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Just as there are hidden perils associated with conventional wisdom (see related article), this article shares information about another frequently unrecognized pitfall, along with examples of how it can manifest itself within businesses of every type.

As you'll see, "theory-blindness" can extract a huge economic toll…

Mary Jane Conway-King

Struck Theory-Blind

by: Sheila Julien, Senior Associate

Theory-blindness extracts a huge economic toll in several ways. Sometimes it leads companies to invest in expensive solutions that completely miss the real cause. Sometimes organizations will live with costly problems for years because of a shared but erroneous theory about the cause of the problem.

A large information services company was spending tens of thousands of dollars each year on headsets. John Petrie and I were teaching a series of workshops on Continuous Improvement (CI) and each participant had to choose a sample project with which to practice a process improvement methodology. A Purchasing Manager chose the goal of reducing headset costs, because he already had a great solution in mind. (When workshop participants choose their own improvement projects, they inevitably choose one for which they have a solution in mind. It seems safer; it takes a lot of experience before you trust the process to surface a good solution.) Headsets at this company were available on request and were not charged to the departments' budget, and the Purchasing Manager strongly believed the reason they purchased so many was simple carelessness and that the root cause was that employees had no incentive to be frugal with headsets. Require departments to budget for these and the waste would be eliminated.

First, he quantified the waste. Capturing the dollars spent was easy, and when he calculated the number of headsets per employee per year, it bore out his expectations: way too high. But when he applied the data analysis tools to study the current reality, some unexpected patterns emerged. The run chart showed the rate of requests for headsets was very spiky. Whole departments seemed to want new headsets at once. Were they being careless in unison? His Pareto chart of reasons for requesting a new headset showed the top reason was: 'desk was moved,' suggesting to the Purchasing Manager that the Pareto was not very useful because, naturally, people would not report the *true* reason: "indifference to the cost of headsets." He remained convinced of his original theory.

Our Purchasing Manager had been struck theory-blind. Theory-blindness is a remarkably common condition in which our *theory* about the way the world works blinds us to the way the world *really* works. We easily accept evidence (however meager or flawed) that supports our theory, and we explain away or simply fail to notice or correctly interpret evidence that contradicts it. Theory-blindness can afflict us in all aspects of life: sports, politics, academics, parenting, and is very costly in business. For example…

A retirement community in Florida had much higher housekeeping costs than the other similar residences that the company operated. The prevailing theory was that the more upscale residents of this complex demanded more cleaning time. Management thought this was customer-driven and was concerned that they could not solve it without affecting customer satisfaction levels. Not until they applied the process improvement methodology did they identify the true cause, enabling them to reduce the housekeeping expenses by 30%.

Another company — a computer company with a big and expensive spike in shipments the last week of every quarter — was blinded by the theory that sales reps were more eager to make quota at the end of the quarter

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and customers waited until then to get the best deals. While the company debated sales incentives, the obvious cause was overlooked: to meet quarterly revenue numbers, Order Management was calling customers with deliveries scheduled for early next quarter to ask if they would accept early delivery, a practice that accounted for 95% of the quarter end spike.

Like the Purchasing Manager, the managers of these companies were very talented people knowledgeable about their businesses and motivated to find and implement the right solutions. Theory-blindness is not an affliction of under-achievers. In fact, the research shows that the more mentally and quantitatively agile you are, the *fastest* you are to interpret data in ways that support a pre-existing theory. The psychologist, Daniel Kahneman, (the only non-economist to win the Nobel Prize in Economics) describes the phenomenon in his book, *Thinking, Fast and Slow*. The human brain, he illustrates by describing decades of research, is wired to apply a number of biases, theory-blindness being one of them. Understanding the biases gives us the tools to overcome them.

The most powerful mental bias underlying a great deal of the flawed decision making is what he calls: WYSIATI (or *"what-you-see-is-all-there-is"*). We are inordinately influenced by what we see, and greatly undervalue information we do not have. As a result, paradoxically, the *less* we know, the *more* sure we are of our conclusions. It's just how we are wired. In one example Kahneman presents, three groups were given the same basic facts about a lawsuit, then one group was given only the plaintiff's arguments, another group received only the defendant's arguments, and the third group received both. Not surprisingly, the groups receiving biased information sided with the arguments they were presented, while the third group was divided. What was surprising, however, was the difference in confidence in their conclusion. The first two groups knew they had only heard one side, but were significantly *more* sure of their conclusion than the group that had given both sides a full hearing — though rationally we know the groups with biased information are more likely to be wrong. Confidence, it turns out, depends much more on coherence (whether all the information at hand points to the same conclusion) than completeness. Thus, while the less we know the less likely we are to be right, the *more likely we are to think we are right!*

Once we have connected enough dots to come up with an explanation, we become confident in the explanation. The Purchasing Manager knew two facts: the company was spending too much on headsets, and that there was no particular incentive to conserve. Those two dots were consistent and easy to connect. The computer company executives knew that sales reps had quarterly goals and saw shipments spike at quarter end. With those two facts in mind, one explanation was obvious. We are, Kahneman says, wired to jump to conclusions.

