

FREE FIRST CHAPTER

PROBLEM SOLVING FOR EVERY PROBLEM

When A Problem Becomes A Real Problem

The Problem Solver's Manual To Face Any Challenges And Handle Life's Hiccups — Chapter One. About a 8-minute read.

In 2015, researchers reported an unusual archaeological find that predates the pyramids of ancient Egypt.

The seemingly unremarkable stones are the world's oldest stone tools dating back 3.3 million years. They predate any tools hitherto discovered by 700,000 years and are even older than the earliest humans. The *Homo* genus, to which we trace our roots, appeared no earlier than 2.4 million years ago. The tools must have been made by more ancient species, either the *Australopithecus afarensis* or *Kenyanthropus platyops*.

Our untrained eyes may not discern it, but the tools consisted of three types. Stone flakes are sharp-edged pieces "knapped" (or intentionally sheared off and not accidentally fractured) from larger rocks. Flakes were used for cutting, while other tools were used as hammers and anvils, the latter being larger and weighing as much as 15 kilograms. The anvils probably rested on the site, while other stones were smashed against it to make tools.

It is not surprising that a genus preceding *Homo* created tools. Many primates are known to use tools intelligently. Chimpanzees, humanity's closest living relatives, habitually use makeshift hammers, spears, and other specialized tools without human help. Gorillas, the largest primates, use branches as walking sticks to test water depth and trunks to make

bridges. They demonstrate the use of tools not only to find food but also to deal with their surroundings.

Macaques living near Buddhist temples are known to pull hair from visitors to use as floss to clean their teeth. Mother macaques have been observed to slow down their motions to “educate” their young while passing the hair strands back and forth between their teeth. Orangutans have improvised whistles from bundles of leaves to signal the presence of danger to their family members. This marks the first time an animal has been known to fashion a tool to communicate. Since this knowledge is passed along to younger generations, it also exemplifies that culture – the passing of knowledge from one generation to the next – is not exclusive to humans.

Tools are not the exclusive purview of primates. Elephants have been known to intentionally drop logs or rocks on electric fences to short them out. They also chew bark into balls to plug water holes to keep other animals from drinking them dry. Asian elephants have systematically modified tree branches by breaking them down to ideal lengths to swat the flies alighting on them.

Like land animals, ocean creatures also use tools. Sea otters use stones to hammer abalone shells on rocks, cracking open the hardest shells of their prey to eat the succulent meat inside. Dolphins have been known to carry marine sponges in their beaks to stir the sand at the ocean’s bottom to uncover their prey. Octopuses use coconut shells as portable armor. They even stack up the shells and, sitting atop them while using their tentacles as stilts, transport them across the seafloor to use as shelter when needed.

What does it mean for a creature to intentionally fashion tools to serve a specific purpose? We can only infer that the tool-making creature is capable of solving problems. It possesses the cognitive abilities to identify a need, to realize that its present situation cannot meet this need, and to modify something in its surroundings to satisfy its need.

Problems have beset us (and other creatures) since time immemorial. They exist as obstacles to our continued survival and prosperity. Species unable to eliminate these

obstacles will likely face deterioration and eventual extinction, as many already have. Those that overcome ever-increasing hurdles evolve onto higher-order levels.

The same is true of our contemporary social order. Those among us who best solve problems are rewarded with the fruits of society, such as wealth, respect, renown, and positions of privilege. Those who fail at solving problems are compelled to rely on the charity and residue of the successful. If we are to improve our lot and the future of our descendants, we need to surmount our problems with a higher rate of success than our predecessors.

This book is intended as a manual of sorts that we may return to now and then to find ideas with which to address our problems. The first two chapters explain the fundamentals of the problem-solving process and the psychological dynamics in addressing our dilemmas. The third chapter provides a glimpse into the lives of outstanding individuals whose approaches to solving problems are worthy of emulation. The fourth chapter clarifies some problem-solving myths, and the fifth chapter describes the fundamental problem-solving methods.

The sixth chapter explains how costs and benefits are analyzed to solve problems. The walk-through example incorporated here will be a helpful guide for readers meeting this for the first time and a helpful recall tool for decision-makers already familiar with it. The seventh chapter lists and expounds on popular problem-solving frameworks as well as a problem-solving paradigm upon which we could pattern our solutions. The final chapter leaves us with some useful problem-solving tips.

