



The Ancients' Tech Anxiety

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With *Gods and Robots*, classicist and historian of science Adrienne Mayor has written what feels like a comprehensive overview of ancient accounts in the West of artificial life and intelligence. When you put all this mostly mythic material together—and Mayor gathers it not just from stories, but from coins and household goods—it represents a substantial and fascinating collection.

Mayor insists that we can and should learn something both from the specifics of these old stories and from the fact that they exist at all. It is indeed noteworthy, as she argues, that the desire to create artificial life and intelligence, or to extend life and enhance human

*Gods and Robots:
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Ancient Dreams of
Technology*
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capacities, long pre-dates any realistic hope of doing so. And yet exactly what the stories teach us is almost entirely unclear in the book. Mayor's project feels more like an exercise in discovering intriguing parallels between modern innovations and ancient dreams than like the more urgent project it hints at: a reflection on how these ancient stories might deepen our understanding of the techno-utopian impulses that drive us today.

Mayor presents her material in lucid prose, with many helpful photographs and illustrations. In the first two chapters, the focus is on stories in which the sorceress Medea plays a central role. One story has to do with Talos the mechanical man, the other with false promises of life extension. The next two chapters explore immortality, eternal youth, and enhanced human powers. There follow one chapter each on the inventive craftsman Daedalus; the sculptor Pygmalion, whose beloved statue of a woman comes to life; Hephaestus, the god of metalworking and craftsmanship; and Pandora, the artificial woman and source of human suffering. The final chapter presents what may be actual instances of ancient automata, and the epilogue briefly discusses what Mayor takes to be some of the big questions raised for us by the material she has presented.

That presentation is rather impressionistic or episodic. The material in each chapter reads, and is laid out, like a loosely connected series of blog posts, with the liberal use of decorative text breaks. References within chapters to future chapters or

chapters past are frequent enough to suggest less than optimal organization of themes, though each chapter mostly stands on its own. A few have a section at or toward the end that is set in two-column format, suggesting it is supplementary, but the principle of selection for this marked-off text is not clear.

As we move from chapter to chapter, we accumulate fascinating information, but the book does not obviously develop an argument about the lessons we might learn from it. Mayor hopes that “rereading those ancient stories might enrich today’s discussions of robotics, driverless cars, biotechnology, AI, machine learning, and other innovations.” And indeed, almost by definition, to find out that thinking about these matters goes back far longer than we might have expected is enriching.

But is that all Mayor hand in mind? The substance of that enrichment is left murky. In the ancient stories, she claims, we find the same “unsettling oscillation between techno-nightmares and grand futuristic dreams” as today. From her own telling, however, it is not clear that this assertion is true, since the myths do not have the for-us-crucial element of progress and projection (“grand futuristic dreams”), nor are they “techno-nightmares” in the sense of our global dystopian visions. But even if this claim were true, it is not clear where Mayor thinks the likeness she suggests gets us. If we share

concerns with the ancients, what does that mean for the often-asserted novelty of the world of modern technology? If we don’t share these concerns, does the difference arise from a shift of moral perspective, a shift in technological capacity, or both?

It is ironic, therefore, that in her chapter on Hephaestus, Mayor recounts that he invented gates for Olympus that opened and closed automatically for the chariots of the gods, whereby he was “anticipating by nearly thirty centuries the automatic garage door.” Unfortunately, this joke, which Mayor quotes from the writer Daniel Mendelsohn, represents a good deal of what she herself has to say. In relation to other myths and inventions, Mayor calls attention to some modern technology they anticipate or are otherwise similar to, some thematically related work of literature or film, some issue they raise—and that is pretty much the end of it.

Take, for example, the first chapter’s concluding discussion of Talos, the robot-like bronze man that Zeus had Hephaestus build to guard Crete for Zeus’ son Minos. This section includes a two-page, double-column segment about American military systems named Talos, including a 1950s surface-to-air missile: “Like Talos ceaselessly circling his territory, spotting and tracking invaders, and then lobbing rocks to destroy foes, the Talos defense system was

automatically directed, but it was partly autonomous at closer range.”

