

*This is the fourth of a series of 12 articles on systems thinking, a way of understanding complex organizations and society offering significant promise for improving the leadership and management of commercial companies, not-for-profit organizations, and government agencies.*

## Part 4

# Operationalizing Sun Tzu: The O-O-D-A Loop

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Those who win every battle are not really skillful—those who render others' armies helpless without fighting are the best of all.

—Sun Tzu, *The Art of War* [1:67]

By now most people have heard of the ancient Chinese general, Sun Tzu, and his writings about military strategy called *The Art of War*. Sun Tzu lived about 2,400 years ago. What many may not realize, however, is that *The Art of War* is a compendium of cogent military thought that has been amplified and expanded upon through the 12th century AD by other skillful Chinese generals—“the best of Chinese military genius”, one might say.

Somewhat fewer people (but still a significant number) are aware that principles articulated in *The Art of War* can be translated to the domain of business. Some business schools even require students to read *The Art of War* as part of their curriculum. However, though they may have done such required reading, very few business students of Sun Tzu are really adept at translating those precepts to practice. Some authors (McNeilly, for one) have done so and written about it. [2]

Clearly, there are parallels between military engagements and business, or, for that matter, with competitive sports, or other comparable activities where winning or losing (however one defines those) is possible. The principles in *The Art of War* can be effectively applied to such situations, whether the opponent is a specific adversary or even just an unforgiving environment itself.

*The Art of War* is replete with useful information, both strategic and tactical—too much to analyze at length here. That's not the purpose of this installment in any event. For our purpose—showing how to make that application leap that so many haven't been able to do—it's sufficient to select a few of Sun Tzu's key principles. Here are the ones we'll address:

1. If you know others and know yourself, you will not be imperiled in a hundred battles...if you do not know others and do not know yourself, you will be imperiled in every single battle. [1:82]

This principle addresses the importance of understanding your own system—its capabilities, needs, objectives, and values—as well as those of your opponents.

2. Unless you know the mountains and forests, the defiles and impasses, and the lay of the marshes and swamps, you cannot maneuver with an armed force. [1:116]

This principle emphasizes the need to fully understand the external environment in which you—and your adversaries—operate in. In business, this is more than just the market conditions or the regulatory environment. It includes the political and cultural environment as well.

3. I have heard of military operations that were clumsy but swift, but I have never seen one that was skillful and lasted a long time. It is never beneficial to have [an] operation continue for a long time. [1:58]

In this observation, Sun Tzu points out the importance of speed in commencing and concluding operations and activities—of not allowing things to drag on.

4. Act after having made assessments. The one who first knows the measures of far and near wins. [1:119]

The emphasis here is on making assessments. This is another way of saying “synthesize all your information into a clear picture of what is going on and where you stand in the situation; then act.” (presumably with the speed advised in 3, above!)

5. Generals who know all possible adaptations to take advantage of the ground know how to use military forces. If generals do not know how to adapt advantageously, even if they know the lay of the land they cannot take advantage of it. [1:126]

6. Adaptation means not clinging to fixed methods, but changing appropriately according to events, acting as is suitable. [Zhang Yu] [1:125]

7. A military force has no constant formation, water has no constant shape: the ability to gain victory by changing and adapting according to the opponent is called genius. [1:113]

These three precepts are all about flexibility and the capability to adjust (or adapt) to new situations—again, quickly.

8. In battle, confrontation is done directly, victory is gained by surprise. [1:94]

Here Sun Tzu makes the point that the most visible or obvious engagement is not where war is actually won. In other words, the direct engagement is no more than a way of fixing the adversary's attention while the decisive engagement is concluded at a point where the enemy is weak-and not as well prepared. In other words, “Hit `em where they ain't.”

### **The O-O-D-A Loop**

John Boyd, a retired Air Force colonel whose concept of destruction and creation we examined in the last installment, conceived a four-step prescription to guide the prosecution of military operations to swift, ultimate victory. Boyd called this prescription the O-O-D-A loop. And in the same way that Sun Tzu's principles are applicable to business operations, so too is Boyd's O-O-D-A loop. Moreover, the O-O-D-A loop provides highly focused guidance for effectively applying the specific *Art of War* principles cited above. It can be considered a command-and-control loop. [3:165]

“O-O-D-A” is an acronym that stands for *observe, orient, decide, and act*. These are sequential activities that guide leaders to effective decisions. The *act* step that culminates this process ultimately produces changes in the environment that merit a *new*, subsequent round of observations, followed by a second cycle of orientation, decision, and action. Boyd suggested that individuals or groups that could cycle through these four steps faster than their adversaries had a tactical advantage. To the extent that they could execute the cycle two or more times faster than their opponents could complete one, they would actually increase the opposition's confusion about the competitive situation to such a degree that the opponent's efforts might totally collapse. The accompanying figure provides a detailed picture of the O-O-D-A loop.

