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BUILDING SHARED UNDERSTANDING

EMERGENT LEARNING IN ACTION: THE AFTER ACTION REVIEW

BY CHARLES S. PARRY AND MARILYN J. DARLING

Since the Industrial Revolution, our organizations and society at large have held three biases regarding learning. First, the transmission of knowledge from an outside expert, whether a teacher, consultant, or “best practice,” is seen as the essence of learning. Second, by institutionalizing “off-line” classroom learning, the building of capacity becomes separate from the use of that capacity. Third, learning is seen primarily as a matter for individuals, not groups.

Emergent learning practices turn these three biases on their head. The corresponding biases of emergent learning are:

- First, the essence of learning is the discovery and use of knowledge, and one of the best sources of actionable knowledge is that which emerges from people’s own experience.
- Second, a learning discipline should be woven into ongoing work, which integrates getting “real work” done with building greater capability.
- Third, learning is both possible and appropriate at a group level—by working and thinking together in certain ways, a work unit can build a real capacity for learning.

By weaving a disciplined process for learning through experience into the tapestry of ongoing work, an emergent learning practice helps people to use their own experience as a context for generating, refining, and validating knowledge, while enhancing their ability as a unit to “learn our way through” difficult and complex situations.

The U.S. Army’s After Action Review

Twenty years ago, U.S. Army leaders began to develop an approach to using on-the-ground action as the crucible for learning; today, this practice is one of the best, and longest running, examples of emergent learning. They named it the “After Action Review” (AAR). Originally developed to support training exercises, the

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AAR is now used within the Army for purposes ranging from improving operations efficiency to dealing with the impact of frequent assignment rotations. It is viewed as an expression of core Army values such as readiness and leadership.

The most visible aspect of an AAR is that of a leader gathering his or her team on a frequent basis to address a series of questions about their actions. For example, questions typically at the center of an AAR session include:

- What was supposed to happen?
- What actually did happen and why?
- What are we going to do (the same or differently) next time?

The lessons that emerge shape the plan for the next similar event. This

new plan, along with the action that occurs based upon it, becomes grist for yet another AAR session, and so on. When this rhythm of reflect-plan-act revolves around a central performance challenge, the practice begins to function as a competence-building machine: Over a number of iterations, the implicit and explicit knowledge held by the team about effectiveness in that particular domain evolves substantially. New practices and standards of excellence emerge. With enough iteration, the discipline tends to produce a distinct arena within which the group has honed its ability and confidence enough so that it is able to produce the results desired, regardless of circumstances—a so-called “island of mastery.”

[Continued on next page >](#)

INSIDE

SYSTEMS STORIES	6
Working in High-Leverage Zones with the Double-Loop Learning Matrix	
VIEWPOINT	9
Declaring War on Escalation	
FROM THE RESOURCE SHELF	10
Bridging Knowledge and Action	
SYSTEMS THINKING WORKOUT	11
Curbing School Violence—Or Fueling It?	
FROM THE FIELD	12

Because the Army is a very large organization, there is considerable variation in how frequently the AAR is used—some officers rarely use it, while many see it as inseparable from how they do leadership. Overall, though, most Army leaders consider the AAR to be instrumental to the Army’s evolution as an institution. Its simplicity and broad relevance have helped it become part of the institution’s cultural fabric. How did a learning practice become so integral a part of this organization?

The Evolution of the Army’s Learning Practice

Following the unsatisfactory results of the Vietnam War, the U.S. Army was compelled to reflect on and adjust its assumptions and methods. The Army’s senior leadership hypothesized that if units could be trained in a realistic environment closely simulating real combat—in scenarios that troops must be prepared to face in the future—the competence, spirit, and confidence of the force would be re-energized. The simulations would also be appropriate settings for leaders to realistically test their units’ readiness.

Four specialized facilities were created to operationalize this vision. Collectively, the mission of these training centers was to prepare Army units to win decisively, beginning with the first battle of the next war. The first of these, the National Training Center (NTC), came on line in 1981 at Fort Irwin, CA. A rotation at the NTC featured 14 days of simulated desert combat against a highly skilled, uncooperative “enemy” force based at the center. The typical day might include reconnaissance missions starting near midnight, a full-scale battle erupting at unpredictable times, a series of AARs, preparation for the next anticipated engagement, and maybe four hours of sleep before starting the whole process again.

Early AARs at the National Training Center. In the early days of the NTC, reviews were conducted at the company level as a retrospective critique of a unit’s performance—a post-mortem. The expectation was

that field units would visibly benefit from, and then quickly adopt, the rigorous level of critical analysis provided by the NTC staff. However, it soon became apparent that these critiques were not, in fact, producing the desired results:

- The formal critique format required a highly qualified officer, called an “Observer/Controller” or “O/C,” to dissect what the leader and soldiers had done wrong and leave them with a checklist to follow on the next mission. The emphasis on correction frequently led to an adversarial interaction and a

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focus on how well the unit had completed items on their checklist, and put unit leaders on the defensive.

- Handed a checklist, soldiers were not involved in teasing apart the elements of a problem, designing a solution, and determining how their actions contributed to the end result. Though they might know what to do, the *why* behind tactics remained elusive. In dynamic situations, they lacked the habit and tools to think together on their feet. Officers had no opportunity to develop an understanding of the effect their favorite tactics might have under unfamiliar conditions.

Changes in Mental Models. In a complex modern battlefield, the Army needed broadly skilled, thinking soldiers, not technicians with their faces in the rulebook. In systems language, the early approach to AARs shifted the burden of thoughtfulness and double-loop learning to an outside intervenor instead of to the

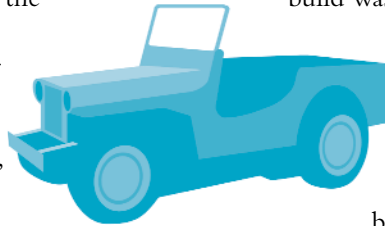
active battle participants. To their credit, NTC staff successfully refined the AAR practice over the last 20 years, evolving their tactics and mental models in significant ways. For example, today:

- The O/C role is an expert *facilitator* of learning, rather than an expert providing criticism and answers.
- O/Cs typically meet with the officer whose unit they will observe—in *advance* of a battle series—to agree on the most useful types of data to collect. O/Cs then use this data to focus their facilitation of the subsequent AAR.
- O/Cs focus the troops on trends and key data points and ask *them* to explain and posit actions to sustain or improve.
- The AAR cycle encompasses the *complete* challenge, beginning with the logistics of leaving “home station” and arriving at the NTC prepared for battle.
- Most importantly, AARs start at the platoon level and work their way *up* the chain of command: At each command level, leaders and their direct reports engage in disciplined self-discovery, evaluating their own performance against goals and standards, ferreting out systems problems, and developing improvements to test the next day.

