

Nine paradoxes of problem solving

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Herbert Simon received the Nobel Prize in economics in 1978 for his work on the paradoxical nature of decision making. Coining the term “bounded rationality,” he observed that uncertainty is an inextricable part of the process, and that the only way to make decisions and be “rational” is to invent parts of the picture that don’t exist because they lie somewhere in the future or beyond our ability to calculate.[1] This hardly seems rational at all and yet, in practice, our ability to make decisions and solve problems depends upon our willingness to embrace this fundamental paradox, to abandon facts in order to be successfully factual.

We all engage in paradoxical thinking when we solve tough problems, and the extent to which we do this only increases with the seriousness and complexity of the situations we face. This is not psycho-babble, decision avoidance or wild conjecture. Paradoxical thinking is built into the nature of human duality, made possible by all the various aspects of consciousness – mind-body, now-then, me-other, good-bad, right brain-left brain and myriad others. Learning to recognize the most frequent types of problem-solving paradoxes and their influence will save some frustration, and perhaps help you and other members of the management team do a better job of navigating your firm’s opportunities and challenges. The following nine paradoxes are encountered with surprising frequency in corporate decision making.

Paradox #1 – using problems as shields—clinging to problems that protect us from facing even bigger problems

Given enough time, most problems get solved, but there are some that stubbornly stick around, often reappearing in different guises. Surprisingly often persistent problems are used as shields to defend us from having to deal with things we fear. In these cases, we make symptoms, rather than causes, the target of our efforts, finding short-term relief at best,

Paradoxical problem solving primer

The power of paradox. A paradox is that most curious predicament where something is inextricably bound to its apparent opposite – it is both true and false at the same time. It either is or it appears to be contradictory. The power of paradox lies in its compelling nature and intuitive elegance (for example, strength lies in softness or the need to give up a goal to achieve it.) Identify a paradox in the decision making process and you are often describing something essential and fundamental.

The connection to problem solving. Problems are not all of the same logical kind. One very meaningful difference is between those that are relatively straightforward and linear and those that are more complex. A common aspect of complex problems is that they often contain some form of paradox. By addressing the inherent paradox, complex problems are more understandable and solvable.

but getting us no closer to a lasting solution. For example, it's easier to complain endlessly about a company's dysfunctionality than it is to face the possibility of needing to regroup, fire some employees, and reorganize and retrain others.

We grow dependent on some of our problems over time because they defend us from bigger, scarier ones.

Overcoming this paradox takes courage and insight. This is the Pandora's Box we'd rather not open for fear of what we might find. Yet paradoxically, when we leave these aspects of situations and ourselves unexplored, underlying issues become even more frightening, powerful, and harder to confront.

Paradox #2 – secondary gain – problems that help us to get things we want

We allow some problems to persist because they help us to obtain things we value, albeit in indirect ways. In this paradox, the benefit is something we gain as a result of the problem and risk losing if the problem is solved. For example, a CEO who isn't an inspiring speaker gets to skip boring public speaking chores; a leader who can't master technical complexities doesn't have to take endless meetings with argumentative engineers.

It's hard to give up certain problems when we receive so much positive reinforcement for wrestling with them!

Freud called this phenomenon "secondary gains," noting the reinforcing power of unintended yet meaningful consequences of problems.[2] We are more likely to give up secondary gains when the advantages of solving a problem outweigh the benefits derived from its existence. The hard work lies in becoming aware of where secondary gains exist and how you benefit from them. To get started on addressing secondary gain situations, make a list of everyday problems, weaknesses and fears. For each of these, ask what you get out of them, and what you might lose if they didn't exist. Change is up to you.

Paradox #3 – Herbert Simon's dilemma – you have to make things up to be accurate

Almost all decision making involves inventing parts of the future that are inherently unknowable. How can you really know how people will react to a new strategy? What if there is a storm that delays your well-planned travel arrangements, or what happens if a key player on your management team comes down with the flu on the wrong day? Since you can't ever be certain about these kinds of things, you have to make some assumptions about what will occur.