A wealth of experience addressing a wide range of challenges imbues the chapters you are about to read. For over forty years, I have worked as an engineer, legal researcher, financial adviser, and university professor. I supervised workers and managed organizations, as well as raised children and ran a household. Intense research augmented the insights garnered from these experiences, all to create a book that is practical, engaging, and attuned to your needs.

If you are ready to become a better problem-solver, then turn the page, and enjoy the journey.

Chapter One: When A Problem Becomes A Real Problem

Every family has a drama queen, and in our family, the distinction fittingly goes to Nikki. As an adolescent, she was the temperamental one in the family. She once burst out in her characteristic wail: "Oh, dear God, I am so stressed! Math test, ballet practice, French class, art contest, and Rissa invited the gang for a sleepover tonight. Why, oh why, does everything have to happen at the same time?"

Arnold burst out laughing as he caught my eye roll, then turned to his younger sister. "Nix, I have a lot of work to do, too, just like you – except for the sleepover. That's girls' stuff." Then, trying to be helpful, he suggested: "Why not skip that? Then you have less to do." Nikki replied exasperatedly, "I can't. The girls who will be there will talk about the girls who won't be there!"

"Well," Arnold shrugged, "I'm glad I don't have your problems. But we all have problems. We just handle them differently."

"Your brother is right," I intervened. "Nikki, you don't have a problem with your activities because you enjoy doing them. You have a problem with managing the time to do them."

When Benjamin Franklin wrote in 1789, "Nothing is certain except death and taxes," he left out one thing: problems. Throughout our lifetimes, we encounter situations we find discomfiting because they challenge our comfort zone. Problems create stress that prompts us to act to resolve the problem. In doing so, we achieve mental acuity and emotional maturity in the process. Overcoming problems in our youth builds our resiliency to face more serious problems in adulthood. Encountering problems is a healthy part of life.

Problem And Its Definition

We spoke of problems as undesirable situations. In psychology, a problem is defined as an interactive relation between a subject and its surroundings, characterized by a conflict that the subject solves by searching for a transition from the initial condition to the final condition. Thinking of a problem as a relation is strange to many of us, but it helps us to identify the interrelated elements in the conflict situation, like Nikki realizing that her problem involved the time element.

The “problematic relation” refers to one of two things:

1. A conflict between two contradictory tendencies the subject sees as incompatible, or a difference between the current situation and the aim the subject needs to achieve; or
2. A disorder in the objective situation or in the structure of activity and subjective uncertainty that causes activating tension and motivating focus.

So, the relation described as problematic is incompatibility or disorder between two states, one of which is naturally desirable and the other undesirable. The presence of this conflict creates a tension (stress) that motivates us to act to restore compatibility between the current and desired situation.

The incompatibility may be simple and easy to remedy. For instance, John needs to cross a river and travels to where a bridge is normally found. Unbeknownst to him, the bridge was damaged during the previous storm. The gap in the bridge may be small, in which case John may use some nearby planks to create a walkway that can help him cross safely to the other side. Or the bridge may be entirely washed out, requiring John to find an alternative such as a boat or another bridge further down the river to enable him to cross over.

In other instances, the incompatibility between the desired and problematic situations may be serious and difficult to remedy. Take two countries, Russia and Ukraine, that differ in their understanding of how they ought to relate to each other. The leaders of the two nations undertake a series of complicated negotiations to settle their differences diplomatically. Failing at this, they ultimately feel compelled to resort to the ultimate

recourse – armed conflict. Unfortunately, this is the way ancient tribes or modern nations have settled their problems intermittently throughout history. But it is an extreme form of solving a problem.

Nations resolve their difference according to diplomacy and politics. On the other hand, people are governed by their psychological makeup, or cognitive styles, when reacting to problems they meet.

Action Steps

Try to recall past problems that you consider to be particularly difficult and contentious. Try to identify the “problematic relationship” between your environment and your goal that is a natural desire. Environment means society, family, your life, career, or occupation, whatever situation you contend with. Recall how you solved the problem, or if it is still outstanding, how you may likely address it.

Moving On

Now in their thirties, Arnold and Nikki look back at their teen years and laugh at what they then considered their earth-shattering problems. We probably all do. As we grow older, our problems commensurately grow in size and gravity. The next chapter will give us a glimpse of how psychological factors influence the way we solve problems.