The NTC today uses a great deal of technology for collecting and communicating data so that each unit can know as soon as the battle ends precisely what happened and see how its role in the big picture played out. Army staff have discovered that rich learning for officers and troops alike comes from comparing the “commander’s intent”—stated at the start of the mission—with what subsequently happens. The vivid intersection between Army “doctrine” (standard practices sorted out by recognizable situations such as a “movement to contact” with an enemy unit) and direct battle experience allows espoused theory and actual practice to shape each other on a daily basis.

A Typical AAR. After a battle, platoon leaders typically conduct their AAR session right in the desert, which might mean drawing in the sand or using jeeps to hold flipcharts:

- They focus on issues of local concern such as situational awareness, mechanical breakdowns, and communication.
- They compare their stated intent with the results achieved and their actions with what Army doctrine prescribes. These comparisons lead to a sharper understanding of leadership challenges (e.g., the unit commander is simultaneously in communication with all of his units on the ground).
- They elicit the thinking behind and underline the importance of following doctrine (e.g., why imprecise coordination between vehicle movements and supportive artillery can result in your killing your own people).
- To generate the insight needed to plan their next day's action, they may also access other resources, including battlefield statistics, videos of pivotal moments, cuts of radio communications, and satellite-generated playbacks of the battle.
- The unit may even get a visit from the "enemy" commander to hear what happened from his perspective—his objectives, strategy, situational awareness, hypotheses, and real-time adjustments.



Harley-Davidson's Kansas City plant. As director of manufacturing projects, Gee applied AARs to the build process to ensure that his team learned what it needed to launch a new product. After each pre-build, Gee conducted a series of AARs in which actual performance was matched against initial assumptions. Assumptions were then refined, standards were raised, and another pre-build was conducted.

Gee sees a double payback: Not only does the AAR practice produce performance improvements, it offers the bonus of increased team knowledge and confidence during production planning. He finds that his people are excited about their increased knowledge of the whole operation and have gained strong planning and data-gathering skills.

Geerlings & Wade. Steve Danckert built an AAR practice to manage warehouse operations at Geerlings & Wade, a wine retailer and distributor. He conducts formal, quarterly AARs with his team by phone, focusing on one particular event that happened during the quarter. For example, the focus of a fourth-quarter AAR was a pre-holiday spike in orders. Although not a surprise to anyone, the situation gave the team a chance to look at how its systems work under stress. Danckert reports that these reviews

not only improved performance in spike periods, they got everyone in the habit of analyzing successes and failures (and now it's not left for the boss to do).

Dankert pairs his quarterly AARs with informal, one-on-one, 15-minute "spot" AARs and finds the two reinforce one other. To build rapport with a new team in order to foster candor, he shows up at a warehouse in jeans periodically to pack orders alongside his warehouse managers for a few hours. He finds that over time his people have developed a mindset and a confidence that things *will* improve as a result of their AARs, and they take the initiative to call him with things to AAR.

Power Construction. Gary Shreiber, a vice president at Power Construction, recognized that the firm had grown too large to continue to rely solely on informal mechanisms to transfer knowledge and to problem-solve. Every construction project is a complex undertaking requiring a close working relationship between multiple organizations—architect, general contractor, owner, subcontractors, and so forth—as well as a high capacity for on-the-fly adjustments.

Schreiber created a series of "Lessons Learned Workshops" (LLW), modeled in part after the AAR, that bring the multi-firm project team together at the beginning, middle, and end of a large project. In a LLW, team

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Adapting the Army's AAR to Business Settings

The AAR was first introduced to the business world by ex-Army leaders, who brought the AAR with them into their new civilian work roles as company board members or staff. One of the earliest adoptions was in 1994: With retired general Gordon Sullivan on its board of directors, Shell Oil started using AARs during a transformation in its governance structure. But no matter the source, in every successful application, leaders have recognized the importance of adapting the process to fit their specific environment. Three companies' stories exemplify the variety available in designing effective AAR practices.

Harley-Davidson. Ted Gee uses an AAR practice to prepare his people for new model introductions at

POST-MORTEM VS. AAR PRACTICE	
Typical Post-Mortem	Typical AAR Practice
Purpose: to dissect past events to document and explain what happened.	Purpose: to prepare for a tangible challenge in the near future.
Planned <i>after</i> the project or event, from the perspective that understanding and insight is clearest in hindsight. Meeting is held soon after project completion.	Planned <i>before</i> the project or event, from the perspective that learning and improvement must happen throughout the project. Multiple meetings throughout the project.
Takes place as a meeting of all involved, followed by a presentation to others such as executives.	Takes place in small, task-focused groups, followed by action by those same people.
Reviews the entire process, aiming to be thorough.	Reviews moments, issues, or measures seen as relevant to going forward.
Produces a detailed report containing analysis and recommendations for others.	Produces an action plan that participants generated and will implement themselves.

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members articulate their aspirations and expectations, and review plans and performance data. On a wall-sized timeline, they identify “bullets” coming their way and “defining moments” from past experience that they see as relevant to those challenges. Shared hypotheses emerge about what will work going forward, accompanied by action commitments. This process allows teams to reveal their underlying thinking and concerns, and increase their effectiveness in sharing responsibility for producing a collective success.

The AAR Is Not a Meeting, But a Practice

Those who would like to use the AAR in corporate settings need to recognize that AARs and traditional methods for reflection serve different purposes. For example, if a team needs to piece together in detail what happened during the course of a project, produce general recommendations to improve the process, or make technical corrections to a product, a post-mortem or retrospective can be an appropriate vehicle. However, a post-mortem is unlikely to be effective if a group needs to both make an improvement *and* self-correct in the future, or to effect a cultural transformation through local initiative (see “Post-Mortem vs. AAR Practice” on p. 3).

