Weird Leonards in History

The Intuition Study

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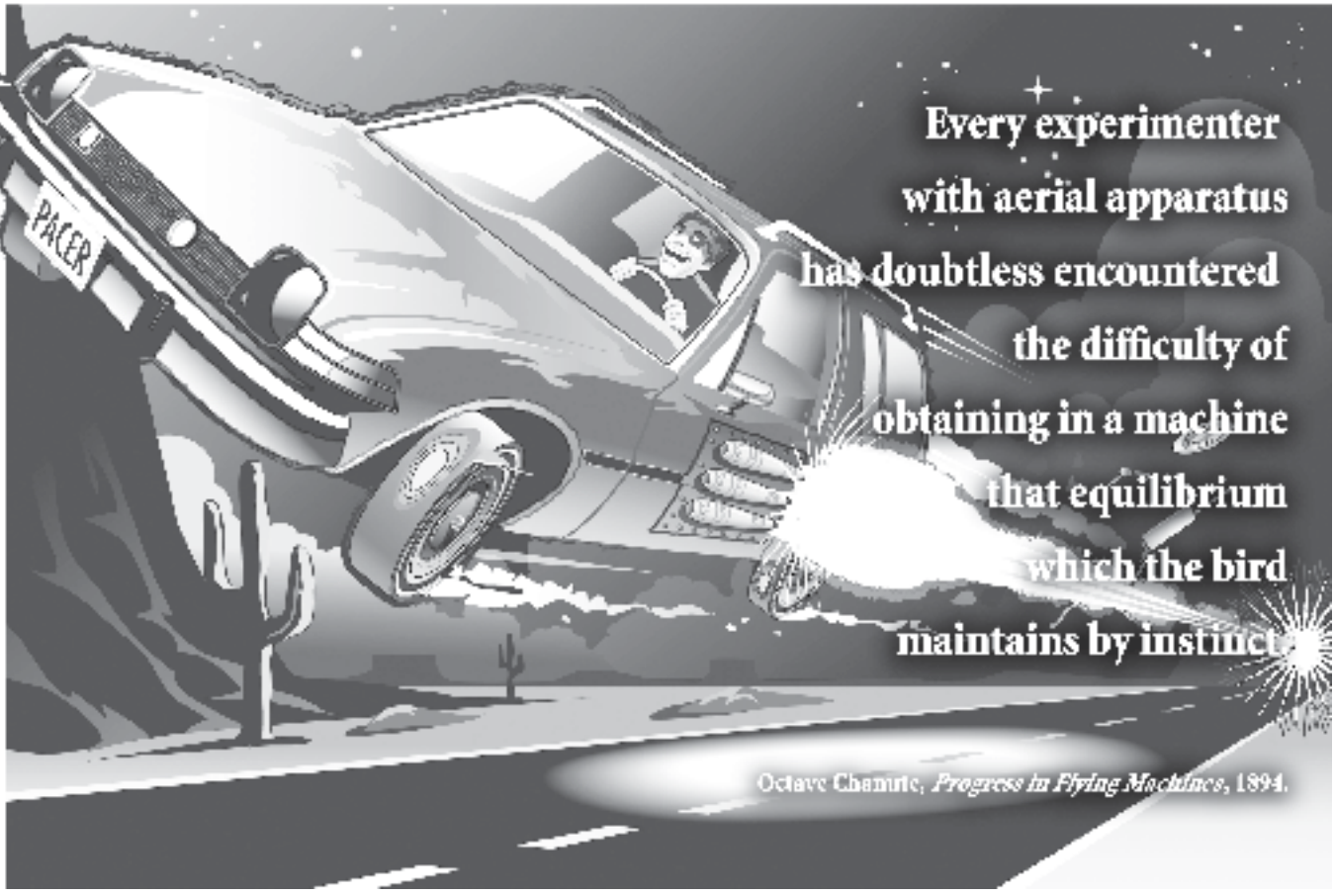

Before the dawn of recorded history, our über-great grandparents ran around the planet making crucial decisions on the fly. After extensive study of prehistoric arrowheads, pottery shards, bone fragments, and cave paintings, paleoanthropologists all emphatically agree: Our early ancestors in Swartkrans (Africa) and Choukoutien (China) did not adjust their Cave Program Object Memorandum (CPOM) to establish a multi-year study, costing several thousand she-goats and an equivalent number of hand-crafted stone chopping tools, in order to determine the operational value of fire. The consensus among the academic community is they just rubbed some sticks together and liked what they saw.

