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Introduction — The High Price of Hope

The Lake That Would Not Drain

The lake had outlived everyone who ever tried to kill it.

The Fucine was the third-largest lake in Italy, and one of the most treacherous: it sat in a mountain basin with no natural outlet, so it rose and fell with the snowmelt, drowning the farms along its shore one decade and stranding them in malarial mud the next. The people who lived around it had wanted it gone for centuries. Julius Caesar is said to have dreamed of draining it. Augustus considered the project and declined — too expensive, he judged, for too uncertain a return, a single sentence of imperial restraint that may be the most quietly heroic act of project management in this entire book. And then, in the year 41 of the common era, the task fell to Claudius — the stammering, limping, scholarly emperor whom no one had expected to rule and whom history has generally underestimated — and Claudius said yes.

What followed was a magnificent failure. Thirty thousand men — soldiers, slaves, and convicts — spent eleven years driving a tunnel nearly six kilometers through the solid rock of Monte Salviano, sinking shafts forty meters deep so that crews could dig toward one another in the dark by the light of oil lamps. When it was finished, it was the longest tunnel human beings had ever constructed, and it would hold that record for eighteen hundred years. Claudius staged a spectacle to celebrate: a mock naval battle on the doomed lake, thousands of condemned men hacking at each other on the water while the court watched from the hills. Then the sluices were opened, the water began to move — and the tunnel choked. It had been built too narrow, too shallow, graded wrong; it could not carry the volume, and what it could carry, it silted shut. The lake came back. Crews patched and re-dug for decades; the emperor Hadrian tried again a century later; the silt always won. The Fucine outlived Claudius, outlived the Roman Empire and every successor state, and was not successfully drained until the 1870s, when an Italian

banker, using steam pumps and a private fortune, finally finished what thirty thousand Romans could not.

I want to begin with this lake and this tunnel because they pose the question that this entire book is built to ask, and they do so in its purest form. The obvious question about the Fucine tunnel is *what went wrong* — and historians have answered it well enough: imperial vanity, impossible engineering tolerances, an organization with no mechanism to say stop. But that is not the interesting question, and it is not this book's question. This book asks something the people who dug the tunnel never asked out loud, and that almost no one in the long history of human folly ever seems to ask in time:

What else could thirty thousand men have built in eleven years?

We do not have to guess. In that very same decade, the same empire, drawing on crews of the same size and skill, completed two great aqueducts — the Aqua Claudia and the Anio Novus — that carried fresh water into Rome and went on serving the city for centuries. The labor that drowned in the Fucine mud could have done that. It is, in fact, exactly the kind of thing it did when it was pointed at the living world instead of at an emperor's whim. The tunnel and the aqueducts were built by the same hands, in the same years, for the same kind of money. One of them is one of history's most expensive failures. The other nourished a civilization, and the difference between them is the subject of this book.

The Ledger Nobody Keeps

Humanity has always kept careful accounts of its triumphs. We remember the pyramids that stand, the cathedrals that hold, and the rockets that reached the Moon. We teach our children the names of the things that worked. What we do not keep — what no civilization has ever systematically kept — is the other ledger: the account of what our greatest efforts *cost*, and of what those same efforts might have built instead. We file our failures under "interesting" and move on, and in moving on, we throw away the most valuable thing the failures could teach us.

This book is an attempt to keep that ledger. It is a double-entry account of some of the largest deliberate misallocations of human effort in recorded history — the tombs and

fleets and canals and bubbles and machines into which people poured staggering quantities of labor, treasure, and life in pursuit of goals that were never achieved. And it is built around a single accounting principle that I will apply to every case in these pages, because it is the principle that turns a catalogue of disasters into an argument. Every entry has two columns. In the first, the *debit*: what was actually spent — the money, yes, but more fundamentally the human effort, measured in a unit I will return to constantly, the *person-year*, a single human being's labor for a single year, the irreducible atom of what any society has to spend. And in the second column, the one that matters and that almost no history bothers to fill in, the *credit*: a real, achievable thing of comparable cost that the same resources could have produced instead. The road not taken. The aqueduct that was not built because the tunnel was.