Unlike post-mortems, the AAR is a continuing practice that is focused *forward*, generating lessons to be applied in the immediate future by the same people who developed them. As the Army found, it is only through an ongoing practice—a connected series of forward-looking AAR meetings—that a team grasps the causality at play in their field of action, begins to self-correct, and builds confidence in their ability to do so.

Developing an Emergent Learning Practice

Leaders wanting to develop an emergent learning practice such as the AAR in their organization should consider four patterns that characterize emergent learning and are consistently found in successful AAR applications: localness, forward-focus, punctuation, and iteration.

Localness. “Localness” here refers to *task proximity*—the group that’s directly responsible for the task and the results. If responsibility for results lies with a person outside of the group, any new practice is likely to fade quickly under the pressure of everyday time constraints. In order to integrate an AAR into the rhythms and norms of their group, leaders must introduce the practice with a tight focus on a challenge—one that meets three criteria: It is compelling

to participants; it is embedded in the group’s scope of work; and it is solidly connected to reaching core business goals.

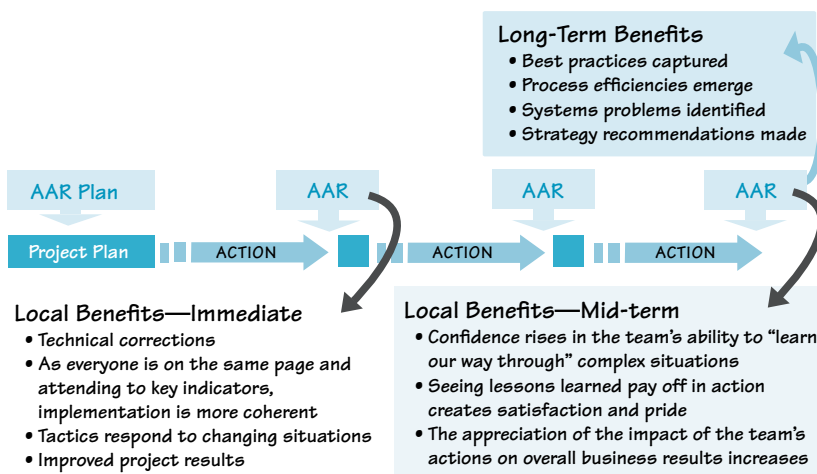
Team members are encouraged to gather “ground truth” data for the next AAR session as they go. Learning *through* their own actions, they see the impact of their decisions and behavior. As they explore trends in their data in order to develop testable hypotheses about effective action in their domain, team members improve their ability to see and understand the interplay of factors that shape their performance over time. In this way, localness naturally leads people to develop a systemic perspective.

Forward Focus. “Forward focus” means looking toward the future first and spending as much time *planning* based on your lessons learned as you spend *reflecting* and *identifying* those lessons. This process involves scanning forward to identify your next challenge; recalling a past similar event; developing your insights; and looking forward again to plan an application of the lessons learned.

In each AAR session, participants identify up front a clear opportunity in the near future for them to implement, test, and refine insights that emerge from the session—an “opportunity field” for learning in action. For instance, a team might be about to begin a series of rollouts of a new product or is looking at its effectiveness in a frequently repeating business process such as developing contracts or conducting quarterly meetings.

Punctuation. Much of our daily work experience seems like a blur—metaphorically, one run-on sentence after another. Emergent learning practitioners develop the ability to “punctuate” the blur in their mind’s eye in order to find natural start and stop points and to derive units of action that repeat. They glean possible “opportunity fields”—arenas within which they might pursue iterative improvement. For example, the Army took the blur of battle and broke out certain repeating units of action; soldiers first learn to recognize when a “movement to contact” begins, and then to call up their knowledge of

THREE BENEFITS FROM AN AAR LEARNING PRACTICE



The AAR is a continuing practice that is focused forward, generating lessons to be learned and applied immediately, in the mid-term, and over the long run.

what to do in that context. Over a series of movements to contact in widely varying circumstances, this punctuation enables them to improve their effectiveness.

Once we learn to see and use them, such opportunities abound. For instance, Danckert saw the chance to iterate in his challenge to open 16 warehouses: “We’re not opening 16 warehouses. We’re opening one warehouse 16 times.” The first one he opened, in Texas, took six weeks. By using what it learned in an AAR after that event, the company was able to reduce the time it took to open its next warehouse, in North Carolina, to only two weeks.

Iteration. When is a “lesson learned” learned? The Army thinks learning has not occurred until an insight shapes actual behavior and is validated by results. Gregory Bateson, author of *Steps to an Ecology of Mind*, posited that learning requires the repetition of a recognizable situation or process, and that information resides in comparing, not in analyzing individual elements or events in isolation. Both perspectives support the idea that a lesson involves more than one learning opportunity—*iteration*.

Iteration is the process of feeding information or knowledge from one instance forward in time into the next similar instance. Knowledge about a past sale, warehouse move, or project kick-off can inform the conduct of an upcoming one—but *only* if that data or insight is captured and fed forward. The AAR enables that capturing and feeding forward process to take place. For instance, much of the NTC’s potency in accelerating skill development stems from allowing people to engage in a high number of action iterations in a short time, coupled with dense behavioral-data feeds such as video.

Iteration has another positive effect when an emergent learning practice becomes “part of how we do things here”: As people grow to expect to reflect with their peers about their collective actions in terms of trends and goals, they tend to raise their individual level of performance and their ownership for seeking improvement.

Two Pitfalls to Avoid

Companies seeking to adopt an AAR practice must avoid two possible pitfalls. First, the current interest in knowledge management leads initiators of learning practices to make an easy mistake—placing an early focus on producing outputs for use in a knowledge base for the benefit of people outside of the team. The first and best customers of a learning practice *must* be those directly involved. If a team is asked to conduct an AAR solely for the benefit of capturing knowledge for someone else, they are unlikely to sustain the practice.

