually illustrated how one of them could work.

To flash back to the swimming analogy, a description of the effervescence of cool water flowing over you as you swim on a hot day, or the thrill and explosion as you go off the high board into the diving well, or the absolute beauty of snorkeling in tropical waters near a coral reef can create for the novice an intense desire to learn more. On the other hand, describing increased blood circulation and carbohydrate metabolism, or offering a detailed description of the muscular interaction differences between the crawl and the butterfly may be important to a swimming trainer, but will not likely create excitement in a non-swimmer.

We need to share the excitement of TRIZ, or else show beginners how to use it in such a way that very early in the process, they discover for themselves how exciting it can be.

"This book ...is designed for new students and practitioners of structured innovation to use as a guide to the Basic Premises of TRIZ." This book does accomplish this, but I miss the sparkle, the vibrancy, and the enthusiasm that I have experienced in Dana Clarke's tutorials. Nonetheless, there are some good chapters and good introductions of some key concepts. More of these, and more complete case histories more how-to's, and a lot less jargon could turn this into a wonderful and engaging introduction.