Obviously, the happy human tribes that controlled this mystical light/heat thrived and advanced, while those who couldn't master the tool tended to be wetter, colder, and more miserable—and less successful at ensuring their genetic material moved on to the next generation. Undoubtedly, a few of the early innovators went a little too far with fire experimentation and inadvertently removed their genes (or their eyebrows) from the pool. We'll talk about this class of experimenter in more detail shortly.

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Illustration by Jim Elmore

At this point, however, amateur paleoanthropologists like ourselves are wondering: How important is intuitive decision-making to human progress? How effective or reliable is it? Can it hold a candle to the thorough, exhaustive, deliberate methods of modern scientific management? Shouldn't there have been some sort of CPOM? Is *that* what those cave paintings are?

Well, according to *Blink: The Power of Thinking Without Thinking*—the latest, hippest book by the *New Yorker*'s Malcolm Gladwell—a substantial body of evidence indicates that average humans can effectively surmise most situations within approximately 30 seconds. In his book, Gladwell explains mind-boggling concepts such as thin slicing, locked doors, and something called the Warren Harding Error. (Even though Mr. Harding was a remarkably handsome man who won the presidency in a landslide, historians regularly rank him as the worst U.S. president ever.) It's a fun read, but you can probably blink both the content and the value without reading the whole thing—and many of you have probably done so already.

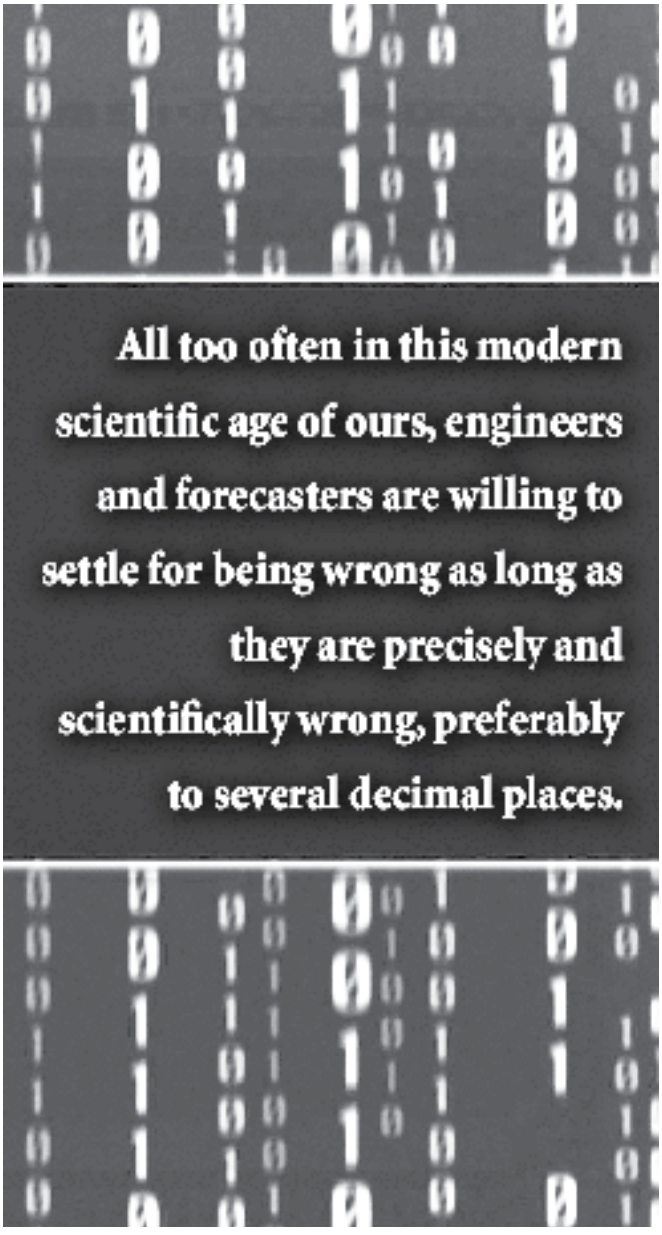
The point of all this is that if we just take a few minutes to think about thinking, specifically about decision making, we all have the potential to make better decisions faster. And these days, that can make all the difference.