Second, if sponsors try to assess the AAR’s value with a single-meeting trial run, they will be disappointed. Why? Because much of the power of the AAR comes from iteration. Also, the AAR asks participants to talk frankly about their own and their leader’s behavior, so several cycles of learning and action are often needed to generate confidence in the process and trust in one another’s team spirit. As that confidence and trust develop, participants begin to bring more and more substantial issues to the table and act on them. Then, the kinds of visible improvements that are gratifying to themselves and the larger organization become possible, and a virtuous cycle sets in. In turn, the excitement participants feel—of collectively producing outputs that have a visible impact—gives an AAR practice a life of its own within a group. Therefore, before assessing the impact of a new AAR

practice, sponsors should think in terms of at least four to five linked sessions as the baseline commitment (see “Three Benefits from an AAR Learning Practice”).

Bridging Thinking and Action in a Complex World

In a complex and dynamic world, every action plan, every strategic plan, every leader’s initiative is in fact a working hypothesis—our current best thinking about what will lead to success going forward. When a group develops an emergent learning practice, it is building a living, dynamic bridge between the world of thinking and the world of action. ■

Charles S. Parry conducts research on the learning and action strategies of high-performing teams and individuals. He uses that knowledge to shape consulting services and to design programs and facilities dedicated to accelerated skill development. **Marilyn J. Darling** founded Signet Consulting Group (www.signetconsulting.com) in 1989 to develop innovative applications of learning theory to improve team performance and knowledge creation capabilities. She is a charter member of the Society for Organizational Learning and a frequent conference speaker on topics related to team and community learning strategies.

For Further Reading

Darling, Marilyn and Charles Parry. “Emergent Learning: Taking ‘Learning from Experience’ to a New Level.” *The Systems Thinker*®, Vol. 10, No. 4. (May 1999)

Darling, Marilyn and Charles Parry. *From Post Mortem to Living Practice: An In Depth Study of the Evolution of the After Action Review* (Signet Consulting, 2000)

NEXT STEPS

- 1. The best use of a learning practice is often within existing work.** List as many repeating work events, processes, or situations you can think of—use your calendar to help you scan. Which of these contain a clear need for improvement or increased capability, are integral to the business you are in, and have an existing action opportunity in the near future?
- 2. Pick one event to focus on.** Together with at least one member of your team, preview the situation. Then look back at one or more recent similar situations. Discuss and then write your responses to:
 - a. What was supposed to happen that time?
 - b. What actually did happen and why?
 - c. What are we going to do (the same or differently) this next time?
- 3. Commit a date to repeat a–c above,** and take some notes “live” as the situation you have chosen to focus on plays out.



WORKING IN HIGH-LEVERAGE ZONES WITH THE DOUBLE-LOOP LEARNING MATRIX

BY BRIAN HINKEN

The Double-Loop Learning Matrix (adapted from the work of John J. Shibley) is a tool that teams can use for uncovering and articulating high-leverage change initiatives. This matrix is an integration of three vital learning tools: (1) the phases of the classic *learning cycle*—observe, assess, develop, implement; (2) Chris Argyris’s *double-loop learning framework*; and (3) the *levels of understanding of systems thinking* as articulated by Daniel H. Kim—events, patterns, structure, mental models, and vision.

At Gerber Memorial Health Services (GMHS), we used the Double-Loop Learning Matrix to transform our customer service culture from

“What customer service problem?” to “Our customer service problem is deep, wide, hidden, and misunderstood.” This shift enabled us to look for fundamental solutions, rather than justify our current performance or attempt more quick fixes.

Single- and Double-Loop Learning

Single-Loop Learning Cycle. The classic learning cycle begins by identifying the intended outcome of the change initiative and then observing the actual outcome (step 1 in “Two Learning Cycles”). When we notice a gap between the two, we become motivated to consider ways to close

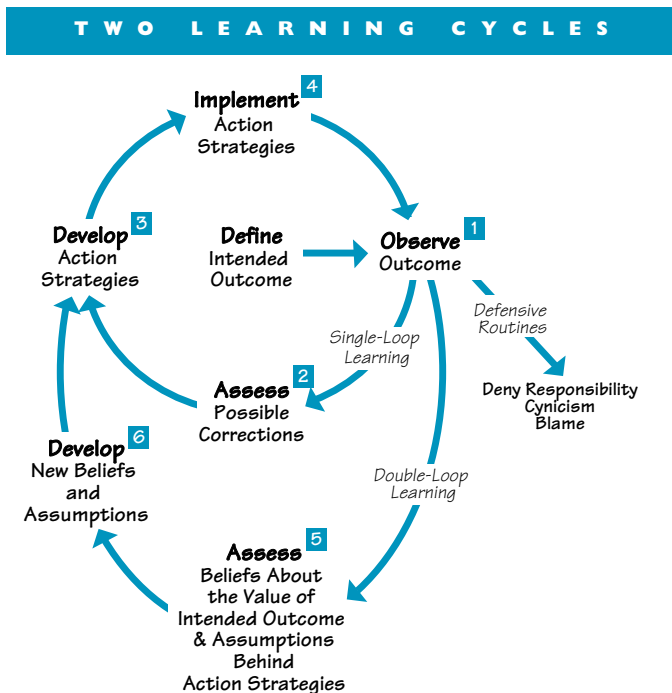
that gap. We assess possible corrections (step 2) and develop (step 3) and implement (step 4) action strategies. After we implement these strategies, we again observe the results (step 1) to see if the strategy we implemented came closer to achieving our desired outcome. However, with most difficult problems, this approach will provide us with only temporary success.

Double-Loop Learning Cycle. After following the single-loop cycle through several rotations with only limited success, we may come to find

that we need to dig deeper into the problem. To be effective, we need to shift to *double-loop learning*. Instead of assessing additional corrections (step 2), we must assess our *beliefs* about why we value the intended outcome and why we assumed the previous strategy would work (step 5). Uncovering the answers to these questions will lead us to develop new beliefs and assumptions (step 6) about what we want to achieve and the best way to achieve it. From there, we can develop new, more effective action strategies (step 3). This is difficult work. When participants perceive issues as threatening or embarrassing, defensive routines may kick in, resulting in denial of responsibility, cynicism, or blame, all of which hinder learning.

