

# 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?**

My colleagues and I 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. This may be true for managers in any 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 pattern of thinking and behavior in Toyota managers' approach, which was different from our prevailing Western command-and-control managerial routines. Each Toyota manager has their own style, 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.

In research you usually try to represent the phenomenon you are studying with a model. I depicted Toyota's 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 (in this case the suffix 方, meaning "way of doing") in Japanese culture.<sup>1</sup>

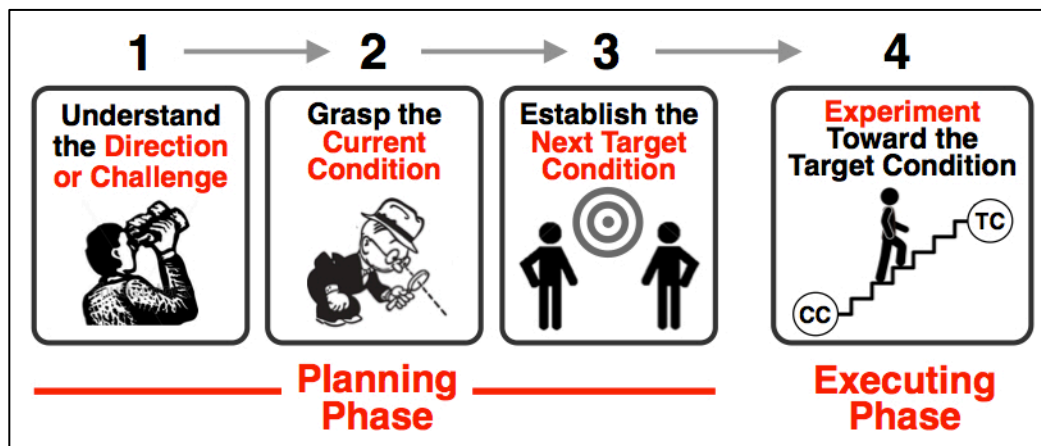


Figure 1. The Improvement Kata Model

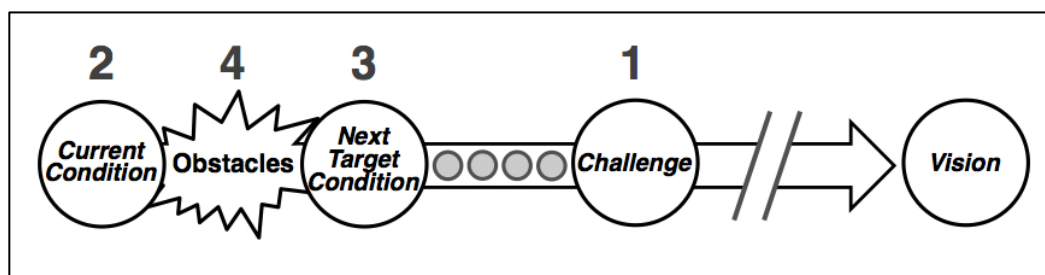
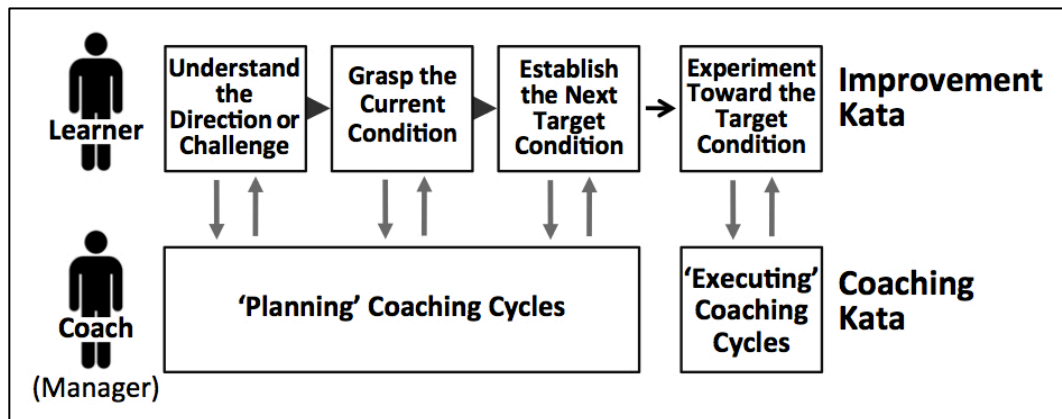