The only way we can hope to be right is to risk being wrong; if we are unwilling to do this, there is little chance of success.

Over-cautious types who insist on having all the hard, cold facts before making a decision risk missing opportunities time and again. Paraphrasing common sports wisdom, "You can't score if you never shoot." The way past this paradox lies in recognizing when estimates, intuition and trust are the missing piece of the puzzle and learning to proceed in spite of fear and anxiety. Postponement taken to the extreme puts company leaders on the sidelines when complex decisions are being sorted out, ultimately forcing their firm to play catch-up.

Paradox #4 – the solution is the problem – when solving the problem is really just a fancy way of avoiding it

Not every challenge is a problem that can or should be solved. Some complex and uncertain situations need to be treated differently. Let's call these dilemmas rather than problems. With



dilemmas, there are competing interests and often high-stakes trade-offs. For example, should I constantly try to maximize return on shareholder investment or promote the personal fulfillment of the most innovative employees? Is it better to reinvest profits to grow a fledgling business or jack up the dividend?

Rushing to solution in highly complex cases often brings short-term relief while making the underlying situation worse and increasingly difficult to deal with.

There are many areas of the globe where conflicts have continued for far too long in spite of the array of solutions that have been attempted – such as, enforced *détentes*, redrawn boundaries, massive relief efforts and economic blockades. Some take the view that such situations are not problems that will be solved, but rather, they represent ongoing, complex sets of dilemmas that grow healthier or more toxic depending on how they are handled. Instead of relying on outsiders to keep the peace or administer justice, the parties in opposition need to explore points of tension together, thereby gaining insights that improve understanding and increase trust and their ability to work together.

An aspect of what makes situations like these so challenging is what Peter Senge has called dynamic complexity, wherein problem solving efforts are separated in time from their effects.[3] In such cases – think of customer relationship development and competitive strategy as two examples – top management does what they believe is the right thing and then must wait and wait for confirmation. Neuroscientists tell us that our brains are hard-wired for short-term success, driving us to impose solutions even when no acceptable options are available. Wise leaders have learned from experience that when facing tough dilemmas, perspective learning and listening are often more helpful than imposing a solution to feel a momentary relief.

Paradox #5 – too much choice – paralyzed by options

When we accept that there is no way to avoid or rectify a problem, we feel helpless, and this helplessness is a prime reason that management teams become “stuck.”[4] It would make sense then to pursue generation of alternatives as a central goal of problem solving. Creativity methods in fact do exactly this, valuing quantity above quality; in brainstorming, more is better, at least initially.

Choice is a good thing, but too much choice can overwhelm and debilitate. We sometimes need fewer options to be able to choose.

The logic breaks down, however, when we are too successful; when an overabundance of options produces what Barry Schwartz calls the “paradox of choice.”[5] With too many options we become stressed and immobilized, making it harder to choose. Beyond a certain point, more does not lead to better. Community consultation exercises become protracted when too many versions of a plan are investigated. In addition to the increase in cognitive complexity of the task, there is a sense that we will miss out on the potential value contained in the alternatives we need to reject.

The paradox of choice is a growing issue as the use of search engines and online forms of communication make overproduction of options an everyday occurrence. Setting manageable decision limits is quickly becoming a vital competency for busy professionals. Clarify values and priorities before exposing yourself to a potentially overwhelming array of options. Limit the number of alternatives by grouping and ranking, and remind yourself to focus on what you are looking for, not what you are giving up in the options you do not select. This new reality is here to stay, and we each need to develop the means to remain in charge of our own critical managerial resources – time and attention.

Paradox #6 – the helper’s paradox – where help only makes things worse

In theory, we understand that people and organizations are better off when they solve their own problems, and that we should respect boundaries. But sometimes it’s simply too hard to leave things alone when we see, or believe we see, a need. Unfortunately, the result is often the opposite of what we had hoped for, and the problem either gets worse or more complicated as a result of the tension created.

As a general rule, problems are solved best by whoever owns the problem. The helper’s paradox occurs when you can see, or believe you see, both the problem and solution affecting another person, and choose to impose these insights on them.

