THE ART OF ASKING POWERFUL QUESTIONS IN THE WORLD OF SYSTEMS

A 5-STEPS GUIDE

1. Bounded Rationality

Theodore Roosevelt once said, "Do what you can with what you have where you are." This could be a fair summary of what bounded rationality is. Bounded rationality means that people usually make sensible decisions based on the information that they have. The quality of their decisions is only as good as the information they have. It is impossible to have perfect information, especially about parts of a system that are more distant. Farmers don't know for sure how much rain to expect in a given year, if there be drought, or how the economy will shift. Farmers can only be sure of their sowing and reaping methods and the caretaking of their plants or animals. A famous quote by Robert H. Schuller illustrates this point well. He said, "Anyone can count the seeds in an apple, but only God can count the number of apples in a seed." An apple orchardist can study data from the yields of his trees over time and carefully analyze all aspects of his orchard system, but try as he might, he will never be able to successfully predict the exact number of apples that will grow from each of the seeds (trees) he plants.

Nobel Prize winning economist Herbert Simon explained in his theory of bounded rationality that we are not all-knowing beings. He recognized that there are limits on our decision-making abilities, including our intellectual and reasoning abilities, the quality of the information we have, and the amount of time we have before the decision must be made. When you add to that the fact that humans aren't perfect, you get the need for people to make decisions by what Simon refers to as satisficing: doing the best that we can with what we have.

It is impossible for us to completely predict what others will do in a given situation. This further limits our ability to see every possibility that lies ahead of us and hinders our decision making abilities. We simply have to try to meet our needs as well as we possibly can with our decision, and then move ahead to the next one.

We are human and we make mistakes even in processing and interpreting the information that we have access to. We have to do our best to be open minded and objective as we analyze information and focus less on current events and more on the historical and long term behavior of a system.

If we want to change and improve the quality of the decisions that are being made, simply replacing the current decision-making process with another on the same level is not enough. Since our decisions are only as good as the information we have, we need to expand the amount of information we have access to and actually review. This means gathering information from an entire pool of resources about the system our problem resides in instead of just gathering knowledge of certain elements.

2. Event Level Vs. Behavior Level Analysis

When we talk of a system's behavior, we look at how it performs over time. Has it grown, stayed the same, or declined? Is it well-organized or random? How has it evolved and changed?

If you love reading about history, you know that having retrospective data on a given historical event made the outcome quite predictable. Surely, not so much for the people who lived in that historical period, but for us, readers and historical analysts of today. Let's take the Roman Empire as an example. While the central authority was strong and united, the empire was invincible, operating with an organizational system that could keep its tens of millions of subjects under control. The empire was facing external threats, attacks by the Goths in the north and of the Parthians in the south, but they overcame adversities and thrived. It wasn't until the death of Emperor Commodus in 192 AD and the death of the Antoninus Dynasty that the empire started to decline, slowly but surely.[i] Since Commodus had no heirs hadn't appointed anyone to take his place, chaos and

individual greed started to overtake the goal of the system as a whole, namely to keep together and enrich the Roman Empire. One hundred and eighty-four years after the death of Commodus, in 476 AD, the Roman Empire collapsed.

The collapse of a great empire is not unique. Before the Romans, there was the Macedonian Empire of Alexander the Great, which suffered the same fate. Centuries later the Napoleon's First French Empire ended up sharing the experience of the Romans. The common feature in all these stories is that while subsystems were working toward the benefit of the system as a whole and the system provided the subsystems their needs, these great empires were undefeatable. When this balance changed, the empire-systems collapsed. An interesting exception that empowers the rule of "all empires must collapse" is the British recovery from the loss of all their colonies. While the British Empire collapsed, their home base remained independent and not taken over by an external invader. The British colonial empire doesn't exist anymore, yet Britain didn't wither and die. It's still a strong and powerful nation. It thrived in a new and different way while also having to manage the loss its colonies – and all those colonies provided.