Learning Matrix

When we superimpose the double-loop learning cycle on the systems thinking framework, we create “leverage zones” (see “Double-Loop Learning Matrix”). Actions in Zones 1–4 are generally low-leverage approaches to a problem; Zones 5 and 6 are the “high-leverage zones.” By linking the uncovering and testing of beliefs and assumptions in double-loop learning and systems thinking/mental model work in the matrix, we can draw attention to the fact that systems work at this level is about making our causal assumptions explicit and visible—and thus testable. Also, joining the two concepts in this way points to the difficult work of the sixth zone, that of actually creating new belief systems. By adding the systems thinking framework, we facilitate double-loop learning by explicitly moving from “event and pattern thinking” to the “high-leverage



When our actual outcomes do not match our expected outcomes, we typically have one of three responses. We *react*—attempt incremental improvements (single-loop learning). We *reframe*—reflect on the assumptions beneath the outcome we want and the strategy we selected (double-loop learning). Or, we *refuse*—defend the poor performance through denial, cynicism, or blame (defensive routines).

zones” of structures, mental models, and vision.

Events and Patterns. Our typical problem-solving orientation usually keeps us at the level of events (“What happened?”) and patterns (“What’s been happening?”)—a single-loop learning process. We often go through all four steps of the learning cycle at the events/patterns level.

Structures. When we venture down into the structure level, we begin asking more difficult questions—questions of *ourselves*—such as “What are we doing that causes this pattern to continue to happen?”

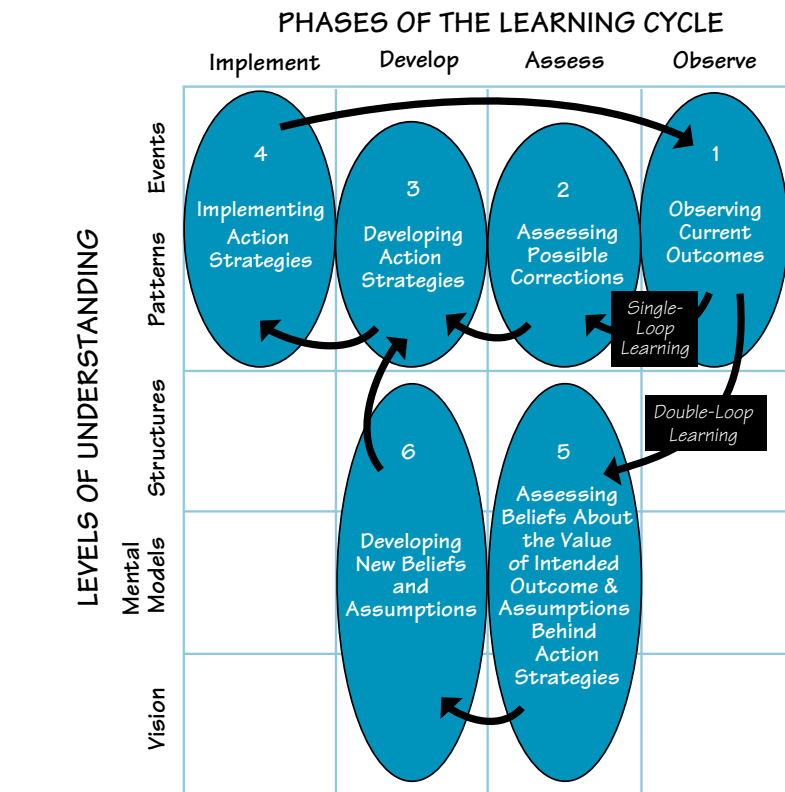
Mental Models. At the level of mental models, we ask ourselves, “What makes us think that the strategies we selected will actually result in the outcomes we desire?” and “What beliefs do we hold that cause us to value this intended outcome?”

Vision. At the level of vision, we ask ourselves, “How does our ‘picture of the future’ affect our achievement of the intended outcome?” Here, we are clarifying what we want to create together.

Addressing Customer Service Problems

GMHS attempted various single-loop “solutions,” such as communicating with waiting patients every 30 minutes, to attempt to address a recurring customer service problem. These actions had some short-term positive results before the same indications of poor customer service returned with a vengeance. The Customer Orientation Strategic Team finally realized that, by focusing on reviewing case studies (events level) and data trends over several years (patterns level), we were working exclusively in Zones 1–4. Although this analysis was necessary and helpful, the group recognized that it needed to “go to Zone 5” to get more leverage to address these ongoing problems.

Zone 5. We started by using the “Drifting Goals” and “Shifting the Burden” archetypes (structure level) to answer the question “What are we doing that causes this pattern of poor performance to continue to happen?” The group recognized that whenever



For developing quick fixes for simple problems, it is appropriate to work in the low-leverage “action zones” (Zones 1–4). Moving down to the high-leverage “reflection zones” (Zones 5 and 6) increases our ability to develop fundamental solutions for difficult problems.

we noticed a service gap (the difference between our expected and actual level of service quality), we tended to either lower our service standards (B1 in “Failed Fixes for the Service Gap” on p. 8) or apply quick fixes to the symptoms (B2). In addition, the *more* quick fixes we attempted, the *less* likely we were to apply fundamental solutions (R4)—a vicious cycle.

Next, we explored the question “Why do we keep thinking that our strategies will actually result in improved customer service?” (mental models level). We discovered three factors that contributed to the failure of previous attempts: (1) low level of ownership for the problem, (2) low level of priority given to service quality, and (3) low level of empowerment of associates. We used causal loop diagrams to show how we could increase Priority, Ownership, and Empowerment, which would make GMHS less likely to *justify* poor performance and

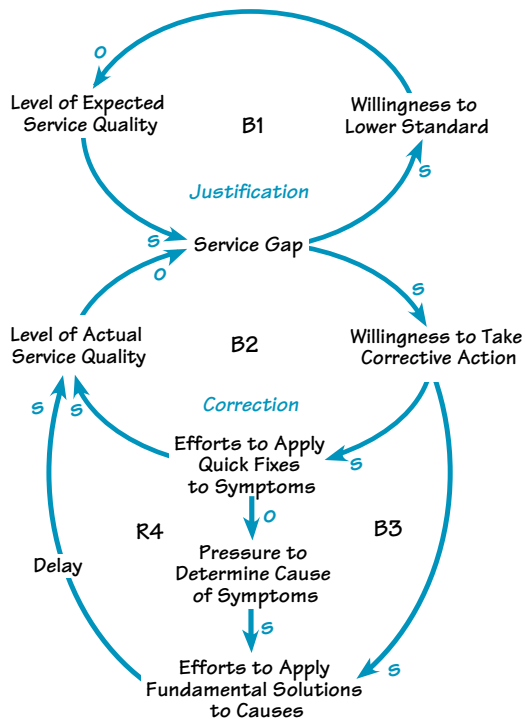
more likely to *correct* poor performance with fundamental solutions (see “Framework for Service Quality” at www.pegasus.com.com/serviceframework.html).

