

DR. SPACE: THE LIFE OF WERNHER VON BRAUN

(BOB WARD)

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In 1969, when men first landed on the Moon, Wernher von Braun was seen as the herald of, and driving force behind, a brilliant expansionist future for mankind. He was world-famous, in a way that no man can be today, given the fragmented attention of the modern internet-driven globe. But from the perspective of 2023, we can see that even at this apparent apogee, America had already begun its long retreat from Space. No surprise, then, that von Braun's star has faded. Yet he has never been fully forgotten, and I suspect that among the handful of men who will, or may, make our future, his story is very well known. And for the rest of us, it is worth pondering what his life says about the years to come.

The book itself is not flashy. The author, the late Bob Ward, was a newspaper reporter who lived in the same city as von Braun and reported on him from 1957 until his death in 1977. For his book, published in 2005, he conducted extensive interviews with colleagues, friends, assistants and secretaries (though not von Braun's wife or children). What we get is newspaper-type recitation of facts and quotes from people who knew von Braun. Ward does not pursue matters harder to tease out; for example, he makes more than a few references to von Braun's religiosity, but we are left in the dark whether von Braun went to church, and we get no glimpse at all of his inner spiritual life. Similarly, his wife and children are largely ciphers. It doesn't really matter, because von Braun is worth studying for his impact on space exploration, and not for any other reason, but a little color would have been nice.

Von Braun was born a Prussian aristocrat, in 1912. He was, if not a prodigy, extremely bright, and by his early teens already keenly interested in rocketry. When he graduated secondary school, in 1929, he attached himself to Hermann Oberth, Germany's equivalent of the American rocket pioneer Robert Goddard. Germany was then gripped by a space craze, and Germany led the world in science and technology, so he was in the right place at the right time. Rocketry was then a combination of unproven theory and (dangerous) experiment. Along with advancing both, von Braun also learned related practical skills—such as how to transform a chunk of steel “as large as a child's head” into a walnut-sized

perfectly symmetrical cube, using only a hand file. Such understanding material and its limitations, exemplifying Matthew B. Crawford's "tacit knowledge" about the unalterable "truth" of physical things, learned by accomplishing a task that can only be understood by doing, created a strong base for von Braun's future life's work.

The Oberth group launched many small rockets, but money was always in short supply. However, in 1932 the German military took notice of rocketry (which was not limited by the Treaty of Versailles), and the money problem disappeared. This was when another talent of von Braun's appeared—salesman. He was a consummate pitchman for what he believed in, and what he believed in was the future of man in space. He didn't care one way or the other about military applications, but the men with guns had the money, and they paid for his rockets. This was his approach throughout his career.

During this same time, he attended college in Berlin, and in 1932 received a degree in mechanical engineering, followed by a doctorate in physics in 1934. He joined the air force for two years, and learned how to fly, something he did his whole life, often recklessly. By 1937, only twenty-five, von Braun was technical director of German military rocketry efforts, based near the Baltic village of Peenemünde. Here yet another talent of his, again one not often found among geniuses, emerged—manager. He was very good at picking talent, and even better at getting talent to work together in harness. His leadership was strengthened by his being unflappable when technical problems arose, and being obsessively hands-on about fixing them. The team gradually scaled up rockets, with the aim of helping the German war effort—first the A-1, then the A-2, and finally the A-4, renamed the V-2.

As with other German wonder-weapon efforts, rockets were alternately starved of funding and made the object of obsessive focus, as the demands made by Adolf Hitler changed based on the changing fortunes of war. Moreover, rocket progress was slow, not surprising considering that nearly all the Germans were achieving in rocketry was being invented as they went along. Hitler, generally a skeptic, visited Peenemünde only once, on von Braun's twenty-seventh birthday, and was not much impressed by the progress rockets had made—though Heinrich Himmler, head of the SS, was more impressed, and took a personal interest in the following years. Himmler's interest was dangerous

for von Braun, who viewed “his” rockets primarily as the basis for future human space exploration, with the war as an unfortunate temporary hassle requiring him to focus on military applications. This sort of opinion, and talk about it, was frowned on by the military who actually ran the Peenemünde operation, and even more frowned on by the SS. Von Braun was at one point arrested, interrogated, and threatened with being charged with treason. In one of the many internal power struggles in the Third Reich, however, Albert Speer, then the very successful minister in charge of war production, working with von Braun’s Army friends, got him released and back to work.