We’re all susceptible to this impulse. It usually comes from caring and a genuine desire to help, but too frequently it is coupled with the much less healthy need to control and protect. The next time you find yourself in this situation, begin by asking for permission to share your advice. If the answer is affirmative, proceed; if negative, respect the request and back off. Once given, let it go. Even if you’re right – and there is always a slim chance you aren’t – repetition only makes it harder for the recipient to accept and act on the suggestion.

Paradox #7 – Anais Nin’s puzzle – the harder you try, the worse it gets

There is a visual trick that occurs when you try to find the hidden shapes in images like the one in Exhibit 1 below. You stare and stare without seeing an obvious pattern, until tired and fed up, you mentally quit, and then, amazingly, there it is! Several things might explain this, like for example, the pattern being well disguised and hard to discern. A more interesting explanation is that as you increase effort and concentration, your attention is drawn to the most readily apparent shapes and figures, so much so that other patterns become hidden to you. Gestaltists explain this by pointing to the relationship between figure (what stands out) and ground (the reference context). The insightful 20th Century French writer Anais Nin captured this predicament with the observation that, “We see the world as we are, not as it is.”

The harder you look, the more you base your search on what appears to be present. It’s only at the point when you stop trying that other shapes and possibilities can be seen.

To overcome the hypnotic power of this dilemma, you need ways to see differently and challenge your perceptions. You can speed things along by briefly focusing elsewhere, or by opening yourself up to the views and challenges of others.

Exhibit 1 Famous images of an old lady and a young woman (circa 1880)



Note: Most people see one or the other instantly. Finding the second image is more a function of time than of effort

Paradox #8 – knowing too much – what you know can hurt you

There are times when the more you know about something, the harder it is to see solutions that are right in front of you. Veteran CEOs sometimes know their businesses so well that they become blind and deaf to new competitive threats or growing cultural dysfunction and miss what others easily see.

Sometimes the less you know about a situation, the more likely you are to see opportunities or to make useful connections. Creative ignorance allows you to challenge common wisdom and to think more freely.

Thomas Kuhn described the knowledge-as-barrier dilemma in his 1962 classic investigation of innovation, *The Structure of Scientific Revolutions*.^[6] It often takes someone not invested in a “paradigm” to reframe and challenge its apparent truths. Even then, “experts” are often slow to adopt breakthroughs that don’t conform to their knowledge maps about how things work. More recently, studies by Professor Karim Lakhani and his Harvard colleagues into “open innovation” have noted systematic evidence of solution-finding in tough cases occurring at the peripheries of disciplines rather than at their core.^[7]

To address the know-too-much paradox, you need humility to accept that your strengths may be undermining your best efforts. And you need trust to try out approaches that feel foreign and wrong to you. This type of learning is often referred to as double-loop or deuterio-learning, whereby self-awareness is the starting point for reprogramming or otherwise modifying an approach in order to achieve higher performance.^[8]

Paradox # 9 – the shortest path is sometimes the longer route – being indirect can be the most direct approach

Some problems are so big, complex and daunting that they immobilize efforts to solve them – world hunger, global warming and AIDS are three examples. The demise of the North American auto industry over the past three decades offers a classic study in denial, inaction and self-doubt.

With some big, overwhelming issues, as long as you remain intent on fixing the whole problem you can’t do much good at all.

When a problem is too big, the best course of action is to drill down or to scale down. By drill down, I mean identify what problem-solving experts call root causes. These are underlying factors that account for the majority of what is going wrong; they are primary causes that need to be addressed so the problem becomes more manageable. Scaling down involves breaking a problem into many smaller constituent elements, each of which can be then be tackled – what time-management expert Alan Lakein calls the “Swiss cheese” approach.^[9] What can you do in the next five minutes that will make a positive difference? What easy and useful things will help you gain momentum?

