

Book Wired for Survival

The Rational (and Irrational) Choices We Make, from the Gas Pump to Terrorism

Margaret M. Polski
FT Press, 2008
Listen now

- play
- pause

00:00
00:00

Recommendation

This book’s short length is a double-edged sword. On the one hand, neuroscientist Margaret M. Polski’s brevity and clarity make the book an accessible overview of how contemporary cognitive science views thinking and decision making. On the other hand, it is so brief that Polski leapfrogs through a great deal of material very quickly. Some readers may seek a more fully developed explanation of how economic events – like the power struggles between energy producers and energy consumers – relate to research in neuroscience. Issues such as how rationality affects cultural systems like liberal democracy deserve more attention. This lack of connective tissue makes this slender volume pretty episodic, but it also is rich with illustrations drawn from sources ranging from contemporary politics to the classic comedy of Monty Python. The result is enjoyable and useful, if a bit disjointed. *BooksInShort* recommends Polski’s book to strategists who are planning for times ahead, to leaders who seek to understand their organizations, and to people who want to understand themselves.

Take-Aways

- The way human beings rationalize their actions affects everything from your personal choices to world energy politics.
- Being “wired for survival” governs how individuals think and how the world works.
- Survival-based thinking shapes how political relationships shift as developing nations gain economic power and reclaim resources from the developed world.
- When groups have different worldviews, conflict emerges.
- The interaction among the outside world, your brain and your body shapes your thinking and your “mental models” of the world.
- The human brain adapts to experience, but this can be unfortunate, because it can adapt to trauma by becoming less functional (as in posttraumatic stress disorder).
- Intense emotional responses can overwhelm your ability to reason clearly.
- Becoming aware of your experiences, feelings and biases will improve your thinking.
- People make most decisions intuitively and think only in order to justify their decisions.
- Humans respond to social cues, so following the group makes evolutionary sense.

Summary

Can We Hope?

After World War I, many thinkers despaired of deriving meaning from the world. Poets such as T.S. Eliot saw the world as a “senseless” wasteland and viewed humanity as “hollow.” Society now faces a similar crisis of confidence. The globe can seem like a terrible place in light of ongoing conflicts and global traumas like climate change, terrorism and food shortages. However, Nobel Prize-winning economist Thomas Schelling sees a different world. He sees a human race that has had the capacity to blow itself up since nuclear weapons were developed – but has managed not to do so. Rather than facing certain destruction, could humanity be “wired for survival”?

Adaptation, Survival and Change

Unlike animals, humans have the ability to rise above instinct and adapt to shifting situations. If humanity wants to survive, people must be adaptable. To take one challenging area of turmoil and change, look at economic growth. Since 2000, the world’s gross domestic product (GDP) has increased an average of 3.2% per year. That number doesn’t sound impressive until you compare it to past growth. From 1870 to 1913, a time of great economic growth, global GDP grew an average of 1.3% annually. During the next such boom, 1950 through 1973, the average annual global GDP increase was 2.9%. While the United States and the United Kingdom doubled their per capita GDP in the course of 50 years during the 1800s, modern China managed a similar feat “in just nine years” as part of a larger economic shift in which “emerging economies” are growing at an average of 5.6% annually, while developed nations’ average annual growth is 1.9%. Developing countries now account for more than half the global GDP. When the economic balance shifts this way, so, too, do “resource allocation, geopolitics and human development.”

“To survive and prosper, we must think differently and make different choices than we have made in the past.”

For example, developing countries’ rising energy demand is driving fuel prices higher. Increasing demand can also prompt energy-producing nations to raise oil prices for political reasons. In many of those states, the government – not private enterprise – controls access to energy. Among other faults, many of these nations lack the political structures to protect “property rights”; some are politically unstable. Their internal conflicts can lead to larger threats, such as collisions between regions.

“The nervous system is like a very large and very loud cocktail party, where all the deals in the business of life are made.”

Developed countries have more expertise in oil discovery and exploitation, and greater capital to invest, but they perceive society differently than authoritarian oil-exporting nations. Gaps between these worldviews point to greater instability, political vulnerability and power shifts, as signaled by oil-producing countries that use resources for political advantage. These autocratic states’ centralized decision-making mechanisms soon will oppose the self-limiting democratic governments in the US, UK and Australia. To negotiate these clashing worldviews, and to maintain oil production and an international economy, humanity will need to develop better models of how people make choices. This means learning to understand how human beings think.