It's worth examining these steps in somewhat more detail.

#### ***Observe***

Observation, the first step in the O-O-D-A loop, is a search for information. The information that should be sought is, first and foremost, the nature of unfolding circumstances—the tactical situation. Only slightly less urgent is what Boyd called “outside information.” This could include the environment; the behavior and tendencies of oneself and one's opponents; the physical, mental, and moral situation; and potential

allies and other opponents. [4:62] It must be emphasized that this is *not* a passive step—it requires a concerted, active effort to seek out all the information possible, by whatever means available.

Moreover, bad news is the only kind that will do you any good. [4:63] What you're looking for—what you can best capitalize on—are data that don't fit with your current orientation, or worldview (and especially the worldview of your opponent). It is these “mismatches” that offer the potential for learning something that your adversaries don't know, thereby creating a tactical advantage that you can exploit.

### ***Orient***

Orient is the “big O” in the O-O-D-A loop, as you can see from the complexity of that part of the illustration above. Notice that there are three arrows leading out of the orient block, but only one leading in, reinforcing the notion that our orientation to the world shapes the decisions we make, the actions we take, and what we choose to observe—what we look for—in the world around us.

Our orientation is a synthesis of multiple contributions, including cultural traditions, previous experiences, genetic heritage, and new information based on unfolding circumstances. These contributions are then analyzed and synthesized (remember the snowmobile analogy from the last installment?) into a new, updated picture of reality—a worldview. To the extent that a tactician or strategist is able to synthesize a more accurate picture of reality than his or her opponent, the quality of decisions and the effectiveness of actions improve, sometimes dramatically. To the extent that the tactician/strategist can deny that accurate picture to the adversary, the quality of the opponent's decisions and the effectiveness of his actions deteriorate. Boyd referred to this analysis-and-synthesis process as “many-sided, implicit cross-referencing.” [4:62]

It's *orientation*, however, that drives everything else. The faster we can orient ourselves, the greater the congruence with objective reality that we can make our orientation, the better and more effective our observations, decisions, and actions will be.

### ***Decide***

In concept, this is an explicit step, meaning a discrete, conscious activity following hard on orientation. However, Boyd also realized that intuitive understanding of the situation and one's own capabilities (the *fingerspitzengefühl* discussed in our first installment) makes the decision step implicit, rather than explicit. This is a highly desirable situation, because it speeds the cycle time of the O-O-D-A loop. As early as the 17th century, the quintessential *samurai*, Musashi, emphasized the need to practice incessantly until this *fingerspitzengefühl* (not Musashi's word, obviously!) made the sword an extension of the warrior's arm and action instinctive, without having to think about it. In other words, implicit decision and action.

### ***Act***

The *act* step is largely self-evident. Action is the whole reason for going through the O-O-D steps in the first place. But it's crucial to keep in mind that the very action we attempt to execute will, itself, influence the environment in which we act. The environment will *change*, possibly only slightly, but more likely dramatically. This change in the “playing field” renders our orientation, or worldview, invalid to some degree: it introduces a mismatch between reality and our perception of it. The quicker we realize that this mismatch is developing, the sooner we can adjust our orientation to more closely approximate the new reality and act again. And this is the cyclic nature of the O-O-D-A loop.

### ***Speed***

A final word about speed. The more factors there are to consider, the more difficult it is to analyze and synthesize them all quickly. Knowing what to focus on and what can be ignored is crucial. Speed comes

from the implicit ability to do this, rather than from the explicit step. With experience and skill, an explicit *decide* step can be bypassed, and action becomes an implicit outcome of orientation, as Musashi intended. Moreover, the decision on what indicators to look for, or observe, in the external environment also becomes implicit (thus faster).

## Conclusion

In the next installment, we'll see how the *observe* and *orient* steps constitute the heart of what Peter Senge has called learning organizations. And the following installment will introduce the concept of system constraints as a means of separating what's important to synthesize from what isn't in the mass of data that observation produces.

The one who figures on victory at headquarters even before doing battle is the one who has the most strategic factors on his side...The one with many strategic factors in his favor wins, the one with few strategic factors in his favor loses—how much more so for one with no strategic factors in his favor. Observing the matter in this way, I can see who will win and who will lose.

—Sun Tzu, *The Art of War* [1:56]

## Endnotes

1. Sun Tzu. *The Art of War* (translated by Thomas Cleary). Boston, MA: Shambhala Publications, 1988.
2. McNeilly, Mark. *Sun Tzu and the Art of Business: Six Strategic Principles for Managers*. NY; Oxford University Press, 1996.
3. Hammond, Grant T. *The Mind of War: John Boyd and American Security*. Washington, D.C.: The Smithsonian Institution Press, 2001.
4. Richards, Chet. *Certain to Win*. Xlibris Corporation. 2004.