There are also two and a half pages about how the Talos myth could be “an early exploration of the idea that automata might come to desire to be real humans”; how Talos exhibits the “uncanny ‘inbetweenness’ that is

a persistent hallmark of automata”; and how the story “set in motion ancient versions of the knotty questions about how to control automata” and about the moral behavior of such beings. Or again, “the Talos myth embodies age-old questions about what it is to be human and free.”



*Achilles' mother Thetis oversees Hephaestus forging her son's armor
(Pierre Daret, 1604–1678).*

These are all deep issues, and Mayor does not have to stretch the story, or at least not very far, to suggest them. But she does little more than gesture in the direction of these important topics. What does the story teach us about the control of automata? Talos' moral behavior—his guarding of Crete against invaders—could be characterized as a thumotic love of his own. Does the myth mean to support that notion of morality or call it into question?

All too often when Mayor identifies a substantive theme, she does not always know quite what to do with it. Two further instances are noteworthy. She pays a good deal of attention to the fact that the ancient myths exhibit hardly any interest in how the “robots” they mention might actually work. It is as if she finds it strange. Now, on the one hand, one might suggest that this attribute of the stories makes them similar to much of twentieth-century science fiction, where technologies like interstellar drives and time machines are simply assumed. Where not assumed, these technologies are “explained” by techno-babble that may or may not be plausible. What could indeed be quite novel and significant is that this techno-babble, which has in recent decades grown increasingly sophisticated in its attempts to draw on actual science and technology, is thought important at all. Could the modern mythic mind be more interested in questions of “how” than the ancient,

given the intellectual and material preoccupations of today's world? It seems likely. To put it a different way, as far as the available record indicates, the creation of artificial life may be a long-term human aspiration, but that does not necessarily mean that the motives behind thinking about such creation have remained the same.

The question of motives brings us to another crucial missed opportunity. Mayor notes, but hardly lingers to investigate, that in the mythic record there is frequently a link between robot-like beings (or other innovations) and tyrants. Shouldn't this strike us as odd, given that in the modern world successful technical innovations seem more associated with the free world than with tyranny? And yet at the same time not so odd, given how much we worry about authoritarian or totalitarian regimes seeking political advantage by proceeding in “irresponsible” ways with, for example, weapons of mass destruction, potentially dangerous biotechnologies, or electronic surveillance. When this concern is used to argue, on the grounds either of national security or economic competitiveness, that free nations need to “get there first,” does that not put tyrants more or less in the driver's seat of innovation for us as well?

Why would it have seemed natural for ancient authors to associate

technical innovations with tyranny? Consider tyranny in general terms: It appears to be good to be a tyrant because one can gratify all one's desires. It's also obviously bad to be a tyrant because the position is very insecure, requiring constant defense. From the ancient source material Mayor gathers, it is clear that technological innovations occur at the intersection of these two characteristics. The stories involving Minos and his wife Pasiphae—king and queen of Crete—and the court's master craftsman, Daedalus, are a multifaceted example. The ongoing sexual conflict between the king and the queen spurs a series of inventions aimed first to satisfy a desire, and then at self-protection. Pasiphae's passionate love for a bull leads Daedalus to build her a hollow replica of a cow that she can hide herself in to trick the bull into mating with her. Their offspring is the monstrous Minotaur, for whom Daedalus helpfully creates the labyrinth to contain him. When Daedalus finds himself imprisoned on Crete, he makes his flying escape on artificial wings, at the cost of the death of his son Icarus.

Of course, eros and insecurity can be seen in tyrannical or near-tyrannical regimes today, and tyrants have what economists call "effective demand"—the means to get what they want, whether for pleasure or protection. Thus, at least for starters, we might attempt to clarify the relationship between innovative tech-

nology and tyranny from the point of view of the tyrant. Daedalus, the innovator in the service of tyranny, looks like the rocket pioneer Wernher von Braun of Tom Lehrer's satirical song: "Once the rockets are up, who cares where they come down? That's not my department, says Wernher von Braun."

But what about free regimes? However much the free regimes of today have roots that extend into certain kinds of republican moral rigor and material austerity, we see them populated by citizens who, for the most part, understand their freedom in terms of the democratic principle of satisfying their desires and doing as they please. And the citizens who hold sovereignty in these popular regimes still rest uneasy and are preoccupied with threats to their security. They are encouraged to believe that they are faced not only with external "existential challenges" to doing what they want—rogue states, terrorism, climate change, weapons of mass destruction, epidemics, infrastructure insecurity, out-of-control AI—but also challenges from within, as scarcity of time and resources interfere more and more with the gratification of their ever-multiplying desires. Modern technology is what it is because its founders and present practitioners alike promise to find effective solutions to problems keeping us from satisfying our desires—solutions the ancients could only imagine.