Then, we posed the question, “What have we been trying to create here?” (vision level). At first, we couldn’t clearly articulate what we wanted customer service to be like at GMHS. In other words, we didn’t have a concrete vision; we had a defensive, cynical mindset.

Zone 6. We recognized that, in order to implement fundamental solutions, we needed new structures, new mental models, and a new vision. We used the “Framework for Service Quality” as our new structure. Our new mental model became “If we don’t increase priority, ownership, and empowerment, we will most likely lower our standards or look for quick fixes.” Our new vision is

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FAILED FIXES FOR THE SERVICE GAP



When faced with a gap in service quality, we can choose the path of “Justification”—lowering our service standards (B1) or “Correction”—increasing our efforts to apply short-term and long-term solutions (B2 and B3, respectively). The insidious part is that the more you apply quick fixes to symptoms, the less pressure there is to apply fundamental solutions to causes (R4).

illustrated in “Our Old Mindset and Our New Vision” on p. 8.

Zones 3 and 4. We then began developing and implementing new action strategies focused on addressing the factors related to ownership, priority, and empowerment. For instance, we raised the “priority” of service quality by developing clear standards, training the entire organization, and incorporating the standards into everyone’s job description. We increased “ownership” for service quality by making customer survey results public to associates and developing a tool called a “Learning Plan” that helps managers hold associates accountable for departmental results.

Zone 1. Finally, we asked ourselves if using the “high-leverage zones” approach made a difference in solving our cus-

tom service problem. We concluded that it did. For example, in our Med/Surg department, in 1998, only 90 percent of patients surveyed said they would recommend GMHS to friends and family. In 2001 (on a slightly different scale), 100 percent of patients surveyed said the likelihood of their recommending GMHS to others was “good” or “very good.” Anecdotal evidence of improvement also abounds throughout our organization.

Performance Improvement Traction

The use of the Double-Loop Learning Matrix provided GMHS with a framework to help us look at how our thoughts and actions were preventing us from applying fundamental solutions to our ongoing customer service problem. Learning in Zones 5 and 6 is more about *who you are* as an organization and less about *what you do*. We might think of these as “reflection zones,” as compared to Zones 1–4, which we might think of as “action zones.” Working in the reflection zones is difficult, messy, and well worth the effort.

As organizations look for ways to improve their performance, many will continue to run on the single-loop learning treadmill. When groups become frustrated with this approach, they will desire more fundamental solutions. Deliberately cultivating double-loop learning using tools such as the Double-Loop Learning Matrix may provide the necessary framework to help them stop spinning their wheels and start getting some performance improvement traction. ■

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OUR OLD MINDSET AND OUR NEW VISION

Factor	The Old Mindset	The New Vision
Priority	“Customer service is really not that valuable.”	“We value customer service above almost everything.”
Part of My Job	“It’s not relevant to my work.”	“It’s a critical part of my job.”
Competitive Advantage	“It really doesn’t make a difference.”	“It will help us be better than our competitors.”
Clear Standards	“I’m just doing what everyone else is doing.”	“There’s a difference between excellent and average service.”
Ownership for Service Problems	“Our customer service is really not that bad.”	“We’ve got to improve our poor customer service.”
Public Results	“Nobody ever talks about it.”	“Did you see our latest customer service numbers?”
Accountability	“We can excuse it this time.”	“What can we change so this never happens again?”
Performance Feedback	“No one ever tells me how I can improve.”	“Thanks for pointing it out to me. I didn’t realize that’s how I came across.”
Personal Responsibility	“It’s not my problem.”	“Better customer service starts with me.”
Empowerment	“I can’t do anything about it—I’m not authorized.”	“We can do that.”



DECLARING WAR ON ESCALATION

BY ANDREW JONES AND ELIZABETH SAWIN

Which came first, the violence or the retaliation? That is today's somber version of the old "chicken or the egg" riddle.

On September 11, it sure felt like the violence came first. But the men who attacked the U.S. almost certainly saw their actions as retaliation for earlier violence. Osama bin Laden once offered a justification of his destructive methods: "The evidence overwhelmingly shows America and Israel killing the weaker men, women, and children in the Muslim world and elsewhere." And why had we killed people in the Muslim world? Partly in response to earlier violence such as the bombings of the USS Cole and the U.S. embassies in Africa.

Now, with U.S. leaders offering rhetoric such as, "I say bomb the hell out of them. If there's collateral damage, so be it" (Senator Zell Miller, *New York Times*, September 13, 2001), the United States appears ready to answer retaliation with retaliation.

So, blame them? Blame us? No on both counts. While those who attacked us must be held accountable, laying blame for the repeated cycles of violence will not prevent similar tragedies in the future.

Blame makes sense in a world of straight lines, where any event has a clear, single cause. But in a world of circles and cycles, where retaliation causes violence, which causes more retaliation, the idea of blame only distracts us from the real problem—all the players on both sides are deeply stuck in the trap called "escalation."

We have seen this trap before and elsewhere. In the Middle East with Israelis and Palestinians. In Ireland with Protestants and Catholics. In the exponential growth of nuclear weapons during the Cold War.

What can we do to break out of the escalation trap? Drawing from the field of system dynamics, which has analyzed escalating systems from arms races to price wars, we offer three practical escape routes.

1. We can pay attention to the long-term trends. If we respond to this attack in isolation, we doom ourselves to being solely reactive. We should see this event as the culmination of a long trend of violence on both sides of the conflict, reaching back to the 1979 Iranian hostage crisis, the Gulf War, various hijackings, and multiple military strikes. Looking beyond a tragedy as large as the catastrophes of September 11 is not easy, but we need to search for patterns and then for the root causes of those patterns.