Figure 2. The Improvement Kata Model, alternate view

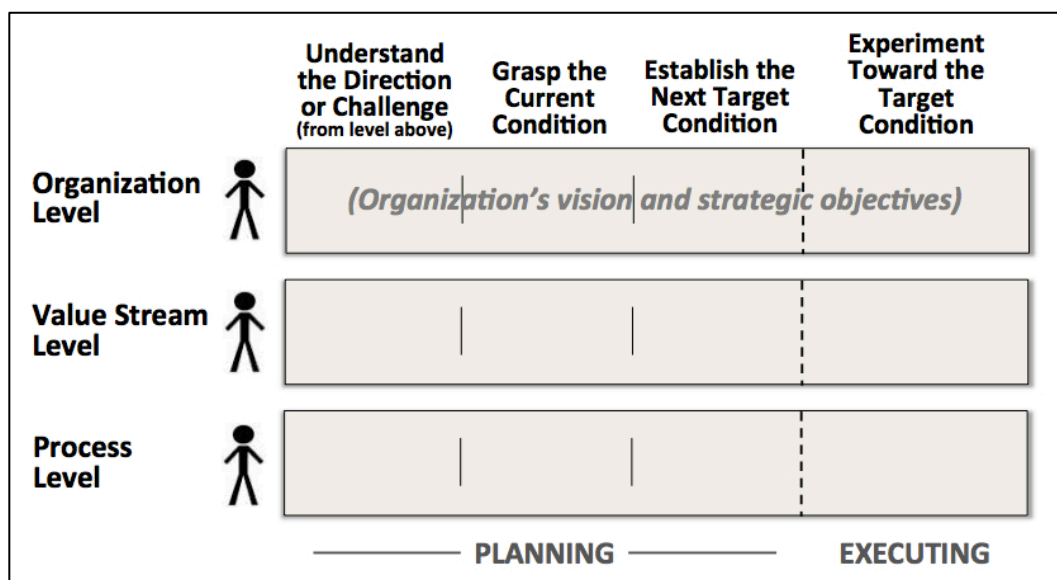
The Improvement Kata pattern that distilled out of our investigations is similar to other models of the human iterative, creative, scientific process. Examples of related models include *systems thinking*, *critical thinking*, *learning organization*, *design thinking*, *creative thinking*, *solution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

Compared with a traditional command-and-control management approach, 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, i.e., '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 through practice of the Improvement Kata and Coaching Kata patterns.

## **Outside Toyota: We Need Practice Routines, or *Starter Kata***

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 above, several models of scientific working have been promoted in the business world over the last decades, with little change in Western management to show for it.

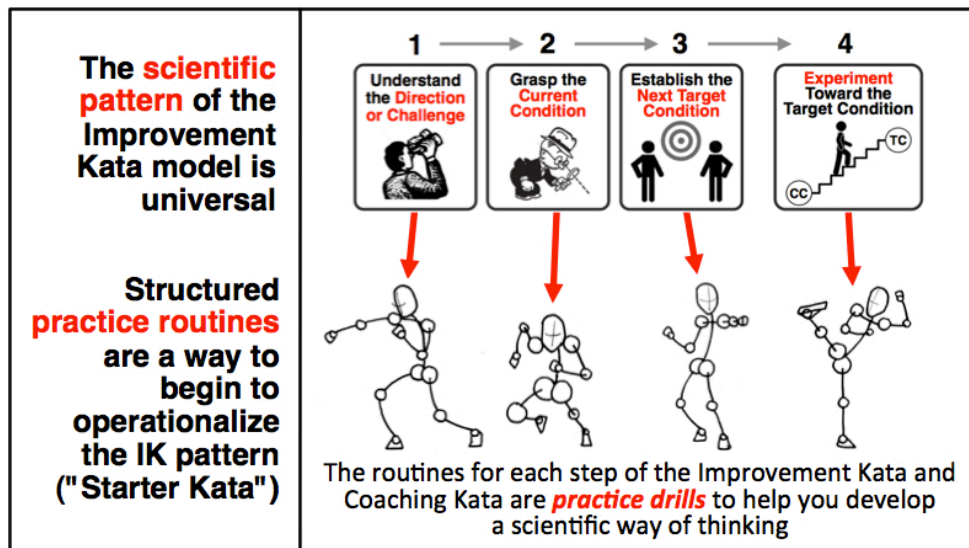
It's important to realize that organizations *outside* Toyota face a different task in adopting this kind of management approach than does Toyota. Toyota is trying to *preserve* its culture and already has many experienced coaches among its managers. Other organizations, however, need to *change* culture and do not yet have coaches (managers) with experience in the new way who can teach that way of doing things.