In 1943, the Allies bombed Peenemünde, killing nearly a thousand people and setting back the German rocket program significantly. Main production was thereafter moved to an underground factory in central Germany, called Mittelwerk, though technical work remained at Peenemünde, as did von Braun. Himmler took an ever-greater role in the rocketry program, including arranging for thousands of prisoners of war to be used as ill-treated forced laborers. Thousands died, a touchy subject for von Braun for the rest of his life. These changes further delayed the V-2, which only came into use in 1944, too late to be of real help in the war. About three thousand V-2s were fired, killing about five thousand people. (By contrast, Allied bombing killed around a million German civilians.) Von Braun didn’t care, at all, although he tried to hedge in later years—not only was he helping the German war effort, as was his duty, but he was also advancing his goal of getting mankind to space.

As the Third Reich collapsed, von Braun was faced with the problem of how best to protect himself, and the people for whom he was responsible, the large group of technical experts he had assembled and worked with for years. The government moved von Braun’s equipment to Mittelwerk and, fortunately for them, the technicians themselves south, to the Bavarian Alps, where the Americans were heading. When the war ended, they quickly announced themselves to the Americans, who were eager to acquire rocket expertise. The Russians were also looking for rocket experts, and did manage to scrape quite a few together from elsewhere, but did not get the cream of the crop. The gregarious von Braun quickly became popular among the American military men, and with his cooperation, the Army narrowed the list to just over a hundred engineers, and their families, in what was later called Operation Paperclip

(from the paperclip used on a man's file to signify his selection). Moving outside of regular immigration channels, on what were initially short-term contracts, the German team moved to Texas.

America quickly became home for von Braun; it does not seem that leaving his ancestral home and homeland troubled him much. Primarily, that was because he saw this as the best way to realize his life goals. Secondly, all his family's estates and fortune had been stolen by the Allies and given to the Poles, so he had nothing to go back to anyway. In 1947, however, he did return to Germany for a few months, to marry his eighteen-year-old first cousin. And so, for the next fifteen years, von Braun worked on American military rockets, moving in 1950, at age thirty-eight, to Huntsville, which would be his home for the next twenty years.

His salesman skills, and his ability to hold forth on nearly any scientific matter (and many non-scientific matters, especially history—he was a polymath, and had little use for passive “recreation” such as golf), combined with the times, made him famous. He assiduously cultivated what would today be called “influencers,” ranging from Walt Disney to Walter Cronkite to Arthur C. Clarke. Von Braun was quick-witted, too. When a woman told him she would bet him ten dollars that God didn't want man to leave Earth, he retorted that the Bible said nothing about space flight but that it was clearly against gambling. And when asked about women astronauts, he said that the astronauts (all men) were very much for it, and “We're reserving 110 pounds of payload for recreational equipment.” (This is the correct approach to the foolish idea of female astronauts.)

He was egotistical, always stealing the spotlight at any gathering, yet he was self-referential enough to maintain the deep loyalty of those who worked for him (and in return he was loyal to them, which was just as important). He was decisive, a key trait highly desired by subordinates that is often ignored. (They don't teach you in business school that being decisive is at least six hundred times more important in a leader than “building consensus.”) It was some of his peers, or those who thought they were his peers, who resented that von Braun was more popular than they, and tried to cause him trouble in the bureaucratic managerial regime that America had already become. He traveled constantly, but

still, his seems to have been a good marriage (and despite von Braun's pre-marriage reputation as a womanizer, one not marred by infidelity).

Initially, von Braun worked primarily on the Redstone rocket, the first American ballistic missile. He pushed for satellite launches using the Redstone, but this was an uphill battle, as the need for satellites was less obvious than the need for missiles, and most men in the government thought the Soviet Union far behind, and thus satellites of lesser importance. Moreover, Huntsville was not the only center for rocket research; the Navy produced the new, unproven Vanguard system, which was chosen as the vehicle for America's first satellite launch. But when Vanguard proved incapable, and when the Soviet launch of Sputnik in 1957 showed America was in fact behind, the Redstone rocket was used to launch both satellites and America's first man in space, Alan Shepard.

Gradually civilian space uses, or at least space uses not wholly military, came to the fore. NASA was established in 1958, and NASA opened the Marshall Space Flight Center in Huntsville in 1960, of which von Braun became director. The 1960s were the pinnacle of von Braun's success. The Marshall Center developed the Saturn rockets, which sent the first men to the moon in 1969. It was the culmination of everything for which von Braun had worked. Everyone of importance, from the President on down, publicly hailed the accomplishment and predicted a new era for mankind.

Von Braun's real goal was getting mankind off Earth; the Moon was just a stepping stone. "The importance of the space program is not surpassing the Soviets in space. The importance is *to build a bridge to the stars*, so that when the Sun dies, humanity will not die." What von Braun wanted most of all for his own lifetime was to go to Mars, which he saw as the next step in mankind's outward journey. This wasn't a secret; he talked about it often, even when he first arrived in America. In 1952, he wrote a book called *Project Mars*, which was basically a technical work on how to get to Mars, attached as an appendix to a novel. The parallels in this to Elon Musk, of whom more shortly, are obvious (in a strange twist, the administrator of Mars in von Braun's novel is "the Elon.")