> *"As a rule, we disbelieve all the facts and theories for which we have no use."*
>
> —Gustave Flaubert

And once we jump to a conclusion, acquiring more information does not necessarily cure us. Because of theory-blindness: we systematically are more trusting of data and opinions that support what we think and overlook or distrust that which is contradictory. While reading Kahneman's catalog of the biases and fallacies we are vulnerable to, it is easy to despair ever getting anything right.

But we have a defense!

A process improvement methodology, if faithfully followed, helps us understand problems and opportunities in a new and more fully informed light. The Conway 8-step Process Improvement Methodology starts with people's intuition and insight, but unlike the traditional 2-step method (i.e., someone in a position of authority comes up with an idea, and then they implement it), it does not stop there. Instead it incorporates a systematic search for *new* knowledge and understanding in order to arrive at a solution that addresses the root cause.

First, we identify and quantify what to work on. After gathering a lot of ideas and opinions about opportunities, we prioritize and then quantify. Quantification helps us in two ways: it helps us set aside our

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pet ideas for improvement (theories) that simply are not supported by the facts, and it helps us proceed with appropriate urgency on the highest impact opportunities. Our intuition plays a crucial role in surfacing possibilities to explore, but then we gather facts and data to help us test that intuition and arrive at better decisions about what to work on.

Second, if we follow the process improvement method, we put together a team of people who can study the opportunity from a variety of perspectives. We include input from both customers and suppliers of the process which helps us overcome theory-blindness, because people who can see the process from different perspectives can help us spot the flaws in our theory.

Third, we gather facts and data about the current situation. This is the step that people new to the process find the most annoying. Consider that they selected their improvement project because they already had a solution in mind, so it inevitably seems like it would be more efficient to skip the analysis step and just implement the obvious solution. But the heart of a successful Continuous Improvement system is the search for *new* knowledge. So they go through the process: generate questions about the current reality and gather the facts. We may be inclined to explain away evidence that contradicts our theory, as our Purchasing Manager explained away the Pareto chart. But this requires some mental gymnastics, and the more we have to do of it, the less confident we are. Enough relevant facts and data can be effective treatments for theory-blindness.

Fourth, we analyze root causes: thinking expansively and systematically about possible causes and then critically examining each possibility. This step is difficult for someone already convinced of the cause and the solution. But a team of people is less likely to think in lockstep, and if the team follows the process, they will introduce other possibilities and challenge their initial presumption.

> *"Men occasionally stumble over the truth, but most of them pick themselves up and hurry off as if nothing ever happened."*
>
> —Sir Winston Churchill

It is rare that someone who has followed the CI process is still theory-blind by step five and six when they implement and then study the results of their improvement. But if they got this far with faulty theories, step six is the moment of truth. Because they started the process with a good baseline measurement, when they study the results in step six, they will either confirm a successful improvement or not. If the results do not bear out the expectations, the team goes back to discover where they made the error and to find a better solution.

Following the process ultimately solved the headset problem. When the Purchasing Manager examined the Pareto chart, he was skeptical about the results because they did not support his theory. But he decided to study the move process to see how, if at all, moving one's desk would require a new headset. Here he had his Eureka moment! He learned that when departments were relocated, employees were told to move their own personal items and facilities would move the technology. Employees considered headsets to be technology; Facilities considered them to be a personal item. No one was moving the headsets, and when they did not arrive along with the computer and phone, the employee requested a new one. With this new knowledge, the solution was obvious — and more effective and easily implemented than a budgeting and cross-charging process for headsets.

A number of factors may explain why companies with effective CI cultures are much more financially successful. But prominent among them may well be the power of a systematic process improvement methodology to overcome the theory-blindness and the WYSIATI bias that are a part of the way the human brain is wired. Because with more complete information, more critically and effectively analyzed, we simply arrive at consistently better decisions.