Thinking, and Thinking about Thinking

To understand how you think, envision your brain and nervous system as being like a set of Russian nesting dolls, in which one hollow wooden doll holds another doll that holds another doll, and so on. In this case, your nervous system holds your central nervous system, which holds your brain, and your brain holds your cerebrum, which in turn holds your cerebral cortex. The analogy breaks down here because – unlike the dolls – these parts of your nervous system are never fully separate. Instead, they are integrated and work together.

“We are wired to get a better feel for things from what we observe and experience firsthand than from what is written in a handbook or espoused by a group of remote advisers.”

The most basic units of your “complex bio-electro-chemical sensory” nervous system are the neurons and glial cells. Neurons transmit signals through your nervous system. They have two parts: the “branchlike” dendrites that receive incoming messages from other neurons, and the axons that transmit outgoing messages across the synapses between cells. Neurotransmitters enable your neurons to send these messages chemically, so your thinking depends on their proper functioning. This capacity develops based on your genetic makeup, but your experiences also affect it. What you do and see shapes which sections of your brain become more densely “wired.”

“There is a mismatch in how exporters and importers think and choose that creates conflict in energy trade relations.”

When you think, your brain completes multiple tasks, each with a different focus. You monitor your surroundings, sorting the information coming in from your senses and “comparing it to memories of...experience.” You generate and compare multiple hypothetical courses of actions, choose one and act. The central nervous system (spinal cord and brain) is the core of this process. While some forms of processing seem to be distributed throughout the brain, different areas of its hemispheres specialize in processing specific input. For example, the occipital lobe handles visual input, the temporal lobe handles sound, and so on.

“Private enterprise, government and the rule of law all fail to deliver satisfactory order.”

Your marvelous brain is very malleable; it adapts to experience. However, some adaptation isn’t functional. For instance, intense trauma sometimes rewires the brain so that it functions differently after an ordeal. Those affected “make inappropriate choices,” misread social encounters and generally function less well. If a major portion of a community has PTSD, its productivity drops, and members find it more difficult to form group ties and heal disagreements.

From the Brain to the Mind

To understand how mental functions work, you need a “theory of mind,” a model, a way to envision or grasp how the mind works. Some see the mind as a computer, a machine that processes, encodes and stores data. This metaphor, which suggests that the mind is essentially reasonable, appears in many economic and political theories that treat people as rational beings, driven by self-interest. The idea that the mind is modeled on a computer can be useful, but it omits anything that isn’t rational, like intuitive creative leaps, emotional drives and subconscious impulses. “Many – perhaps most – human choices” are creative, emotional or subconscious, so a comprehensive model of thinking must take irrational factors into account.

“Recognizing a threat is an essential survival skill but overreacting to a threat interferes with our ability to adapt and change.”

Thinking is a process where your mind and body talk to each other. As sensory data enters your mind from the outside, your body’s nervous system generates internal neurological activity. Neuroscience has not yet mapped how – or even where – this conversation happens. In several areas of mental processing, all science can do so far is to map the relationship between “an external stimulus and a response.”

Ways of Thinking

Most people “think and choose intuitively.” Your mind and body respond to external cues without your conscious recognition of that process. You have a passing thought. You smile in response to a passerby’s nod. In the course of such “intuitive thinking,” your mind compares “mental maps” from past experiences to the present circumstance, seeking responses that are – if not perfect – then “good enough.” Intuitive thinking often serves people well, but even when it doesn’t, improving how you think is difficult because so much processing happens below the level of consciousness.

“Many – perhaps most – human choices emerge from this same sort of unconscious, spontaneous activity that is not apparently directed by an overtly logic-driven ‘thinker’ or ‘decider’.”

Many factors beyond rationality (such as physical pain or past experiences) influence how people think. A mental model that incorporates those irrational inputs must be more nuanced and more useful than the simple computer metaphor. One such model says that thinking occurs at the intersection of three different “states”: the external

world; your “internal state,” including the “neurobiological activities” which support thought; and “a brain state,” including the mental maps your brain generates in response to external and physiological cues. You make choices amid the shifting interplay of these states, any one of which can dominate at any given time, depending on the circumstances.

