

CHAPTER ONE

Foresight

Imagine a world where a handful of businesses and governments could foresee the future. In the beginning, they could see to the end of the block. A little later, the end of the street. Then all at once, around the corner, down the highway, across the ocean, and beyond the curvature of the Earth.

Now imagine for a moment their prognostications were right.

Not right once or twice. Right every single time. Imagine anticipating future events with such precision that a threat could be quashed before it had opportunity to materialize; shortages and surpluses could be managed in advance; public opinion shaped beforehand.

Well, imagine no more.

This phenomenon is underway—a shift so subtle it feels like no more than a hand gently ushering us across a crowded room. That crowded room is the Information Age—and we

are slowly making our way to the other side to *a future that is knowable*.

A knowable future? Have I lost my mind?

Perhaps.

But consider the evidence. Fifty years ago, the sex of a newborn was a surprise revealed only at birth. A few decades ago, we didn't know whether a person was predisposed to breast cancer, baldness, Alzheimer's, or depression. We didn't have the meteorological models, instrumentation, or satellite imagery to evacuate an entire city in advance of a hurricane. And no way to know when a country's currency was on the verge of collapse. Never mind how oil production in the Middle East will affect banana prices in Tokyo...

Every day our ability to anticipate future outcomes grows more acute, more all-encompassing, and extends further out. This sea change has equipped today's leaders with a previously unimaginable power—the power to respond to and shape events before they occur. We stand on the cusp of what Darwin himself might have called *predaptation: the ability to adapt a priori*.

Similar to other leaps in human evolution, this capability did not occur overnight. Following millions of years of trial and error—and the failure of over 99 percent of the species that once inhabited Earth—Mother Nature saw fit to bless a single organism with the aptitude to understand “tomorrow.” Our adeptness at conducting sophisticated thought experiments—our ability to assess risk and prioritize complex scenarios in rapid fire—is unique to *Homo sapiens*. Not only is this faculty unequalled, it is also, without question, the most powerful asset nature has produced to date. For there is no greater advantage than the ability to abate danger or seize

opportunity which has yet to manifest. Not in nature. Not in business. Not in governance.

The truth is, every controversy, every intractable problem we face today, every emotionally charged debate is about events we see coming: how to stop climate change; how to save the Euro; how to quash the threat of nuclear war, illegal immigration, and terrorism; how to care for a growing aging population; how to reverse debt, obesity, gun violence, racism, over-fishing, and addiction. We see these things with new foreboding—though we passionately disagree on what to do about them. Or whether anything *can* be done.

It is fair to say that our initial foray into the future has been clumsy—as awkward as our first attempts at two-legged locomotion. Despite possessing more knowledge and technology than at any other time in human history, we behave schizophrenically toward the future, vacillating between a destiny that is shaped by free will, one that is erratic, indiscernible, and uncontrollable, and one micromanaged by supernatural forces. When a person carelessly invests their money and loses it, when they eat their way to obesity or illness, when they commit a crime and are sentenced, we view these events as the predictable consequences of our actions. But let those same individuals fall in love or get a flat tire on the road and we treat these events as the work of Gods who shuffle the deck for their own pleasure.

Well, which is it? *Can we control the future or not?*

The ancient Greeks said no. They created three goddess-like “Fates” called the Moirai to explain the trials and triumphs mortals encounter. The Moirai controlled every aspect of human life from birth through death. As the ordained enforcers of destiny, even Gods like Apollo and Poseidon were

rendered impotent by the Moirai, let alone the feeble ambitions of men.

Throughout Asian cultures, the future is treated as a time when justice is administered through reward and retribution. According to the principles of Karma, every living organism is held accountable for their actions. A mindful life leads to health, safety, peace, and wealth. Whereas an unconscious life—one that inflicts harm on others—produces suffering for the offender. This is how balance is maintained in the universe.

In areas of Africa and South America, sacrifice plays a large role in determining the future. Small animals, money, food, song, and dance are offered to deities to court favor. Whether that favor is a robust harvest or the birth of a healthy child, villagers come together to perform rituals and offer gifts aimed at turning the tides of fortune.