2. We can ask ourselves how our actions have helped create the current situation. If we see the recent attacks as random events or caused by evil, insanity, or religious fervor, our only solution is to exterminate everyone with violent tendencies toward the U.S., build our defenses, and hope for no more bad luck.

But we have an alternative. We can explore our role in the escalation cycle. This does not mean giving in to terrorists, but it does mean asking uncomfortable questions and not settling for simple answers.

For example, we all live with the presence of injustice and inequity in the world. But is it possible that the way we live contributes to the despair and desperation of others? Do we ask or allow our government to take actions that push people to follow extremists like bin Laden? Even asking if our own children's comfort is bought at such a price feels devastating.

Perhaps a careful look will convince us that we are unconnected to the conditions that bred the attacks

on the U.S. But, caught as we are in the dynamic of escalation, our security now depends on whether we have the courage to examine these tough questions.

3. We can focus on actions that de-escalate long-term conflict. Conflicts carry a huge payload of momentum. Ramping down the tension feels like leaning your shoulder into the front of a slow-moving train—the momentum just brushes you aside. But the same mechanics that drive escalation—misunderstanding, aggression, blame—can be tipped in the opposite direction to de-escalate tensions via understanding, engagement, and respect. We can begin the long, slow movement toward peace by demanding that those responsible for the recent attacks be brought to justice out of respect for the rule of law, not out of a reflexive demand for vengeance.

We must bring to justice the criminals who have killed innocent people in such staggering numbers. But we must do more than that. We must avoid accelerating the cycle of violence and ramp down the tensions that are the root-cause drivers of conflict. This will only be possible if large numbers of us are able to examine our impacts on the lives of people in the Arab world and explore our own impulse to retaliate.

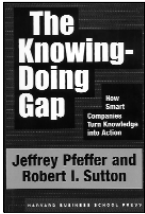
If we can rise to this challenge, we might see a new riddle emerge—which came first, the restraint or the peace? ■

Andrew Jones and **Elizabeth Sawin** are project managers at Sustainability Institute (www.sustainabilityinstitute.org), a think-do tank founded by Donella Meadows that uses systems thinking and modeling to help create a more sustainable world.



BRIDGING KNOWLEDGE AND ACTION

BY KARA PETERS



The Knowing-Doing Gap: How Smart Companies Turn Knowledge into Action
by Jeffrey Pfeffer and Robert I. Sutton

In today's knowledge-based economy, few can claim that they suffer from lack of information. Yet despite the vast array of knowledge resources at their disposal, managers consistently fail to implement practices that they *know* to be beneficial—even essential—to the health of their organizations. In an age in which best practices of leading companies are widely documented and important information is often only a database away, competitive advantage resides in the ability to translate knowledge into action. In *The Knowing-Doing Gap: How Smart Companies Turn Knowledge into Action* (Harvard Business School Press, 2000), Jeffrey Pfeffer and Robert I. Sutton examine the reasons for the destructive chasm between what managers know should happen and what actually does.

Fear and Competition

The authors contend that companies' frequent inability to use what they know stems less from the quality of their workers than from the systems and structures that they put in place—usually in the name of improving performance. They point to business best-sellers like *Only the Paranoid Survive* by Intel CEO Andrew Grove as evidence that many leaders still regard fear, distrust, and meanness as effective management techniques. Conventional wisdom assumes that competition and fear for

one's job stave off complacency. Not only does this approach fail to recognize the multiplicity of factors that motivate people, it promotes a “shoot the messenger” mentality, which discourages the sharing of information. As a result, leaders often develop an inaccurate image of their organization, and may believe that no action is needed.

Fear also hampers action by provoking people's instincts for self-preservation and distracting their attention from the well-being of the organization as a whole. If people are penalized for failing to meet their numbers, they inevitably find ways to blame others instead of working to put their collective knowledge into action. In this way, the authors caution, fear engenders the very behaviors that often delay action indefinitely: “In building a culture of action, one of the most critical elements is what happens when things go wrong. . . . What is the company's response? Does it provide . . . ‘soft landings’? Or does it treat failure and error so harshly that people are encouraged to engage in perpetual analysis, discussion, and meetings but not to do anything because they are afraid of failure?”

Incentive programs that spark internal competition also undermine effective action. By highlighting individual performance at the expense of teamwork, organizations virtually ensure that employees will not share important information. This practice ultimately undermines productivity.

Companies that surmount the knowing-doing gap, like Southwest Airlines, mobilize employee energy around external threats. For example, when competitors to the successful airline emerged, CEO Herb Kelleher

entreated employees to focus their knowledge, resources, and unique corporate culture on defeating “the enemy.”

Measurement Misfires

Many organizations inspire immobilizing fear in the first place because of a misplaced emphasis on measurement. According to the authors, most types of measurement accurately track what happened in the past, but do not help people use what they know to achieve future results.

Moreover, by focusing exclusively on individual performance, most measurement practices neglect to acknowledge that organizations are complex, interdependent systems. Measurement systems that turn knowledge into action are usually global in scope and focus on factors critical to organizational rather than individual success. They also reflect the culture and guiding philosophy of the firm, by assessing such things as adherence to values and cooperation. “At its best,” contend Pfeffer and Sutton, “measurement closes the loop, auditing and assessing what the organization is doing, thereby ensuring that the firm does what it knows.”

The book's many case studies suggest that the organizations that are able to “do what they know” are guided by a set of core values. Rather than spending countless hours in meetings, honing pie charts, and perfecting presentations, these companies set their employees free, armed with enough support, autonomy, understanding, and inspiration to put their knowledge to work. ■

Kara Peters is a Boston-based editor and writer.



CURBING SCHOOL VIOLENCE—OR FUELING IT?

Extensive media attention to incidents of school violence in recent years seems to indicate that schools are becoming more dangerous and life-threatening all the time. These unfortunate events—and the hype they receive in the media—are having a significant impact on our perceptions of safety in schools. A Gallup poll taken in April 2000 revealed that 30 percent of respondents thought another incident like the one in Columbine, CO, was “very likely” to happen again, 36 percent said “somewhat likely,” and only 15 percent said “very unlikely.”