Weird Leonard's Experiment

Now it's time to introduce the star of this article: the driver (let's call him Weird Leonard) who made a from-the-gut decision to mount a Jet-Assisted Take Off (JATO) rocket engine onto a 1975 AMC Pacer and take it for a test drive on a dusty desert road. (Some people say it was a 1967 Chevy Impala, but we know better.)

The subcompact AMC Pacer was nearly as wide as a full-size car, but half the length. It featured the newly developed technology of rack-and-pinion steering, along with new windshield safety glass that broke into small, round beads instead of large, jagged pieces with sharp edges. It also featured an impressive drag coefficient of 0.32, so you don't have to be a rocket scientist to see why Weird Leonard thought the merger of a JATO rocket with a Pacer was a good idea. As it turns out, Weird Leonard wasn't much of a rocket scientist himself.

Following his own intuition, Weird Leonard triumphantly climbed into the cockpit of his mighty Pacer and began driving through the Sonoran Desert. At some undetermined speed (undetermined due to the lack of remaining records), Weird Leonard ignited the fateful rocket engine. He quickly lost control of his Pacer, burned out the brakes, and balded the tires. Both the rack and the pinion (exhibiting sounder engineering judgment than our friend Leonard) decided they had better things to do than stay attached to the vehicle, which continued on just fine without them.



In short order, Weird Leonard found himself slightly airborne and unable to steer the vehicle, rack-and-pinion or no rack-and-pinion. While the brakes at this point were, for countless reasons, mathematically unable to stop the flying rocket car, a nearby cliff wall was more than willing to oblige. Thus ends the sad tale of Weird Leonard—which is, of course, urban legend (fortunately for Leonard, wherever he may be).

The experiment can be charitably described as creative. Many readers will no doubt be tempted to describe it as an utter, tragic failure. Or even ... stupid. Some even say the rocket-engine-enhanced Pacer "bombed," and point to the smoldering wreckage as evidence of the value and importance of systematic studies and rigorous processes.

Regular readers of our articles won't be surprised to learn we disagree with those assessments.

It's Okay to be *Precisely* Wrong

Placing blame for this failure on Weird Leonard's use of intuition is a classic logical fallacy, mistaking correlation for causality. Just because Leonard both trusted his intuition and crashed into the canyon wall doesn't mean one caused the other. Sure, a little math prior to ignition would probably have predicted the error of his ways, but that's beside the point.

At its core, the negative assessment of Leonard's experiment and the determination to disparage and reject intuition is both an unjustified rationalization and a demonstrably weak argument trap put forward by fearful, risk-avoidant bureaucrats who are usually interested in academically studying yesterday's technology today in order to fix an obsolete problem many tomorrows from now. Whatever Leonard's shortcomings, his willingness to listen to his gut wasn't his main error. He may have blinked incorrectly and trusted his gut inappropriately, but that doesn't mean we should all ignore our intuition.

The unstated assumption by Leonard's critics is that if we spend tons of time and money doing complicated math, extensive planning, lengthy strategizing, and generally pursuing certainty, problems won't arise, and we won't end up the way Leonard did. Crashing into the side of a cliff obviously only happens if you neglect due diligence and fly by the seat of your pants. Planning and processes are supposed to prevent all that. The reality is, they don't.