Act with integrity and seek clarity

The paradoxical nature of problem solving may be a given, but we get to choose how we respond. By responding to the decision choices of a crisis, people find strength and resources they didn’t know they had. Businesses earn the chance to reclaim lost momentum and credibility when they acknowledge and address a problem. By naming the paradoxical trade-off and facing it squarely, we place ourselves in a position of strength and reclaim lost authority to act. We become “unstuck.”

Success lies ultimately in acting with integrity and attaining clarity. When you proceed with integrity, you pay better attention to where and how paradoxical binds are operating, and you recognize your own part in creating and sustaining problems. By pursuing clarity, you

ensure that problems are framed and assessed accurately and fairly. The two biggest enemies of problem solving are fear and ignorance. Recognizing and facing the nine paradoxes (Exhibit 2) gives you the means to strip fear and ignorance of their disabling strength and to put yourself squarely in charge of the problem-solving process.

Exhibit 2 Summary of the nine paradoxes of problem solving

<i>The paradox</i>	<i>How it works</i>	<i>The antidote</i>
Problems as shields: Growing dependent on a problem so we can't possibly solve it	Crazy as it sounds, we grow dependent on some of our problems over time, as they defend us from even bigger, scarier problems, or simply become familiar pieces of our sense of who we are	Explore the possibility that certain problems might be covering over deeper ones. Discover which fears are masked by chronic problems
Secondary gain: Putting up with problems as a way to get what we really want	It's hard to give up certain problems when we receive so much positive reinforcement for them!	Look for what you are gaining as a result of certain problems. Practice letting go of the problem, and find more direct ways to obtain what you want
Simon's dilemma: We need to make up some of the facts if we want to be accurate	All decision making involves building assumptions and models of the future. To be right you have to risk being wrong. Trouble is, we quickly forget which parts of the equation we made up, and we treat assumptions like facts . . . which of course can be dangerous!	Accept the dilemma and get on with things But stay clear about what is hard, verifiable fact and what is conjecture And keep a careful eye on the grey areas, ready to update and correct assumptions
The solution is the problem: Solving complex dilemmas only makes things worse	Rushing to solution in highly complex cases often brings short-term relief while making the underlying situation worse and increasingly difficult to deal with. Dilemmas need to be understood, acknowledged and addressed, not solved	Recognize dilemmas by the fact that there are at least two competing forces or options Stop trying to fix this with a solution Identify competing forces and explore implications for how you and others need to respond
The paradox of choice: Too many options makes choosing stressful and difficult	Having options generally improves problem solving success. However, too many options is confusing and a burden. Not realizing this, it's easy to become disempowered by more good alternatives	Separate out needs and wants, remembering to give priority to the most important items Focus on satisfying needs and goals, not on superficial things you can't have
The helper's dilemma: Unsolicited help often achieves the opposite of what is intended	As a general rule, problems are solved best by whoever owns the problem. The helper's paradox occurs when you can see (or believe you see) both the problem and solution affecting another person, yet can only make things worse by helping	Determine if you need to do or say anything at all. Help is often experienced as judgment . . . which triggers defensiveness Share what you know or believe, and then be available to help further if asked
Anais Nin's puzzle: Seeing the world as we are, not as it is	The harder you look, the more you base your search on what appears to be there. It's only at the point when you stop trying that other possibilities can be seen	Get some distance from the problem Ask others for input and opinions Use structured brainstorming techniques
Knowing too much: Knowing so much that you miss the obvious because it contradicts what you know	Sometimes the less you know about a situation, the easier it is to see opportunities or to make interesting connections. Creative ignorance allows you to ignore common wisdom and to think more freely	Seek out input from people you respect, and who don't know too much about the situation or field in question Open the process up to non-experts
Let go of the problem to solve it: You rarely beat the really big problems by trying to solve them directly	Really big, complex problems can be overwhelming. As long as you remain intent on fixing the whole problem you can't do much good at all	Stop trying to solve the whole problem Chop the problem up, and solve little pieces Identify some root causes, and start with ones you can do something about

Notes

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3. Senge, Peter, *The Fifth Discipline*, Doubleday, 1990.
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5. Swartz, Barry, *The Paradox of Choice*, Harper Perennial, 2004.
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