But an article in *salon.com* on March 9, 2001, entitled “Deadly Consequences,” reports that violence by youths has actually *dropped* dramatically in the last few years. Frank Zimring, a law professor at the University of California at Berkeley, said that the juvenile murder rate is at its lowest level in 20 years, and that schools are actually the safest place children can be.

The Power of Perception

So how are these perceptions about school violence playing out in our schools and our society? According to the article, some experts think that our current panic may be adversely affecting our attempts to curb the violence. For example, zero-tolerance policies, which schools use to crack down on potentially violent kids, “may not only be ineffective but may actually backfire.” Jaana Juvonen, a behavioral scientist at the Rand Institute, says that such tactics focus so much on punishment that they fail to address the motives behind the violent behavior. Also, the strictness of such policies may alienate kids and thus actually *increase* their risk for future behavioral problems.

The greatest damage that zero tolerance and other tough-on-crime

YOUR WORKOUT CHALLENGE

Systems Thinking Workout is designed to help you flex your systems thinking muscles. In this column, we introduce scenarios that contain interesting systemic structures. We then encourage you to read the story; identify what you see as the most relevant structures and themes; capture them graphically in causal loop diagrams, behavior over time graphs, or stock and flow diagrams; and, if you choose, send the diagrams to us with comments about why the dynamics you identified are important and where

you think leverage might be for making lasting change. We'll publish selected diagrams and comments in a subsequent issue of the newsletter. Fax your diagrams and analysis to (781) 894-7175, or e-mail them to editorial@pegasus.com.

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policies may effect is that they inadvertently encourage kids to keep quiet when they learn that a friend or classmate is threatening violent action. Teens may be reluctant to tell an adult because they don't want to get their friends in trouble, mostly because they know of the dire consequences that will result.

Addressing School Violence

Juvonen also claims, “There is some preliminary evidence to show that in these schools where they have metal detectors and use security checks—where the physical safety issues are very salient—that that's where kids' anxieties are heightened. It's a constant reminder of how unsafe the school is.” Thus, the most important intervention to curbing school violence may be creating a sense of psychological safety. A surgeon general report early in 2001 echoed this sentiment by asking the public to consider school violence a health issue that needs to be carefully researched and addressed. The report recommended that we study stress factors at home and in the community that are caused by violence, drugs, or other negative behaviors, and figure out how to address those social issues as a root cause of school violence.

The report also stated that “Incarcerating teenagers or trying them in adult court for their offenses only makes it more likely that they will become criminals for life.” California's Proposition 21, a ballot measure that passed in 2000, requires that teenagers as young as 14 who are facing murder charges must be tried as adults. This law is among the harshest of the tough-on-crime policies.

We may not know for some time the outcome of different approaches to preventing school violence, especially as some statistics imply that teenage violence is already on a downturn. But it bears considering that sometimes the very solution we think will address a problem may only make that problem worse. ■

—Kellie Wardman O'Reilly

Source: “Deadly Consequences” by Fiona Morgan, *salon.com*, March 9, 2001.

YOUR THOUGHTS

Does a systemic analysis of these trends suggest alternative ways to address the issue of school violence? Let us know what you think!

In this time of tragedy and great loss, the Pegasus staff offers our thoughts and prayers to all who are suffering so deeply. May compassion and understanding play an important role in bringing peace to the world that we share.



FROM THE FIELD

The Beer Game in the News

The August issue of *Business 2.0* featured an article by Thomas A. Stewart about the Beer Game, which he calls “a nasty but revealing simulation invented at MIT’s Sloan School of Management in the 1960s by Jay Forrester, now a professor emeritus, and later improved on by John Sterman, a colleague at Sloan.” Stewart describes how the game reveals that even a slight change in demand can wreak havoc on a supply chain. He makes the point that dynamics depicted by the Beer Game offer a partial answer to the question of why companies like networking giant Cisco Systems get themselves into trouble by over- or underestimating the market—and ending up with too much or too little inventory. To read the article online, go to <http://www.business2.com/articles/mag/print/0,1643,16564,FF.html>.



PEGASUS NOTES

Special Forum

The terrorist attacks of September 11 have powerfully affected all of our lives. In the days since, Pegasus has received numerous e-mails from people from around the world. Inspired by these messages of compassion, empathy, and hope, we realize how much wisdom exists within the systems thinking community. To establish a space in which fruitful dialogue can take place, we have created a new forum on our web site called “Leverage points for a new world.” The name, derived from the title of our e-newsletter, expresses the belief that wise and compassionate people with the right tools can respond to any challenge and create positive change. Deborah and Alan Slobodnik serve as hosts and moderators. They have opened the discussion with the question: “What are the structures that led to the tragedy of Sept. 11? What, as practitioners of systems thinking, can we do to help?” We welcome you to participate in this important dialogue; to do so, go to www.pegasus.com and click on “Pegasus Forums.”

A Guide to Appreciative Inquiry by Bernard J. Mohr (Pegasus Communications, 2001)



A Guide to Appreciative Inquiry, the latest in Pegasus Communications’ series of two-sided pocket guides, offers a practical introduction to Appreciative Inquiry (AI). AI is a powerful new vehicle for accelerating organizational change through the exploration of unconditional positive questions. The pocket guide includes a diagram and an explanation of the 5D cycle (Definition, Discovery, Dream, Design, Delivery/Destiny), a case study, and insight into the conditions that support the practice of AI in an organization.

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LEARNING QUOTES

“I think we’d live our daily lives very differently in all arenas if we could see that conversations really do matter. If each of us understood how and why that were so—that every conversation we participate in is connected to a larger web of collective meaning and action—then we’d act in ways that were more mindful of the future we were creating together.”

—Juanita Brown

“It is common sense to take a method and try it. If it fails, admit it frankly and try another. But above all, try something.”

—Franklin D. Roosevelt

For information about reading and using causal loop diagrams, go to www.pegasus.com/cld.html

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THE SYSTEMS THINKER® explores both the theory and practice of systems thinking and related organizational development disciplines. Articles by leading thinkers and practitioners articulate the challenges and issues involved in creating organizations on the leading edge of innovation. We encourage dialogue about systemic issues and strive to provide a forum for debating such issues. Unsolicited articles, stories, and letters to the editor are welcome.

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