“More often than not, we think and choose intuitively, our bodies and brains responding like weather vanes to sensory and social cues in our environment.”

Once you understand this mental model, you can comprehend how thinking works beyond the limits of pure rationality. People are not irrational, but they are “ecologically rational,” situational thinkers. Rather than thinking according to abstract rules, humans generate hypotheses that fit their changing environment. For a choice to make sense, it must respond accurately to social cues and sensory data. Some experts say that such emotional reasoning is more adaptable than logic, since it assumes people think in a social context, not in isolation.

“‘Groupthink’ and the social conformity it represents are endemic in every sphere of human thinking and choice.”

What’s more, people’s brains don’t operate in a uniform, unchanging fashion (as a purely logical brain might). Instead, your capacities change in different ways throughout your life. Until age 22, experiences and active instruction help you develop your inherited capacities. From 22 to about 55, you can strengthen and extend your capacities “by additional training and experience.” From then on, you can still learn, but your “neurobiological capacity” is shrinking. In each period, learning creates knowledge. Biologically, knowledge consists of memories – connections between what you’re experiencing and what you know. “Patterns of connections” among neural networks generate these associations. While science still doesn’t understand a lot about memory, one general rule is that “neurons that fire together wire together”: Neurons that operate at the same time join the same network. These networks provide a continual, embodied “emotional evaluation” of your thoughts, always weighing experiences and linking new data to existing knowledge. People make mistakes in reasoning, especially about risk, when they don’t align their emotional evaluations with logical information they know to be true, and so their biases lead them astray.

Why Change Is Hard for Individuals and Groups

Change is necessary for survival, but, paradoxically, inflexible “social conformity” and peer-driven “groupthink” are common in communities or organizations. Evolutionarily, that makes a lot of sense. Thinking is difficult, and your brain actually doesn’t have much energy left over from “maintaining system balance” to devote to thinking. Why not go along with the people around you? Then you avoid the risk of being shut out – or even persecuted – that you’d face if you challenged social norms. (That said, going against the flow and surviving is also a highly valuable trait.) Yet people are social, and much of your motivation for what you do comes from your relationships. While you are a distinct person, the boundaries between you and others “are tenuous and easily pierced.” Individual and group moods “are contagious” and spread readily.

“Training and experience matter because training is how we learn and experience is what we learn.”

You don’t just interact with others; you continually interpret their meanings, using subtle cues to deduce their thoughts. In any encounter, a “trigger” signals how your interactions proceed. These signals, which generally you transmit and receive subconsciously, allow you to “quickly and accurately intuit” what’s happening. You tend to interpret interactions in light of past experience, and so you may need to use reason to override any inappropriate responses. The larger, more accurate your mental models are and the broader your experience is, the better you’ll be able to read other people. You can expand your models by simulating others’ experiences. Changing yourself is hard. You can’t just alter your thoughts. Instead, you have to rethink your actions or rewire your habits. Transforming an organization or “an entire social order” is even harder, because you have to get people to change their minds and actions, and to break with social patterns that those around them reinforce continually.

“We are all mind-readers, and the minds of others are always involved when we think and choose.”

Nonetheless, the ability to roll with the punches is essential. People must make better choices to generate improved policies and strategies. Such changes start with better thinking. Some experts see game theory as a solution to the need for deeper thinking. It can help you understand risks and possibilities. However, even if you had an analytical tool that could address all of today’s challenges (no tool can), it wouldn’t be enough. Given political complexities, to reduce society’s overall vulnerability, people must combine their “analytical tools” with concrete action and with greater knowledge of the issues that separate them (religious and economic gaps). For example, the US could make better decisions about national defense if it shifted to alternative energy sources, made those sources less vulnerable to attack and provided economic incentives for energy efficiency. When offensive military action is needed, the US can make better decisions if it understands local cultures, collaborates with local forces and elucidates shared interests. In short, learning to make better decisions is directly related to national survival.

About the Author

Margaret M. Polski, PhD, is an Affiliate Fellow at George Mason University’s Center for Neuroeconomics.