In his book *The Seven-Day Weekend*, maverick CEO Ricardo Semler tells about a conversation he had with the planning director of a major oil company—a man paid enormous sums of money for producing five- and 10-year plans. Semler writes: "I asked him what his five-year plan of five years ago had predicted as the price of a barrel of Brent crude oil for that month. His reply was $38.40, which was interesting since a barrel actually cost $18, less than half his forecast." Ironically, the planning director admitted his *gut instinct* five years ago was that the forecast should have been $28 per barrel—a much closer match to the actual price.

When Semler asked this scientific gentleman how he managed to keep his job despite being so far off the mark, the man answered, "I have the right to be wrong, but only so long as I am *precisely* wrong." In other words, if he trusts his gut and gets it wrong, he'll be fired. But if he makes an exacting, rational prediction, following the industry's best practices, it doesn't matter whether it's right or not.

Everyone involved seems to agree this type of error is not the fault of the computer model or the analyst—it's almost as if they blame nature or the market for not complying with the scientific predictions. We are tempted at this point to write an entire article about the fatal mathematical certainties that led to the *Titanic* disaster, but by now, everyone has probably seen the movie, so we are content to simply mention the *Titanic* in passing.

All too often in this modern scientific age of ours, engineers and forecasters are willing to settle for being wrong as long as they are precisely and scientifically wrong, preferably to several decimal places. They might even claim to be "mathematically correct but operationally wrong" (as the *Titanic* no doubt was), as if that somehow makes up for being operationally wrong. This is logic straight out of *Alice in Wonderland*.

So, was Weird Leonard's project a failure? The engineering answer is, as usual, "It depends." For AMC's Pacer division, it may have been a disappointment because Leonard demonstrated a distinct lack of a future near-term market for the sporty flying Rocket Pacer model. For Leonard himself, it can scarcely be called a success. But perhaps something good did indeed happen on that lonely desert highway. Perhaps the human spirit rose a little higher, and the state of the art advanced.

The thing is, every day, somewhere in America, another Weird Leonard is trusting his intuition and climbing into his own Pacer or Pinto or Gremlin and pushing the fateful ignition button on yet another JATO rocket. The experiment often ends with a big splat against an unfortunately placed cliff, but occasionally a masterpiece is established, forever improving our lives.

Those Magnificent Men

We now move from prehistoric and mythical examples to a few stories that are both modern and historically accurate. If everyone will open his or her copy of Octave Chanute's fascinating book *Progress in Flying Machines*, you can read along.

First published in 1894, this is the book the Smithsonian Institute gave Wilber Wright as he and his brother began their experiments, some 75 years before the first Pacer rolled off AMC's assembly lines. Chanute's book has aged remarkably well and offers a readable and lively recounting of nearly 400 years of failed aviation attempts—a virtual encyclopedia of Weird Leonard's real-life intellectual forefathers.

As *Progress* shows, Weird Leonard was hardly the first aviation pioneer to suffer for his art. The bold pioneers described in Chanute's book put their lives, fortunes, and reputations on the line with breathtaking boldness. A few examples:

J. Degen, a clockmaker from Vienna, had a rather unsuccessful public exhibition of his aircraft in Paris in 1812. Chanute explains, "On the third [unsuccessful] attempt

he was attacked by the disappointed spectators, beaten unmercifully, and laughed at afterwards." (Oh, the humanity!)

Robert Cocking, a professional watercolor artist, "was killed in 1836 in an experiment with a parachute shaped like an inverted umbrella." Later tests determined that the experiment would have worked if the device had been larger and "better constructed."

In 1854, Monsieur Louis Letur of France "performed several evolutions in the air by means of his wings, none of them apparently very conclusive. … The wind carried the apparatus violently against some trees, and poor Letur received injuries which resulted in his death."

