The Dragon Of Age

Did Some Editing Myself → From Nick Bostrom’s: The Dragon Tyrant

Once upon a time, the planet was tyrannized by a giant dragon. Its red eyes glowed with hate, and from its terrible jaws flowed a constant stream of evil-smelling yellowish-green slime. It demanded from humankind a blood-curdling tribute: to satisfy its enormous appetite, one hundred and fifty thousand men and women had to be delivered every evening at the onset of darkness to the foot of the mountain where the dragon-tyrant lived. Sometimes the dragon would devour these unfortunate souls upon arrival; sometimes, it would lock them up in the mountain where they would wither away for months or years before eventually being consumed.

The misery inflicted by the dragon-tyrant was incalculable. In addition to the hundred and fifty thousand gruesomely slaughtered each day, there were the mothers, fathers, wives, husbands, children, and friends that were left behind to grieve the loss of their departed loved ones.

Some people tried to fight the dragon, but whether they were brave or foolish was difficult to say. Seeing that defeating the tyrant was impossible, humans had no choice but to obey its commands and pay the grisly tribute. The fatalities selected were always elders. Although senior people were as vigorous and healthy as the young, and sometimes wiser, the thinking was that they had at least already enjoyed a few decades of life. The wealthy might gain a brief reprieve by bribing the press gangs that came to fetch them, but by constitutional law, nobody, not even the king himself, could put off their turn indefinitely.

Spiritual men sought to comfort those who were afraid of being eaten by the dragon (which included almost everyone, although many denied it in public) by promising another life after death, a life that would be free from the dragon-scourge. Other orators argued that the dragon has its place in the natural order and a moral right to feed. They said that it was part of the very meaning of being human to end up in the dragon's stomach. Others still maintained that the dragon was suitable for the human species because it kept the population size down. To what extent these arguments convinced the worried souls is not known. Most people tried to cope by not thinking about the grim end that awaited them.

For many centuries this desperate state of affairs continued. Expectations had gradually adjusted, and the dragon-tyrant had become a fact of life. Given the evident futility of resistance, attempts to kill the dragon had ceased. Instead, efforts now focused on deeming the dragon's stomach not so terrible and extending the period before the dragon wanted to eat them.

The king employed servants in large numbers to administer the tribute. Registrars kept track of the people sent away. Some people-collectors dispatched prestigious dragon fodder in special carts. Clerks gave pensions to the decimated families who were no longer able to support themselves.

There was, moreover, a cadre of dragonologists who studied how these logistic processes could be made more efficient. Some dragonologists also conducted studies of the dragon's physiology and behavior and collected samples – its shed scales, the slime that drooled from its jaws, its lost teeth, and its excrements, which were speckled with fragments of human bone. All these items were painstakingly annotated and archived.

To finance all these activities, the king levied heavy taxes on his people. Dragon-related expenditures, already accounting for one-seventh of the economy, we're growing even faster than the dragon itself.

Humanity is a curious species. Every once in a while, somebody gets a good idea. Others copy the idea, adding to it their own improvements. Over time, many wondrous tools and systems are developed. Some of these devices – calculators, thermometers, microscopes, and the glass vials that the chemists use to boil and distill liquids – serve to make it easier to generate and try out new ideas, including ideas that expedite the process of idea-generation.

Thus the great wheel of invention, which had turned at an almost imperceptibly slow pace in the older ages, gradually began to accelerate.

Sages predicted that a day would come when technology would enable humans to fly and do many other astonishing things. One of the sages, who was held in high esteem by some of the other sages but whose eccentric manners had made him a social outcast and recluse, went so far as to predict that technology would eventually make it possible to build a contraption that could kill the dragon-tyrant.

The king's scholars, however, dismissed these ideas. They said that humans were far too heavy to fly and, in any case, lacked feathers. And as for the impossible notion that the dragon-tyrant could be killed, history books recounted hundreds of attempts to do just that, not one of which had been successful.

Meanwhile, the wheel of invention kept turning. Mere decades later, humans did fly and accomplished many other astonishing things.

A few iconoclastic dragonologists began arguing for a new attack on the dragon-tyrant. Killing the dragon would not be easy, they said, but if some material could be invented that was harder than the dragon's armor, and if this material could be fashioned into some kind of projectile, then maybe the feat would be possible.