Looking at the timeline of the Roman Empire, or the empire of Alexander the Great, we can clearly detect the rise, the peak, and the downfall of each of them. But what would happen if we only looked at Commodus' death, or a single successful conquest of Alexander? Could we predict or have a clear picture on the empire's behavior just by losing our minds on this –once- breaking news? Not really, right?

When we study specific individual events superficially as if they happened in isolation we won't get answers to questions like "what now?" or "what will happen to the country?" or "how will this event affect the economy?" Just like in history, in our modern age we don't get accurate information just by putting one event under the microscope. To get the answers we seek, we need to dig deeper and make a behavior over time analysis.

Systems thinkers automatically look for data and history when they are presented with a problem. They want to know if the system has ever been in the same position before. They begin to study the data and look for patterns over time. Studying long-term behavior is a window into the underlying structure within the system and it can reveal a wealth of information about what is happening in it, and more importantly, why it's

happening. It is only then that we can get to the heart of a problem and uncover a possible improvement.

A system's structure is formed by its stocks, flows, and feedback loops. The structure is made visible through causal loop diagrams, complete with boxes, arrows, and thought bubbles. The structure of such diagrams will show what behavior tendencies a system has. When we encounter a balancing feedback loop, we can conclude that the system is working toward maintaining or establishing a dynamic equilibrium while a reinforcing feedback loop indicates exponential growth or decline. The two main indicators that systems thinkers use are time graphs and diagrams of the stock, flows, and feedback.

Would you like to learn more about balancing and reinforcing feedback loops? Check out my first book, The Systems Thinker.

Football games are a good example of event level analysis. Perhaps you have heard of Monday Morning Quarterbacks. They are the people who are eager to offer their opinions and commentary, usually quite critically, on the performance of a player or team in a football game that occurred over the previous weekend. They do not hesitate to judge and criticize the performance of others once the game has happened. They can usually be found complaining to their friends or calling into radio shows offering their opinions and criticism with little basis in long established facts or any attempt to dig deeper and study the history behind the performance. While this analysis may be entertaining, it is more superficial and does little to help us predict what will happen in future games.

However, I must add in MMQ's defense that a lot of this information is top secret. The NE Patriots aren't going to be releasing videos of their practice drills to the general public because they don't want other teams prepping to their strategies. The other team only gets previous game play videos to strategize with. Meanwhile each team takes extensive video of their practice drills and they breakdown each play and analyze it to death so each member of the team knows their part backward and forward and it hopefully goes off seamlessly and without an injury.

On the other hand, coaches, medical staff, sideline reporters, and seasoned analysts of the game would make every effort to look for long-term behavior and patterns as an explanation for the player or team's performance. They would look at injury reports, study game tape - both current and from the past, conduct interviews, and study data in the form of statistics to assess whether the team had been in the same or a similar position before and try to get a more complete picture and explanation of the reasons behind the performance.

This type of behavior level analysis by being connected to both the present and the past as well as based on hard data, gives us a better picture of performance over time, and makes us more likely to anticipate to a degree what might lie ahead for the team.

3. Look for leverage points

How do we access more and better information? Ultimately, how can we make the system produce more of the things we want and less of the things we don't? We need to start by finding the system's leverage points. Leverage points are the pieces in a system where making a small change could result in a big difference in behavior. In essence, these are the places in our system where we get the "biggest bang for our buck." We don't have to change much in order to have a big impact. The problem is that people often don't push the change in the right direction. We need to consider a cost-benefit analysis if we move a leverage point in a certain direction. If we don't, we may end up making the problem we are trying to solve worse than it was to begin with.[ii]

A good leverage point is like hitting the spot on a mountain that would cause the largest avalanche, just as the character Mulan did with the Chinese Army's last cannon in an attempt to use nature to defeat the Huns. (If you have children around the age of twenty-five, thirty, you must know what I'm talking about.)

4. The difference between conventional and systems thinking

Conventional thinking has been our more traditional way of addressing problems, and it's different from the systems thinking approach. Conventional thinking is looking at things through the lens of cause and effect. It tends to view things as a step-by-step, sequential process with a definite beginning and ending. Conventional thinkers believe that it is easy to find the cause of a problem because it's obvious. They tend to place the blame on people and situations outside of their organization or system when things go wrong. Since they believe others and outside forces are the things that need to change, they rarely reflect inwardly on what role they may have played in causing or contributing to the problem.

