

# About the Toyota Kata Research

By Mike Rother, Ann Arbor, July 2014

The research that led to the book *Toyota Kata* ran from 2004-2009. The objective was to gain a deeper understanding of how Toyota manages people in order to achieve continuous improvement and adaptation, and what it will take to develop that in non-Toyota organizations. The research was driven by these two questions:

1. What are the unseen managerial routines and thinking that lie behind Toyota's success with continuous improvement and adaptation?
2. How can other companies develop similar routines and thinking in their organizations?

I and my colleagues began by interviewing Toyota people, but it quickly became apparent that they have difficulty articulating and explaining the patterns of their thinking and routines. I believe this is because such patterns represent the customary way of doing things in an organization and are thus somewhat invisible to those carrying them out. The same is true for our managers in our management system.

So we had to shift to figuring it out ourselves by experimenting in factory and managerial settings. Five companies agreed to provide long-term test beds, and several additional companies became sites for shorter, specific trials. The experimenting involved applying technical and managerial Toyota practices and paying particular attention to what did *not* work as intended, investigating why, adjusting accordingly and trying again.

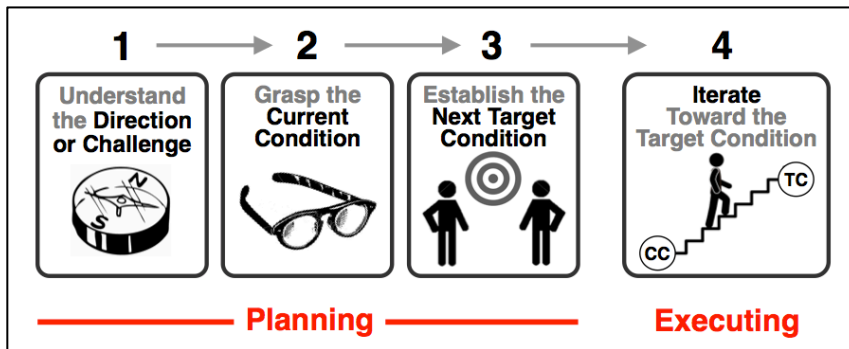
During that six-year investigation process I also periodically met with Toyota-group sites, Toyota suppliers and Toyota employees to discuss our interim findings and ask for comment, which would often influence the character of our next trials.

## The Improvement Kata Model

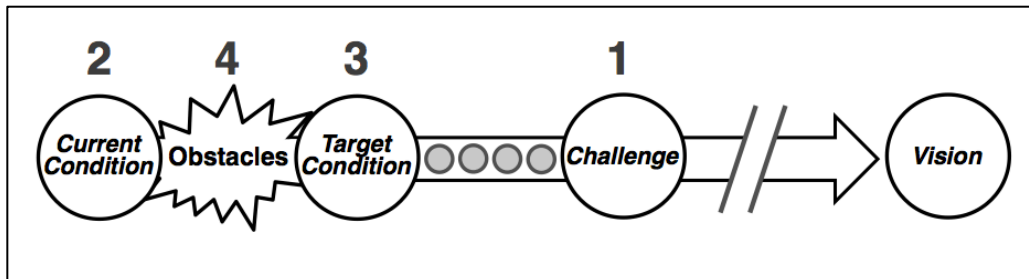
After numerous iterations and observations we began to see a repeating pattern of thinking and behavior in Toyota managers' approach, that was different from our prevailing Western command-and-control managerial routines. Each Toyota

manager has their own style of working, of course, but if you study it enough a common pattern of thinking and acting emerges, which is evident at all levels at Toyota. The content of what is being worked on differs from area to area and level to level, but the thinking pattern is the same.

I depicted the pattern of thinking and behavior with a four-step **model**, which I named the “Improvement Kata” after noticing a connection between Toyota's management approach and the concept of Kata (practice routines and "way of doing things") in Japanese culture.<sup>1</sup>