A group of several eminent engineers and dragonologists sent a petition to the king asking for funding to build the anti-dragon projectile. At the time when the petition was sent, the king was preoccupied with leading his army into war against a tiger. The tiger had killed a farmer and subsequently disappeared into the jungle. There was widespread fear in the countryside that the tiger might come out and strike again. The king had the jungle surrounded and ordered his troops to begin slashing their way through it. At the conclusion of the campaign, the king announced that all 163 tigers in the jungle, including presumably the murderous one, had been hunted down and killed. During the tumult of the war, however, the petition had been lost or forgotten.

The petitioners, therefore, sent another appeal. This time they received a reply from one of the king's secretaries saying that the king would consider their request after he was done reviewing the annual dragon-administration budget. This year's budget was the largest to date and included funding for a new railway track to the mountain. A second track was deemed necessary, as the original track could no longer support the increasing traffic. When the budget was finally approved, however, reports were coming from a remote part of the country that a village was suffering from a rattlesnake infestation. The king had to leave urgently to mobilize his army and ride off to defeat this new threat. The anti-dragonists' appeal was filed away in a dusty cabinet in the castle basement.

The anti-dragonists met again to decide what was to be done. The debate was animated and continued long into the night. It was almost daybreak when they finally resolved to take the matter to the people. Over the following weeks, they traveled around the country, gave public lectures, and explained their proposal to anyone who would listen. At first, people were skeptical. They had been taught in school that the dragon-tyrant was invincible and that the sacrifices it demanded had to be accepted as a fact of life. Yet when they learnt about the new composite material and about the designs for the projectile, many became intrigued. In increasing numbers, citizens flocked to the anti-dragonist lectures. Activists started organizing public rallies in support of the proposal.

When the king read about these meetings in the newspaper, he summoned his advisors and asked them what they thought about it. They informed him about the petitions that had been sent but told him that the anti-dragonists were troublemakers whose teachings were causing public unrest. It was much better for the social order, they said, that the people accepted the inevitability of the dragon-tyrant tribute. The dragon-administration provided many jobs that would be lost if the dragon was slaughtered. There was no known social good coming from the conquest of the dragon. In any case, the king's coffers were currently nearly empty after the two military campaigns and the funding set aside for the second railway line. The king, who was at the time enjoying great popularity for having vanquished the rattlesnake infestation, listened to his advisors' arguments but worried that he might lose some of his popular support if was seen to ignore the anti-dragonist petition. He therefore decided to hold an open hearing. Leading dragonologists, ministers of the state, and interested members of the public were invited to attend.

The meeting took place on the darkest day of the year, just before the Christmas holidays, in the largest hall of the royal castle. The hall was packed to the last seat, and people were crowding in the aisles. The mood was charged with an earnest intensity normally reserved for pivotal wartime sessions.

After the king had welcomed everyone, he gave the floor to the leading scientist behind the anti-dragonist proposal, a woman with a serious, almost stern expression on her face. She proceeded to explain in clear language how the proposed device would work and how the requisite amount of the composite material could be manufactured. Given the requested amount of funding, it should be possible to complete the work in fifteen to twenty years. With an even greater amount of funding, it might be possible to do it in as little as twelve years. However, there could be no absolute guarantee that it would work. The crowd followed her presentation intently.

Next to speak was the king's chief advisor for morality, a man with a booming voice that easily filled the auditorium:

"Let us grant that this woman is correct about science and that the project is technologically possible, although I don't think that has actually been proven. Now she desires that we get rid of the dragon. Presumably, she thinks she's got the right not to be chewed up by the dragon. How willful and presumptuous. The finitude of human life is a blessing for every individual, whether he knows it or not. Getting rid of the dragon, which might seem like such a convenient thing to do, would undermine our human dignity. The preoccupation with killing the dragon will deflect us from realizing more fully the aspirations to which our lives naturally point, from living well rather than merely staying alive. It is debasing, yes debasing, for a person to want to continue his or her mediocre life for as long as possible without worrying about some of the higher questions about what life is to be used for. But I tell you, the nature of the dragon is to eat humans, and our own species-specific nature is truly and nobly fulfilled only by getting eaten by it..."

The audience listened respectfully to this highly decorated speaker. The phrases were so eloquent that it was hard to resist the feeling that some deep thoughts must lurk behind them, although nobody could quite grasp what they were. Surely, words coming from such a distinguished appointee of the king must have profound substance.

The speaker next in line was a spiritual sage who was widely respected for his kindness and gentleness as well as for his devotion. As he strode to the podium, a small boy yelled out from the audience: "The dragon is bad!"

The boy's parents turned bright red and began hushing and scolding the child. But the sage said, "Let the boy speak. He is probably wiser than an old fool like me."