That the American military named a surface-to-air guided missile “Talos” is noteworthy, as is the historical fact, simply as such, that the ancient imagination anticipated modern developments in artificial life. But there is much more we might have learned from how the ancient poets pushed *beyond* the limits of the *techne* they knew. They seem interested in exploring the perennial human desire “ever to excel” as it extends into the similarly perennial human capacity for going beyond the naturally given.

For the comrades of Odysseus, his desire “ever to excel” was not an unambiguously positive feature. In our time, it is one of the great assumed truths of technology that it can be used for better or for worse, and not surprisingly it is a great source of worry for us how to minimize risk and cost, and maximize benefit. It is when we worry in this way that we most often, to some extent, stop taking technology for granted. But it is a limited extent. Our worries lead us to questions of *how*, to how we can direct our technological capacities to create “solutions” to finite “problems.” Rarely do our worries provoke, for example, an attitude of resignation or releasement.

Mayor understands that the ancient stories were efforts “to understand humankind’s yearning to exceed biological limits and to imagine the consequences of those desires.” This point is well put and

crucial. But by the time we get there, only three paragraphs remain in the book. True, there are sporadic observations on this theme, but it seems she has never quite faced up to how her collection of material raises questions that are relevant to us not because they are exactly the *same* questions we ask but because they call attention to what is too often *missing* in our own discourse. Her book allows us to see a different kind of response, encapsulated in the morally ambiguous use of the term “wonderful” when the chorus in Sophocles’ *Antigone* says, “Numberless are the world’s wonders, but none more wonderful than man.” We are worthy of wonder, and not merely worry, because we stand somehow between beasts and gods (or for that matter, God). We are wonderful because we are in some sense free and in some sense subject to fate. Our given being is not to rest content with our given being. So when we go beyond the given, biological way of creating new life, we act at the intersection of all such hard-to-reconcile tensions.

With respect to inventiveness of robot-like beings, the Greeks displaced some of this wonder to the divine realm. But the inventive Hephaestus, at least, is surely the most human of the all-too-human gods: lame, short, ugly. Mayor endorses the idea that, as scholar Jessica Riskin put it, “mythology blurs the distinction between

technology and divine power.” The ancient stories, then, suggest that technology involves a godlike creativity, yet is often used for the satisfaction of our more bestial desires. Daedalus’ wings are a means to and an expression of human freedom, but they empower also the ingrained rashness of youth. Technology alters the human condition; it also gives it expression.

At some level, I think, Mayor knows all this, but she would rather put her emphasis on a question like whether or to what extent writers on ancient automata were concerned with the *how* of mechanical inventions that so readily engage our creative imaginations. I propose instead that the wonder that imbues the ancient stories more naturally leads to the sorts of *why* questions that prompt thoughts about motives and morality. The inventions of Daedalus can of course be read as an anticipation of human flight—“Mankind has always wanted to fly,” goes the cliché. But to take his story seriously would be to examine it for the deeper desires it exposes, for what the story tells us about his character and the character of those he serves. While there is effectively nothing for us to learn from the ancients about techniques for flying, let alone the creation of artificial animate beings, there is a great deal we might learn about ourselves from the stories that expose sometimes uncomfortable insights

into the sources and consequences of our technological creativity.

The old stories show how we navigate the situations created by our technological capacity by making choices about our way of being in the world—that is to say, by our comportment, manners and morals, by some *ethos*-defined conception of a good human life. This thought is subversive within our contemporary horizon. The “problem of hate speech on the Internet” can be discussed in terms of technical or legal “solutions,” or in terms of deficits of civic, moral, and religious education that have produced the haters. The first framing of the issue is by far the dominant one, despite the way even those discussions are often characterized by a certain hopelessness about the efficacy of the solutions being put forward. The ancient authors, on the other hand, knew what disordered souls looked like, and knew both what is possible to do about them and the limits of the possible. In our disorderly world, they deserve a harder look than we are giving them.

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