A word about that unit, the person-year, because the choice is deliberate and it runs through everything. Most histories of grand folly are written in money, and money is treacherous across centuries — currencies debase, prices shift, a Roman sesterce and a Victorian pound and a modern dollar cannot be cleanly compared, and this book will wrestle honestly with that problem wherever money is the measure. But beneath the money, in every case, is the thing money is only a token for: human time and human capability, the finite working years of actual people. When you strip away the fluctuating coin and ask how much *human life* a project consumed, the comparisons across the centuries suddenly become possible, and they become devastating. The First Emperor of China spent the better part of three-quarters of a million people across nearly four decades on his tomb. A digital-currency boom of our own century absorbed a measurable slice of a generation's most capable engineers. Those two sentences describe the same kind of waste, twenty-two centuries apart, in the same currency — and that currency is not dollars. It is lives, and the years of lives.

Why We Keep Doing This

Read enough of these cases, as I have, and a strange thing happens: the differences between them — the centuries, the cultures, the technologies — begin to fall away, and a small number of recurring shapes emerge, the same handful of patterns appearing again and again in costumes that change while the body underneath stays the same. This book

is organized around five of them — with a sixth, different in kind from the rest, held back for the capstone at the book's end. The first five are worth naming at the outset, because once you can see them you will not be able to stop seeing them, in history and in the morning's news alike.

The first is *political and competitive signaling* — the project whose true purpose is not the stated goal but the demonstration of the greatness of the people pursuing it. The tomb built to prove an emperor's divinity, the cathedral built to out-soar a rival town, the fleet built to legitimize a usurper, the data center built so that no competitor can claim the future first. The connection between such projects and any actual human benefit is often incidental, and sometimes absent.

The second is *sunk-cost escalation* — the deepest and most human of the patterns, the moment when continuing a doomed venture becomes a function of what has already been spent rather than what remains to be gained. It is the canal company that converts to a workable design only when bankruptcy makes the alternative immediate rather than eventual; the rocket program that answers four explosions with a fifth attempt; the founder who cannot, at thirty, declare impossible the thing she staked her identity on at nineteen.

The third is *institutional enablement* — the failure, or capture, of the systems that exist precisely to say no. The bought newspapers that should have warned, the bribed legislators who should have refused, the auditors who did not exist, the board of statesmen who lent their credibility in place of the scrutiny they were there to provide. In nearly every case in this book, the warning was sounded — and the machinery that should have carried it was broken or paid to look away.

The fourth is *technological and intellectual overreach* — the assumption that a thing which works at one scale will keep working at a greater one. The sea-level canal that succeeded in the flat desert of Suez and was carried, like a key to the wrong house, to the mountains and fevers of Panama. The engine that runs alone and is bolted thirty-fold into a machine no one can test. The blood test that works on a vial and is sold as working on a drop. Scale is not free; the rules change as the magnitude grows, and the edge of the possible is generally discovered by falling off it.

And the fifth is the one that contains the others and that this book returns to in its final pages: *the warning ignored* — not because warnings were absent, but because the systems and the people in charge had arranged their incentives so that hearing the warning had become more expensive than not hearing it. In case after case, the catastrophe was visible years in advance, named clearly by qualified people, and overridden, because the project had become an identity to defend rather than a hypothesis to test. And if that sounds like a disease of emperors and engineers, look up from the page: it is the daily condition of a public life in which beliefs have become badges of belonging, in which conceding a point to the other side feels like betraying one's own, and in which the warning, however true and however well sourced, is discounted the instant it's issued from the wrong tribe. The pattern that drowned the Fucine tunnel now runs our discourse.

There is a finding underneath all of them, and it is the hardest thing the research has to say: across these cases, the overwhelming share of the waste traces not to bad luck or unforeseeable circumstance but to *structural overconfidence* — to failures that were, in the cold light of the evidence available at the time, foreseeable and foreseen. We are not, mostly, undone by the unknowable. We are undone by our unwillingness to look at what we already know.

How I Came to Keep This Ledger

I should say, before we go further, how I came to be keeping this particular ledger. For several years I have co-hosted a podcast about technology — about the people who build it, break it, and exploit it — and we spent a great many of those episodes on a category of effort that unsettled us the more we looked at it: work of extraordinary sophistication aimed at almost nothing. Ransomware written by programmers who could have built anything. Cryptocurrency ventures that drew in physicists, cryptographers, and the most capable engineers of a generation and pointed them at the manufacture of tokens. We needed a name for the shape we kept circling, and the one that stuck was wasted utility — not money lost, which the world already tracks obsessively, but human capability spent on the unproductive: the finite working years of brilliant people poured into work that left the world no better than it found it.