At first, the boy was too scared and confused to move. But when he saw the genuinely friendly smile on the sage's face and the outreached hand, he obediently took it and followed the sage up to the podium. "Now, there's a brave little man," said the sage. "Are you afraid of the dragon? "

"I want my granny back," said the boy.

"Did the dragon take your granny away?"

"Yes," the boy said, tears welling up in his large frightened eyes. "Granny promised that she would teach me how to bake gingerbread cookies for Christmas. She said that we would make a little house out of gingerbread and little gingerbread men that would live in it. Then those people in white clothes came and took Granny away from the dragon… The dragon is bad and it eats people… I want my Granny back!"

At this point, the child was crying so hard that the sage had to return him to his parents.

There were several other speakers that evening, but the child's simple testimony had punctured the rhetorical balloon that the king's ministers had tried to inflate. The people were backing the anti-dragonists, and by the end of the evening, even the king had come to recognize the reason and the humanity of their cause. In his closing statement, he simply said: "Let's do it!"

As the news spread, celebrations erupted in the streets. Those who had been campaigning for the anti-dragonists toasted each other and drank to the future of humanity.

The next morning, a billion people woke up and realized that their turn to be sent to the dragon would come before the projectile would be completed. A tipping point was reached. Whereas before, active support for the anti-dragonist cause had been limited to a small group of visionaries, it now became the number one priority and concern on everybody's mind. The abstract notion of "the general will" took on an almost tangible intensity and concreteness. Mass rallies raised money for the projectile project and urged the king to increase the level of state support. The king responded to these appeals. In his New Year address, he announced that he would pass an extra appropriations bill to support the project at a high level of funding; additionally, he would sell off his summer castle and some of his land and make a large personal donation. "I believe that this nation should commit itself to achieving the goal, before this decade is out, of freeing the world from the ancient scourge of the dragon-tyrant."

Thus started a great technological race against time. The concept of an anti-dragon projectile was simple, but to make it a reality required solutions to a thousand smaller technical problems, each of which required dozens of time-consuming steps and missteps. Test-missiles were fired but fell dead to the ground or flew off in the wrong direction. In one tragic accident, a wayward missile landed on a hospital and killed several hundred patients and staff. But there was now a real seriousness of purpose, and the tests continued even as the corpses were being dug out from the debris.

Despite almost unlimited funding and round-the-clockwork by the technicians, the king's deadline could not be met. The decade concluded, and the dragon was still alive and well. But the effort was getting closer. A prototype missile had been successfully test-fired. Production of the core, made of the expensive composite material, was on schedule for its completion to coincide with the finishing of the fully tested and debugged missile shell into which it was to be loaded. The launch date was set to the following year's New Year's Eve, exactly twelve years after the project's official inauguration. The best-selling Christmas gift that year was a calendar that counted down the days to time zero, the proceeds going to the projectile project.

The king had undergone a personal transformation from his earlier frivolous and thoughtless self. He now spent as much time as he could in the laboratories and the manufacturing plants, encouraging the workers and praising their toil. Sometimes he would bring a sleeping bag and spend the night on a noisy machine floor. He even studied and tried to understand the technical aspects of their work. Yet he confined himself to giving moral support and refrained from meddling in technical and managerial matters.

The last day of the year was cold and overcast, but there was no wind, which meant good launch conditions. The sun was setting. Technicians were scuttling around, making the final adjustments and giving everything one last check. The king and his closest advisors were observing from a platform close to the launch pad. Further away, behind a fence, large numbers of the public had assembled to witness the great event. A large clock was showing the countdown: fifty minutes to go.

An advisor tapped the king on the shoulder and drew his attention to the fence. There was some tumult. Somebody had apparently jumped the fence and was running towards the platform where the king sat. Security quickly caught up with him. He was handcuffed and taken away. The king turned his attention back to the launch pad, and to the mountain in the background. In front of it, he could see the dark slumped profile of the dragon. It was eating.

Some twenty minutes later, the king was surprised to see the handcuffed man reappearing a short distance from the platform. His nose was bleeding, and he was accompanied by two security guards. The man appeared to be in a frenzied state. When he spotted the king, he began shouting at the top of his lungs: "The last train! The last train! Stop the last train!"

"Who is this young man?" said the king. "His face seems familiar, but I cannot quite place him. What does he want? Let him come up."

The young man was a junior clerk in the ministry of transportation, and the reason for his frenzy was that he had discovered that his father was on the last train to the mountain. The king had ordered the train traffic to continue, fearing that any disruption might cause the dragon to stir and leave the open field in front of the mountain where it now spent most of its time. The young man begged the king to issue a recall-order for the last train, which was due to arrive at the mountain terminal five minutes before time zero.