**Figure 1. The Improvement Kata Model**



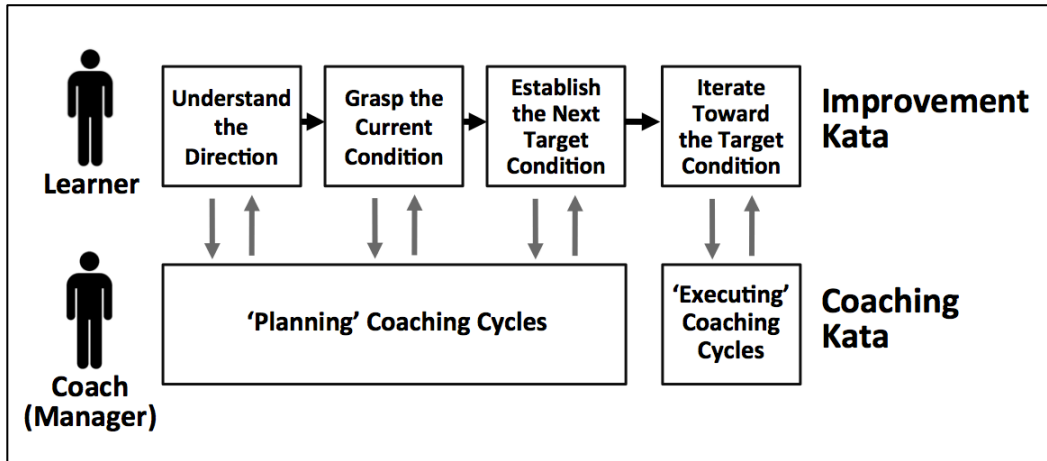
**Figure 2. The Improvement Kata Model, alternate view**

If you step back, the Improvement Kata pattern that distilled out of our investigations is similar to other models of the human iterative, creative, scientific process. Examples of related models include *systems thinking*, *critical thinking*, *learning organization*, *design thinking*, *creative thinking*, *solution focused practice*, *preferred futuring*, *skills of inquiry*, *evidence-based learning*, and so on.

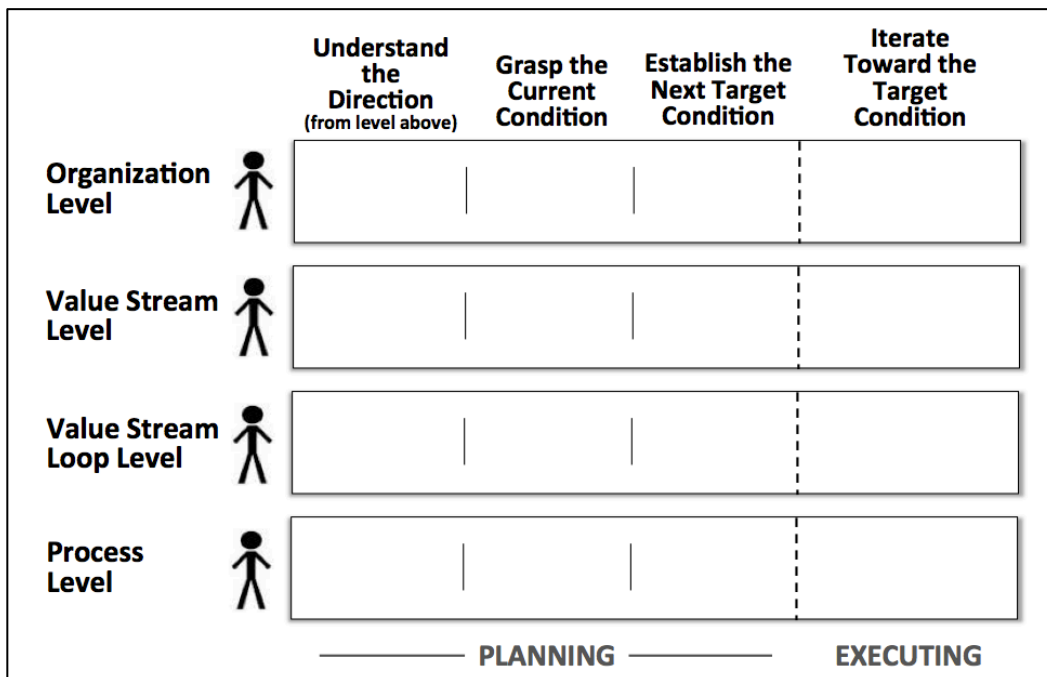
Finding commonality between Toyota's management approach and various models of human creative endeavor makes perfect sense.

<sup>1</sup> For example, see: De Menthe, Boye Lafayette, *Behind the Japanese Bow* (Lincolnwood, IL: Passport Books)

What Toyota managers are doing by combining the Improvement Kata pattern and Toyota's traditional Master-Apprentice teaching approach (which I call the "Coaching Kata" because it resembles training in sports) in their daily work is teaching a universal human means of improving, adapting and innovating. Toyota's management approach involves teaching people a scientific mindset that can be applied to an infinite number of objectives, thereby creating a deliberate, shared way of working throughout the organization. I believe this is a major contribution to Toyota's long-term success.



**Figure 3. The Improvement Kata plus the Coaching Kata comprise a system of management**



**Figure 4. The Improvement Kata pattern of thinking & acting at each level**

Compared with traditional Western command-and-control management, Toyota's Improvement Kata + Coaching Kata managerial system is well-suited to dealing with challenging goals in complex systems, which by their nature involve finding our way along unpredictable paths through a systematic process of discovery and adjustment. One could call it, *a management system for developing people to meet challenges*, or, *scientific thinking applied in business*.