No matter which culture, religion, or period in human history we examine—from Christianity and Islam to Santeria, from European high society to remote tribes in New Guinea, from the great Egyptian, Ming, and Roman empires to the twenty-first century—the future is portrayed as a tug-of-war between man, chance, and God.

It wasn't until recently this ambivalence was brought to heel. For the first time, predictive algorithms powered by lightning-fast computers and mobile communications brought the entire universe of human knowledge to man's fingertips. Technology made it possible to string together millions of variables, in real time, revealing cause-and-effect relationships we never knew existed. And this leap has armed humanity with a staggering power: the power to reverse-engineer the consequences of our most benign actions.

With the Information Age came data. With data, analytics. With analytics, foreknowledge. And with foreknowledge, *fore-sight*. As our prowess for prognostication spread, we stumbled upon an unexpected truth—one which has tectonic implications: *there is far less randomness to the future than we thought. More of it is predictable than not.* And if more is predictable, then more can be manipulated.

And overnight the race to engineer the future was on.

China pulled ahead of the pack, sewing up rare earth minerals throughout the African continent—exporting over a million Chinese citizens to settle there. The United States and Russia staked an early claim to outer space. Visionaries like Richard Branson, Elon Musk, Craig Venter, and Ray Kurzweil got a head start in commercial space vehicles, artificial intelligence, and genetic engineering. Hundreds of start-ups jumped into sensor and satellite technologies designed to measure anything, anytime, anywhere. Even large retailers got in on the action, quickly locking in milk supplies and prices when rises in temperature were forecasted. Once a connection between warm weather and a decrease in a cow's milk production could be established, grocery chains began monitoring NASA's meteorological database to corner supplies before shortages occurred.

As you read this page, businesses and governments are preparing for drones to deliver everything from life-saving medicines to common parcels within minutes.

Last year, Amazon filed for a patent on a blimp-like "floating warehouse," disrupting previous notions of fixed, terrestrial storage facilities, distribution centers, and factories.

Today, forward-looking insurance carriers and automobile manufacturers are making plans for self-driving cars—vehicles

that will eliminate millions of accidents caused by operator error, along with the need for driver training, driver's licenses, law enforcement, stop signs, and traffic signals. Automobile ownership will become a thing of the past, and there will be no more need for taxis. Healthcare and pharmaceutical companies are preparing for nanobots—smaller than a single cell—that will treat disease from the inside out, making surgery and drug-based treatments obsolete. Retailers, immigration departments, and educators are getting the jump on facial recognition software to screen applicants, identify criminal conduct, and track student and consumer reactions. And political pollsters are not far behind. The only people not surprised by the 2016 election of Donald Trump were technologists who had better tools and data.

We can foresee that within the next decade every human will confer with an electronic cyber twin that looks and behaves the way they do—one which has the ability to quickly search the Internet and deliver only the data their biological counterpart needs to make a decision. Our electronic avatars will know our preferences, our habits, our history, and will allow us to accomplish twice the work in half the time. And bio-feedback sensors will instantly alert us to nutritional deficiencies, dehydration, and the earliest indications of disease.

Every nation will rely on an electronic army to fend off cyber attacks and defend their physical borders; commerce will be driven by a single, universally accepted cyber currency that will eliminate the power to artificially manipulate exchange values; all energy will be renewable and free as breakthroughs in renewable sources, battery storage, etc., reach previously unimaginable capacities; sophisticated 3-D printers will print food to fit our palette preferences, as well as perfectly fitted

clothing, furniture, and other goods from the comfort of our homes. Hospitals will use these same 3-D printers to produce prosthetic body parts on the fly, architects will print flawless buildings with the electrical, plumbing, and infrastructure in place, and auto parts companies will print spare parts on demand. This technology and robotics will deal a final death blow to volume manufacturing, causing intellectual property to become the only valuable corporate asset while simultaneously giving rise to a class of “knowledge workers,” the likes of which the world has never known.

These changes are coming. They will be upon us soon.

Ready or not.

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