This problem led us to developing structured practice routines, which I call *Starter Kata* (in this case 型 or 形, meaning "form"), for each of the four steps of the Improvement Kata model and for coaching (teaching) that pattern. That is, the Improvement Kata model can be broken down into sequences of fundamental skills that can be practiced and mastered to help operationalize the model.<sup>2</sup> This is like

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

playing scales in music or doing practice drills in sports, which help a Learner acquire new fundamental skills and mindset that they can tie together and build on. With the Improvement Kata these fundamentals make up systematic, entrepreneurial, scientific thinking, which becomes a foundation upon which the Learners' creativity and initiative can 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, who over time can develop their own ways.

## Developing Your Own Way

Every organization should ultimately have its own, organization-specific practice routines (Kata) for developing and maintaining scientific skills and mindset. However, the problem of initially not having enough coaches (managers) who have experience with those 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 practice routines, like the Starter Kata for the Improvement Kata and Coaching Kata, and then evolve those routines to suit your organization once a critical mass of competency and knowledge is developed. (A corollary is that such practicing should typically happen top-down in the organization.) The practice routines of the Improvement Kata and Coaching Kata are a useful starting point for any individual, team or organization who would like to develop a more scientific mindset and approach.

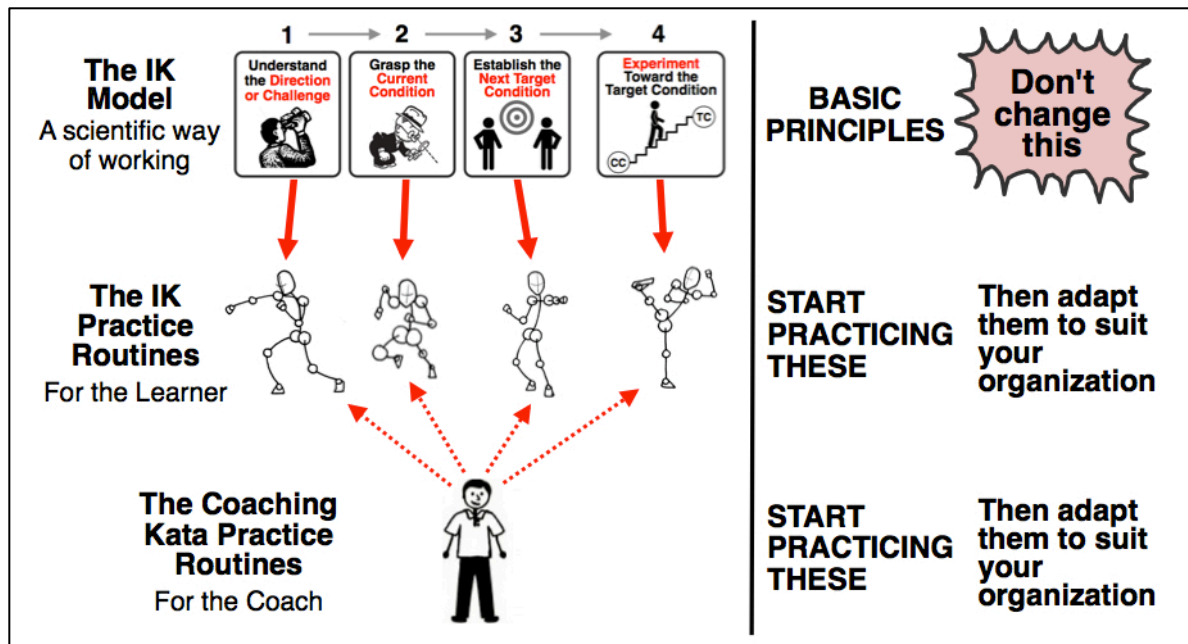


Figure 6. What is fundamental versus what is changeable

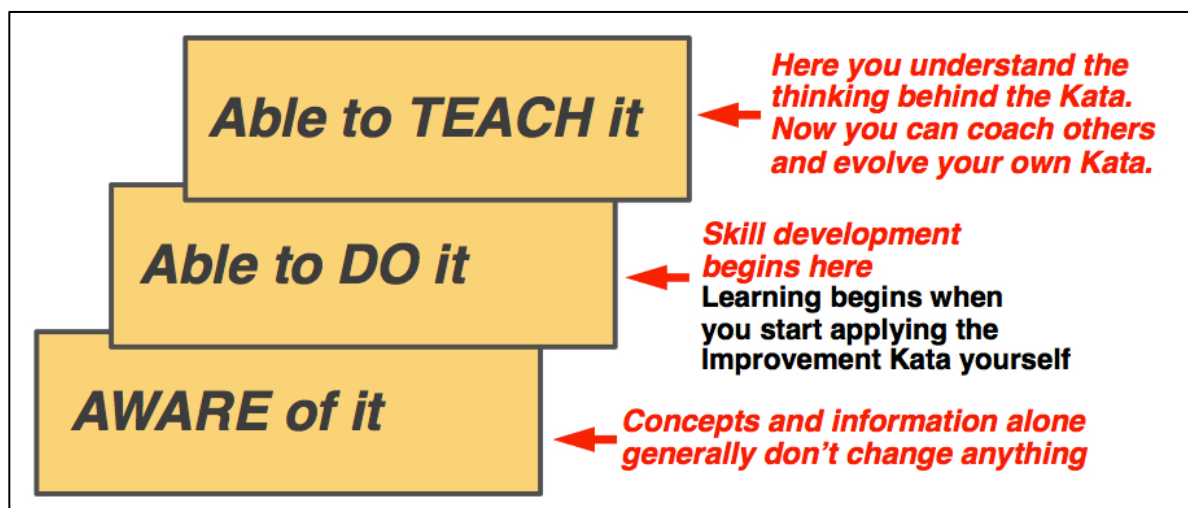


Figure 7. Levels of skill development

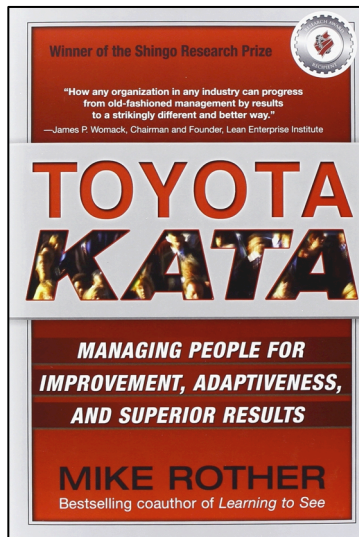
## Where are We Today?

At this time the second TK research question -- *How can other companies develop such routines and thinking in their organizations?* -- continues as the 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 of scientific skills to help develop an organizational culture of continuous improvement and adaptation.

*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><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 Starter Practice Routines</b></p>	<p><b>Starting routines ("Starter Kata"). Specific training drills to develop fundamental skills and mindset, especially at the beginning. These help turn concepts into reality. (Supported by coaching routines.)</b></p>
	<p><b>(3) Organization-Specific 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.