Toyota's management approach also makes Toyota more successful at moving decision-making closer to where the action is, or 'empowerment.' Just telling people they are empowered is insufficient for tapping the brainpower inside an organization in a purposeful way. If people in an organization are expected to make decisions and navigate rapidly at their level, rather than waiting to be told what to do, then they also need to be taught effective skills for how to do that navigating. That is what Toyota managers teach via the patterns of the Improvement Kata and Coaching Kata.

## **Outside Toyota: We Need Practice Routines**

The second TK research question -- *How can other companies develop such routines and thinking in their organizations?* -- led us further. It was clear that just sharing the Improvement Kata model by itself will not generate new ways of thinking and acting. As mentioned, several other models of scientific working have already been promoted in the business world over the last decades, with little change in Western management to show for it.

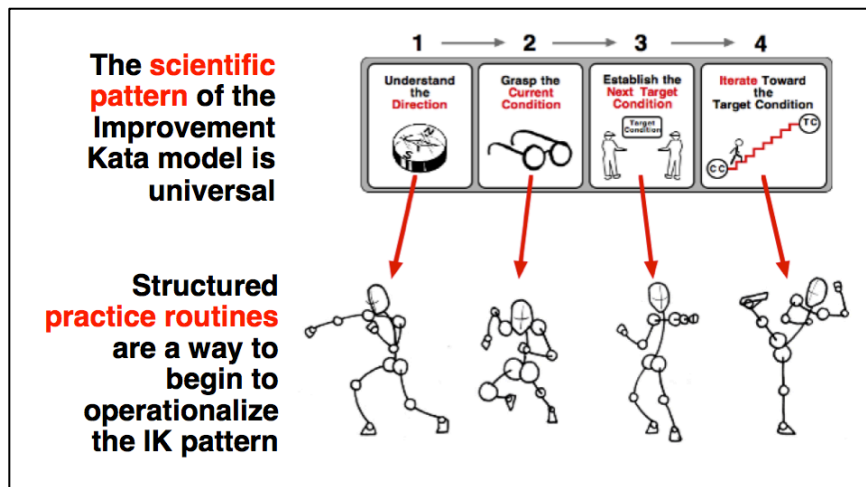
A key point to realize is that organizations *outside* Toyota face a significantly different task in adopting this kind of management approach than does Toyota. Toyota has numerous experienced coaches among its managers and is trying to preserve its culture, whereas other organizations need to *change* culture and do not yet have coaches (managers) with experience in the new way.

The Catch-22 that organizations outside Toyota face led us to developing structured practice routines for each of the four steps of the Improvement Kata pattern and for the Coaching Kata. That is, a model can be broken down to specific skills that can be individually practiced and mastered.<sup>2</sup> That is the intended role of Kata (plural), which involve deliberate practice of specified

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<sup>2</sup> The IK/CK practice routines are described in the free online *Improvement Kata Handbook* at: [http://www-personal.umich.edu/~mrother/Materials\\_to\\_Download.html](http://www-personal.umich.edu/~mrother/Materials_to_Download.html)

routines -- similar to playing scales in music -- to help the Learner acquire some new fundamental skills and mindset. It's an element of the change process. And those fundamentals -- which in the case of the Improvement Kata are basic scientific skills and thinking -- become a foundation upon which the Learner's creativity and initiative can then proliferate.



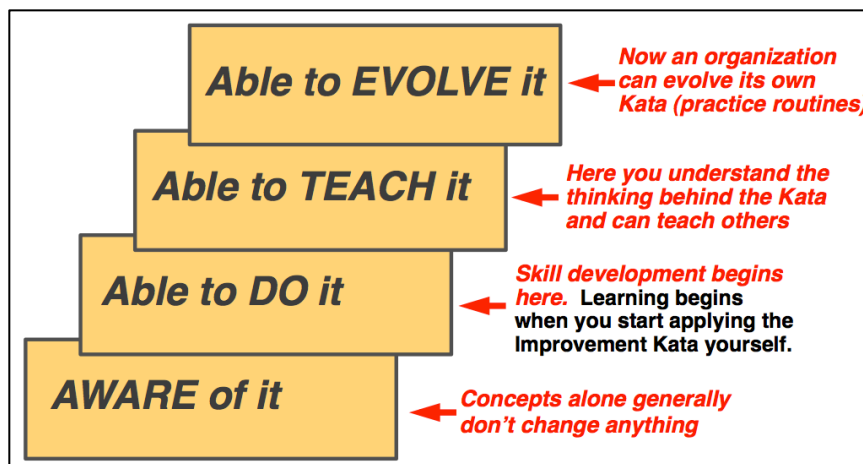
**Figure 5. The role of practice routines**

Our starting point for developing Improvement Kata and Coaching Kata practice routines was what we observed Toyota managers doing and having their Learners do as they guided their Learners through the stages of the Improvement Kata pattern. However, as we evolved the practice routines through trials (which we continue to do) they naturally grew into a non-Toyota-specific approach. This is not about copying Toyota, but about emulating the intention via practice routines that suit a wide range of organizations.