Conventional thinkers are focused on the parts of a system rather than the entire system. They believe that improving the parts is the way to improve the whole system. A plan leading to short term success will automatically translate to long-term success in conventional thinkers' understanding. They often work on many strategies independently at the same time, which addresses the symptoms instead of the root of the problem.

Systems thinking is a paradigm shift. It focuses on asking better questions before jumping to conclusions. You want to get a more complete and accurate picture of the problem before trying to come up with a solution. Don't believe that the cause of a problem is necessarily obvious or quick and easy to find.

People, often unintentionally, create or contribute to their own problems and the power and responsibility to change these problems lies within them rather in outside factors.

Systems thinkers know that finding quick fixes to a problem often will either be ineffective or make the problem worse by causing unintended negative consequences. They look to improve the entire system by focusing on and strengthening the relationships between the parts. They believe that focusing on too many strategies at once will scatter focus and won't lead to a lasting change. They would rather focus all of their attention on implementing a few key changes, leverage points, that they believe will impact the whole system. They keep working on the chosen change for a period of time to see if they are effective.

At the end of the day, systems thinking strategies boil down to asking better questions.

5. How to ask better questions?

Here are some questions you might ask yourself as you begin to explore the art and architecture of powerful questions. These questions were done at the Public Conversations Project.

- "Is this question relevant to the real life and real work of the people who will be exploring it?

- Is this a genuine question — a question to which I/we really don't know the answer?

- What "work" do I want this question to do? That is, what kind of conversation, meanings, and feelings do I imagine this question will evoke in those who will be exploring it?

- Is this question likely to invite fresh thinking/feeling? Is it familiar enough to be recognizable and relevant—and different enough to call forward a new response?

- What assumptions or beliefs are embedded in the way this question is constructed?

- Is this question likely to generate hope, imagination, engagement, creative action, and new possibilities, or is it likely to increase a focus on past problems and obstacles?

- Does this question leave room for new and different questions to be raised as the initial question is explored?"[iii]

Finally here's a set of sample questions you can ask if you have an organization.

- "To what degree does the leadership in your organization foster an environment in which discovering the "big questions" is as much encouraged as coming up with workable solutions?

- Does your organization have rewards or incentives for members to work across functional boundaries to find those challenging questions that create common focus and forward movement for knowledge creation?

- Do your leadership development programs focus as much on the art and architecture of framing powerful questions as they do on techniques for problem-solving?

- Do your organization's strategic planning processes include structured ways to discover the "big questions" that, if answered, would have real strategic leverage?

- Are there collaborative technology tools that enable people on the front lines to ask each other questions related to their daily work (for example, customer service, equipment maintenance) and receive help with these questions from colleagues in other locations?

- Do senior leaders in your organization see the process of strategy evolution as one that engages multiple voices and perspectives in networks of conversation that contribute both to discovering the "big questions" as well as to finding innovative solutions within individual arenas of responsibility?"

It is not difficult to learn to create powerful questions keeping the principles of systems thinking in mind. Once you have stepped on this path, it's hard to turn back. As your questions get better and deeper, so does your understanding of the world. Who could say where a powerful question might lead you? Transformative conversations can be the

result of a simple question such as: "What questions are we not asking ourselves about…?"

Good luck on your journey! I'm happy you're on this journey with me. Let's sail deeper!

Warmly,

A. R.

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[i] Geoff W Adams, The Emperor Commodus : gladiator, Hercules or a tyrant?. Boca Raton: BrownWalker Press. ISBN 1612337228. 2013.

[ii] Forrester, Jay. Collected Papers of Jay Forrester. Jay Forrester. Pegasus Communications. 1975.

[iii] Brown, Juanita. Vogt, Eric. Marguiles, Nancy. Isaacs, David. Strategic Questions: Engaging People's Best Thinking. The Systems Thinker. 2019. https://thesystemsthinker.com/strategic-questions-engaging-peoples-best-thinking/