In 1874, a Belgian shoemaker named Vincent De Groof was testing a flying apparatus that failed, and "De Groof came down like a stone, and was killed on the spot."

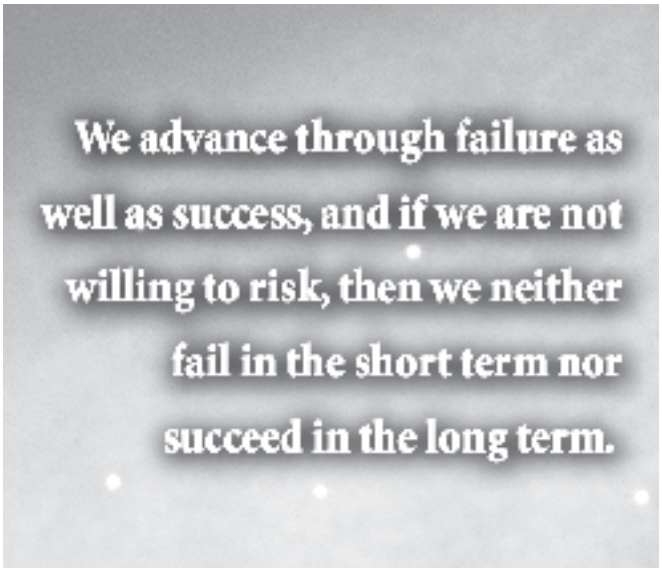
The point of mentioning these fatalities is not to make fun of the dead—rather, we seek to honor their courage, imagination, and sacrifice. While modern engineers might be tempted to suggest these individuals should have stuck to their watercolors and shoemaking, the more salient point is to ask how many of today's experimenters and engineers are willing to take the sort of risks and make the sort of sacrifices seen in days gone by. Of course, nobody wants to be beaten and laughed at by a mob of Parisians, like the unfortunate clockmaker Herr Degen, but sometimes that or something much like it is what it takes to succeed. Keeping your feet on the ground might be a good way to stay safe, but you'll never actually fly unless you try to take to the air.

Weird Leonard, Degen, Letur, De Groof, and the like are at the extreme end of the spectrum, and the loss of their lives is regrettable. But in this strange and savage new century, can we really afford to go the way of the risk-avoidant do-nothing who never aims high? Shall we simply curl up in a guarded fetal position, preferring not to risk anything, however small, and rejecting the possibility of gaining big dividends? Shall we rely solely on endless studies and ignore our intuition?

On page 218 of Chanute's book, we read about another of the original Weird Leonards, albeit more successful than those we have seen so far:

"If there be one man, more than another, who deserves to succeed in flying through the air, that man is Mr. Laurence Hargrave, of Sydney, New South Wales. He has now constructed with his own hands no less than 18 flying machines of increasing size, all of which fly."

Mr. Hargrave's small flying machines were driven by rubber bands or compressed air or steam engines (which



caused him "considerable trouble," according to Chanute). With remarkable humility and good humor, Hargrave acknowledged in a letter: "The people of Sydney who can speak of my work without a smile are very scarce."

Despite being treated as a punch line by his community, Hargrave persisted. One of his most significant accomplishments was his demonstration that "for a wing to lift and move through air efficiently, the center of pressure ought to be located at about 25% of the chord length of the wing section." The machine depicted in Chanute's book was "actuated by compressed air and propelled by beating wings." It weighed a little over 4 pounds and flew 343 feet in 1890. His "man-lifting kites" were even more impressive.

Who's weird now?

The Risk of Not Being Risky

To humor the distinguished bureaucratic process and study mavens, let us take a step back and seriously evaluate the output of ignoring intuition, relying on deliberate scientific methods, and generally not being risky. We might consider this an informal (intuitive!) study of the value of studies, rigorous processes, and other things that can often take millions of dollars and many years to accomplish. (Note: We have yet to identify a rigorous study of the value of studies, but we would love to see the results if such a study exists.)