## Getting to Organization-Specific Practice Routines

Every organization should ultimately have its own organization-specific practice routines (Kata) for developing essential skills, that suit its circumstances and culture. However, the Catch-22 of initially not having enough coaches (managers) who have experience with the new skills means an organization should probably not begin by developing their own practice routines. The organization is not ready for that because its members are still beginners in the new way. If the organization jumps right to developing its own practice routines, it's a good bet that the managers' *existing* mindset and ways of working are what will actually get practiced and learned.

A more promising approach is to begin with some already-established structured practice routines, such as those related to the Improvement Kata and Coaching Kata, and as a critical mass of knowledge and skill is developed, then evolve those routines to suit your organization. (A corollary is that the practicing should typically begin at the top of the organization; with senior managers.) The practice routines of the Improvement Kata and Coaching Kata are a useful starting point for any team or organization that wants to adopt and develop a more scientific approach.



**Figure 6. Levels of skill development**

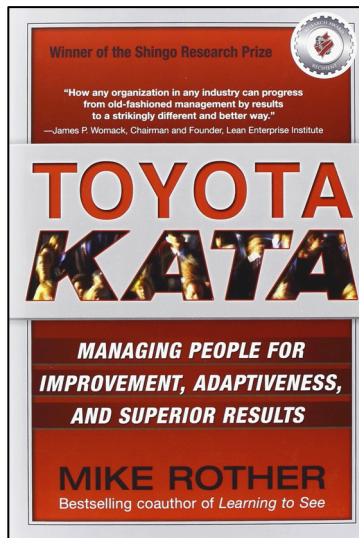
## **Where are We Today?**

At this point in our learning, the second TK research question -- *How can other companies develop such routines and thinking in their organizations?* -- continues as a main focus of my investigations. And that's the purpose of the Toyota Kata Website... to continue sharing what we're learning about deliberate practice to help achieve continuous improvement, adaptiveness and culture change.

*Mike Rother*

**Table 1.** A change path proposed by the Toyota Kata research. It utilizes deliberate practice of structured routines to help develop scientific skill, mindset and culture in organizations.

<p><b>(1) A Model</b></p> <p>1 → 2 → 3 → 4</p> <p>Understand the Direction    Grasp the Current Condition    Establish the Next Target Condition    Iterate Toward the Target Condition</p> <p>— Planning —    Executing</p>	<p><b>A representation of something that occurs in reality. Models help researchers describe, predict, test and understand systems.</b></p> <p><i>“Essentially, all models are wrong, but some are useful.” - George E. P. Box</i></p>
<p><b>(2) Structured Practice Routines</b></p>	<p><b>Starting routines. Specific training exercises to develop fundamental skills and mindset, especially at the beginning. These help turn concepts into reality.</b></p> <p>(Supported by coaching routines.)</p>
<p><b>(3) Organization-Specific Practice Routines</b></p>	<p><b>As proficiency increases, each organization can evolve the starting practice routines into its own practice routines, to better fit its circumstances and culture.</b></p>



## Book Summary by Bill Costantino

**The intent of *Toyota Kata* is to illuminate essential management thinking and behavior patterns underlying Toyota's enduring success.**

*Toyota Kata* delivers an analysis of Toyota's management system plus practical steps for developing these thought and behavior patterns in any workplace setting. The routines described in *Toyota Kata* are grounded in the scientific method and thus promote systematic thinking in both leaders and their subordinates.

Anyone who has been on the Lean journey will immediately and easily relate to the material *Toyota Kata* contains. However, *Toyota Kata* provides a new and different way of engaging with the familiar Lean elements, tools and systems: it provides a path for changing daily management behavior to activate human capability. It is this systematic developing and tapping of human abilities that is an unseen yet defining feature of Toyota's decades-long success.

This book is about a means of managing differently and more effectively. It addresses the topic at the grass-roots level of patterns we practice as we go about our daily routines. While these patterns are often unconscious and reflexive, they are bedrock that shape an organization's culture and its ability to adapt and continuously improve. *Toyota Kata* provides a concise and reliable approach for developing such skills and mindset within any company or organization, and is universal enough to extend far beyond the manufacturing sector.