"I cannot do it," said the king, "I cannot take the risk."

"But the trains frequently run five minutes late. The dragon won't notice! Please!"

The young man was kneeling before the king, imploring him to save his father's life and the lives of the other thousand passengers onboard that last train.

The king looked down at the pleading, bloodied face of the young man. But he bit his lip, and shook his head. The young man continued to wail even as the guards carried him off the platform: "Please! Stop the last train! Please!"

The king stood silent and motionless, until, after a while, the wailing suddenly ceased. The king looked up and glanced over at the countdown clock: 30 seconds remaining

As a ball of fire enveloped the launch pad and the missile shot out, the spectators instinctively rose to the tips of their toes, and all eyes fixated at the front end of the white flame from the rocket's afterburners heading towards the distant mountain. The masses, the king, the low and the high, the young and the old, it was as if at this moment they shared a single awareness, a single conscious experience: that white flame, shooting into the dark, embodying the human spirit, its fear and its hope… striking at the heart of evil. The silhouette on the horizon tumbled, and fell. Thousand voices of pure joy rose from the assembled masses, joined seconds later by a deafening drawn-out thud from the collapsing monster as if the Earth itself was drawing a sigh of relief. After centuries of oppression, humanity at last was free from the cruel tyranny of the dragon.

The joy cry resolved into a jubilating chant: "Long live the king! Long live us all!" The king's advisors, like everybody that night, were as happy as children; they embraced each other and congratulated the king: "We did it! We did it!"

But the king answered in a broken voice: "Yes, we did it, we killed the dragon today. But damn, why did we start so late? This could have been done five, maybe ten years ago! Millions of people wouldn't have had to die."

The king's advisors said, "Sir, we have completed it now, and the millions who will die in the next years are saved because of our work. We can only move forward and be grateful for where we are. There are many who worked non-stop till their visit to the dragon, hoping to not have to visit him. These people may not have saved themselves, but they saved countless others and countless human suffering, and they will be immortal in our remembrance and thanks to them."

The king realized this to be true, stepped off the platform, walked up to the young man in handcuffs, who was sitting on the ground, and fell down on his knees. "Forgive me! Oh my God, please forgive me! I am so sorry about your father," said the king.

"It's not your fault," replied the young man. "Do you remember twelve years ago in the castle? That crying little boy who wanted you to bring back his grandmother – that was me. I didn't realize then that you couldn't possibly do what I asked for. Today I wanted you to save my father. Yet it was impossible to do that now, without jeopardizing the launch. But you have saved my life, and my mother and my sister. How can we ever thank you enough for that?"

"Listen to them," said the king, gesturing towards the crowds. "They are cheering me for what happened tonight. But the hero is you. You cried out. You rallied us against evil." The king signaled a guard to come and unlock the handcuffs. "Now, go to your mother and sister. You and your family shall always be welcome at the court, and anything you wish for – if it be within my power – shall be granted."

The young man left, and the royal entourage, huddling in the downpour, accumulated around their monarch who was still kneeling in the mud. Amongst the fancy couture, which was being increasingly ruined by the rain, a bunch of powdered faces expressed a superposition of joy, relief, and discombobulation. So much had changed in the last hour: the right to an open future had been regained, a primordial fear had been abolished, and many a long-held assumption had been overturned. Unsure now about what was required of them in this unfamiliar situation, they stood there tentatively, as if probing whether the ground would still hold, exchanging glances, and waiting for some kind of indication.

Finally, the king rose, wiping his hands on the sides of his pants.

"Your majesty, what do we do now?" ventured the most senior courtier.

"My dear friends," said the king, "we have come a long way… yet our journey has only just begun. Our species is young on this planet. Today we are like children again. The future lies open before us. We shall go into this future and try to do better than we have done in the past. We have time now – time to get things right, time to grow up, time to learn from our mistakes, time for the slow process of building a better world, and time to get settled in it. Tonight, let all the bells in the kingdom ring until midnight, in remembrance of our dead forebears, and then after midnight, let us celebrate till the sun comes up. And in the coming days… I believe we have some reorganization to do!"

MORAL

Stories about aging have traditionally focused on the need for graceful accommodation. The recommended solution to diminishing vigor and impending death was resignation coupled with an effort to achieve closure in practical affairs and personal relationships. Given that nothing could be done to prevent or retard aging, this focus made sense. Rather than fretting about the inevitable, one could aim for peace of mind.