Well, there are some great short-term positives associated with being risk-avoidant. Long and rigorous studies are quite good at establishing short-lived successes (New Coke or Vanilla Ice's hit, "Ice, Ice, Baby"). On the other hand, the intuition-rich approach is largely responsible for rapidly producing long-term impacts, such as the Declaration of Independence or the U. S. Constitution. Sadly, modern organizations have a tendency to focus on and reward the

You're the Judge

See no evil, hear no evil, speak no evil

The cast of characters: Michael Rzeplinski served as a programs director for the General Services Administration and as a supervisory engineer for the U.S. Army. Connie Davidson was a GSA employee who lived with Rzeplinski. Kirsten Davidson is Connie's daughter.

Rzeplinski recommended that a GSA IT-related services task order be awarded to PCC Technology Group, Inc. He asked PCC Technology Group to hire Kirsten to perform computer-related work under his direction. Connie Davidson was appointed to be the assistant contracting officer's representative on the task order awarded to PCC.

The company did hire Kirsten, but she performed no work. Between January 2003 and October 2005, PCC was paid approximately $555,710 on this contract and on a separate GSA contract as a subcontractor for work that Kirsten never performed.

Rzeplinski caused PCC to hire a company called RZED Engineering Services (ZED) as a subcontractor. ZED was a sole proprietorship controlled by Rzeplinski. From June 2002 to October 2005, PCC mailed monthly checks in the amounts of $4,000 to $4,500 to Rzeplinski, who received a total of $151,500; however, ZED never performed any work as a subcontractor.

If, like Sgt. Schultz in the TV series *Hogan's Heroes*, whose refrain was "I see nothing," you turn your back on a crime, do you get a free pass when the crime is discovered? Is there a crime involved if you do not perform any work?

Clearly Rzeplinski violated several laws, and he was sentenced to 46 months in prison and ordered to pay $862,710 in restitution.

Did Connie Davidson (assigned as assistant contracting officer's representative, whose duties include verifying vouchers) and Kirsten Davidson (who received payment but did not actually perform any work) commit any crimes?

Verdict on page 34.

short-term blip over the long-term breakthrough, and as the axiom goes, "You get what you reward."

The exploits and accomplishments Chanute documents in *Progress In Flying Machines* include not only the bold and foolish but also the timid and inactive. One such is Count D'Esterno of France, who, despite being quite intelligent and accomplished, put forward a proposal that "was generally laughed at as an evidence of mild lunacy."

Chanute goes on to explain that the count, apparently taking the mockery to heart, did not build the apparatus he proposed, and wistfully concludes, "He might have tried a number of valuable experiments which, if they did not result in success (as they probably would not), might yet have greatly advanced the fund of knowledge upon this intricate subject." We advance through failure as well as success, and if we are not willing to risk, then we neither fail in the short term nor succeed in the long term.

Making a mistake as a leader is hard. A leader making any decision and making it quickly may indeed fail spectacularly, but one who doesn't make a decision because of analysis paralysis doesn't accomplish success *or* failure—and that is its own type of failure. If we want to enjoy long-term success, we should expect to fail on a regular basis, whether using intuitive decision-making or not.

Despite Gladwell's popularity, intuitive decision-making is not likely to be widely accepted within our formal organizations any time soon, at least not to the same degree as traditional, formal, rationalistic, and slow decision processes (however flawed). In fact, *Blink* itself illustrates many of the pitfalls and shortcomings inherent in intuitive decision-making and doesn't deny the existence of intuitive errors.

However, we are content to make intuitive errors anyway in the comfort and knowledge that mistakes would have been made in any case, and by using intuition, we are saving both time and money while advancing our technical and operational capability advantage in the long term.

The bottom line: Decision making is messy and uncertain, regardless of the approach or process. It requires creativity, courage, and intuition, along with solid math skills. With all the Weird Leonards throughout history, we seek to press forward and determine, in the words of Octave Chanute, "in what manner if any the many failures which I have described can be made to subserve eventual success."

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