It was a phrase about the present when we landed on it. What surprised me was how far back it reached. The same shape that explained a crypto boom explained a Soviet moon rocket, a French canal, an emperor's tomb; the costume changed and the body underneath did not. This book began as an attempt to follow the phrase backward as far as the record would allow — and it ends, deliberately, where it started, in the present, with two entries I cannot yet close: the cryptocurrency mania that first made me ask the question, and the trillion-dollar wager on artificial intelligence that inherited its talent and its certainty. You will reach those final chapters knowing what I did not when the podcast first circled this idea, and what I cannot fully know even now — how they turn out.

What This Book Is, and Is Not

A few honest cautions before we begin, because a book about other people's overconfidence has a special obligation not to be overconfident itself.

This is not a book that argues human beings should stop attempting great things. The opposite, in fact. The same drive that built the Fucine tunnel built the aqueducts; the same ambition that produced the follies in these pages produced the cathedrals that stand, the canals that work, the vaccines, the moon landings, and the genuine wonders of our species. The capacity to build greatly and the capacity to waste greatly are not opposites — they are the same capacity, housed in the same people, and you cannot suppress one without crippling the other. This book is not an argument for timidity. A civilization that makes no bold bets builds nothing worth remembering.

Nor is it a book of perfect hindsight wisdom, the smug after-the-fact tut-tutting that treats every failure as obvious and every participant as a fool. The people in these pages were, in the main, not fools. They were often the most capable people of their age — brilliant engineers, gifted financiers, sincere believers, visionaries who were right about the destination and wrong only about the road or the timing or their own limits. I have tried throughout to take their intelligence seriously, because the comfortable belief that only fools cause catastrophes is precisely the belief that lets the rest of us walk into the next one. If the smart and the sincere did these things, then being smart and sincere is no protection, and that is the whole point.

And it is not a book that pretends the ledger always balances cleanly against the waste. Some of these cases are genuinely ambiguous; at least one — a great machine abandoned half-built in the Texas earth — may be a case not of reaching too far but of giving up too soon, and I have tried to say so. One of the manias in these pages built, amid all its ruin, an infrastructure that served a nation for a century, and I have tried to weigh that honestly too. The world is not a morality play, and the cases that resist the thesis are the ones I have found most worth keeping, because they are where the thinking actually happens.

What this book *is* is a journey — a chase through more than two thousand years and across four continents, in the company of the dreamers and schemers and ordinary people who poured everything into the wrong thing, told as the human stories they were, and measured by an accounting nobody thought to keep. It travels in four parts. The first concerns *monuments to power*, the tombs, cathedrals, and fleets built to glorify the people who built them. The second concerns *the manias*, the strange recurring madness in which whole populations, freely and without compulsion, pour their savings into a rising price and call it the future. The third concerns *engineering hubris*, the great modern projects undone by the overreach of experts. The fourth concerns *the modern mirage*, the disasters of our own era, and the ledgers that cannot yet be closed — the bets we are making, right now, with the verdict still out. And the book ends on a capstone — a sixth pattern, set apart from the other five because it belongs to a different and more uncomfortable category: not the waste born of greed or vanity or hubris, but the waste born of *virtue* — the sincere moral crusade against a real evil that ends up costing more than the evil ever did. It is the one pattern in these pages that points not at history's villains but at its reformers, which is to say at the best of us, which is to say at you.

The lake is where it begins, because the lake asks the question. Thirty thousand men, eleven years, a tunnel that failed — and an aqueduct, built by the same hands in the same decade, that did not. The whole of this book lives in the space between those two outcomes, and in the single discipline that might, even now, help us choose the second over the first: the discipline of keeping the second column. Of asking, before the labor of

millions and the wealth of nations is committed, the question Augustus asked about this very lake, and almost no one in these pages ever asks in time.

What else could this be?

We keep betting big and losing bigger. This is the account of what it has cost us — and of what, if we are willing to look, we might have had instead.