Today we face a different situation. While we still lack effective and acceptable means for slowing the aging process[1], we can identify research directions that might lead to the development of such means in the foreseeable future. "Death" stories and ideologies, which counsel passive acceptance, are no longer harmless sources of consolation. They are fatal barriers to urgently needed action.

Many distinguished technologists and scientists tell us that it will become possible to retard, and eventually halt and reverse, human senescence.[2] At present, there is little agreement about the time-scale or the specific means, nor is there a consensus that the goal is even achievable in principle. In relation to the fable (where aging is, of course, represented by the dragon), we are therefore at a stage somewhere between that at which the lone sage predicted the dragon's eventual demise and that at which the iconoclast dragonologists convinced their peers by demonstrating a composite material that was harder than dragon scales.

The ethical argument that the fable presents is simple: There are obvious and compelling moral reasons for the people in the fable to get rid of the dragon. Our situation with regard to human senescence is closely analogous and ethically isomorphic to the situation of the people in the fable with regard to the dragon. Therefore, we have compelling moral reasons to get rid of human senescence.

The argument is not in favor of life-span extension per se. Adding extra years of sickness and debility at the end of life would be pointless. The argument is in favor of extending, as far as possible, the human health-span. By slowing or halting the aging process, the healthy human life span would be extended. Individuals would be able to remain healthy, vigorous, and productive at ages at which they would otherwise be dead.

In addition to this general moral, there are a number of more specific lessons:

(1) A recurrent tragedy became a fact of life, a statistic. In the fable, people's expectations adapted to the existence of the dragon, to the extent that many became unable to perceive its badness. Aging, too, has become a mere "fact of life" – despite being the principal cause of an unfathomable amount of human suffering and death.

(2) A static view of technology. People reasoned that it would never become possible to kill the dragon because all attempts had failed in the past. They failed to take into account accelerated technological progress. Is a similar mistake leading us to underestimate the chances of a cure for aging?

(3) Administration became its own purpose. One seventh of the economy went to dragon-administration (which is also the fraction of its GDP that the U.S. spends on healthcare). Damage-limitation became such an exclusive focus that it made people neglect the underlying cause. Instead of a massive publicly-funded research program to halt aging, we spend almost our entire health budget on health-care and on researching individual diseases.

(4) The social good became detached from the good for people. The king's advisors worried about the possible social problems that could be caused by the anti-dragonists. They said that no known social good would come from the demise of the dragon. Ultimately, however, social orders exist for the benefit of people, and it is generally good for people if their lives are saved.

(5) The lack of a sense of proportion. A tiger killed a farmer. A rhumba of rattlesnakes plagued a village. The king got rid of the tiger and the rattlesnakes, and thereby did his people a service. Yet he was at fault, because he got his priorities wrong.

(6) Fine phrases and hollow rhetoric. The king's morality advisor spoke eloquently about human dignity and our species-specific nature, in phrases lifted, mostly verbatim, from the advisor's contemporary equivalents.[3] Yet the rhetoric was a smokescreen that hid rather than revealed moral reality. The boy's inarticulate but honest testimony, by contrast, points to the central fact of the case: the dragon is bad; it destroys people. This is also the basic truth about human senescence.

(7) Failure to appreciate the urgency. Until very late in the story, nobody fully realized what was at stake. Only as the king was staring into the bloodied face of the young pleading man does the extent of the tragedy sink in. Searching for a cure for aging is not just a nice thing that we should perhaps one day get around to. It is an urgent, screaming moral imperative. The sooner we start a focused research program, the sooner we will get results. It matters if we get the cure in 25 years rather than in 24 years: a population greater than that of Canada would die as a result. In this matter, time equals life, at a rate of approximately 70 lives per minute. With the meter ticking at such a furious rate, we should stop faffing about.

(8) "And in the coming days… I believe we have some reorganization to do!" The king and his people will face some major challenges when they recover from their celebration. Their society has been so conditioned and deformed by the presence of the dragon that a frightening void now exists. They will have to work creatively, on both an individual and a societal level, to develop conditions that will keep lives flourishingly dynamic and meaningful beyond the accustomed three-score-years-and-ten. Luckily, the human spirit is good at adapting. Another issue that they may eventually confront is overpopulation. Maybe people will have to learn to have children later and less frequently. Maybe they can find ways to sustain a larger population by using more efficient technology. Maybe they will one day develop spaceships and begin to colonize the cosmos. We can leave, for now, the long-lived fable people to grapple with these new challenges, while we try to make some progress in our own adventure.[4]