And then everything went downhill for von Braun, and for mankind. The rot which started to eat America in the 1960s swamped his grand dreams, as politicians moved on and the Zeitgeist turned sour. In retrospect, we can see that this was inevitable, tied to the declining arc of

our own society. Even before 1969, powerful and rising demagogues wanting to extract never-ending handouts from the successful core of American society criticized the “Moondoggle.” In fact, a good deal of von Braun’s time was spent trying to rebut those voices, as if logic had any relevance to their parasitic demands. He pointed out the downstream economic benefits of NASA spending, given that all the money was being spent here, not on the Moon. He was reduced to a shotgun spray of promises, selling Space as helping “unemployment, balance of trade, increase in food production, protecting the environment, developing health care, energy, world peace.” More and more, his pleas fell on deaf ears, a new experience for him.

Even prior to the first Moon landing, and despite the euphoria that greeted that accomplishment, NASA funding was declining, as the poison of the 1960s took hold. Disasters such as the so-called Civil Rights Act and the Hart-Celler Act, perhaps the most destructive laws in American history, date back to 1964 and 1965, after all. Still, von Braun pressed on, and what he aimed to do was get Congress to fund a twenty-year program of further advancement in space exploration, culminating in a manned landing on Mars. Therefore, in 1970 he accepted a high position at NASA—in Washington, D.C., where he thought he could be more effective at selling his program.

It was a disaster. Von Braun left all he had built in Huntsville, and in Washington, he was frozen out by those who held the bureaucratic power at NASA. In part this was due to the changing times, in part to the jealousy of lesser men, and in part due to dislike of von Braun’s past service to the National Socialist regime in Germany, especially on the part of George Low, the Deputy Administrator of NASA, who was Jewish. Back in Huntsville, the remaining Germans from Operation Paperclip were also forced out; this was the era when the Holocaust, previously a matter largely ignored by history, was made central to America, and men with any connection, no matter how tenuous, to persecution of Jews were no longer welcome, whatever their contributions had been. (Ward even makes negative reference to the “Jewish Mafia,” both within NASA and within the space community as a whole.) Von Braun quit NASA in 1972.

That was pretty much it for him. He worked briefly in private industry, for Fairchild Industries. But then his failure to address intestinal polyps

caught up with him, and after some years of decline, he died of cancer in 1977. On his simple gravestone, he has only his name and a citation to Psalms 19:1. "The heavens declare the glory of God; and the firmament showeth his handiwork."

He left very little behind. Nothing of great interest or import has happened since in space exploration. For decades, we have been fed propaganda to cover up this now-obvious fact. We were told the Space Shuttle was the stepping stone to further achievements, then the so-called International Space Station, and both of those petered out with nothing at all of value accomplished. I can remember every President from Ronald Reagan on occasionally making grand promises about some new project or other, none of which ever arrived, or even made any progress toward fulfillment. A few robotic missions have caused a buzz, but none of them were part of any larger plan, or led to anything more. And we have now reached the stage of farce, where NASA's Artemis program, supposedly directed at putting us on the Moon again, uses a bloated, stupid, archaic rocket that will never accomplish anything of the sort, and proudly states as its main goal that it "will land the first woman and first person of color on the Moon." Barf. This is just a fantasy, the sort of thing that might have been depicted in the movie *Idiocracy*.

Ah, but you say, what about Elon Musk? He (although a very different man than von Braun) makes new, better rockets fly in the grand old style, and his goal of getting to Mars is the same as von Braun's. This is the wildcard, for the great man theory of history is the only theory of history with any basis, and Musk is the only man visible on the scene who may make a reboot of von Braun's dreams possible. The problem is that as matters stand Musk will not be permitted by the Regime to succeed. He realizes that, and I expect he will do something about it, if the Regime does not kill him first. (It does not matter if going to Mars is a stupid goal; even if true, that is totally irrelevant here.)

What would it look like, if Musk wins his Ragnarok with the Regime, and becomes free to do as he pleases to achieve his life goal, getting to Mars? What would it take for us to reboot an actual space exploration program—either a manned space program that accomplishes something new, not just a clownish repetition of what we already did years ago, or a coherent robotic space program designed to offer both profit,

through various types of mining, and the possibility of follow-up by men where robots go first?

It would take money, and not money spent in the corrupt and societally-pointless way it is today, but tightly focused on action and accomplishment. (Money spent correctly, within the right frame, can accomplish feats thought impossible; Musk's accomplishments so far, along with historical examples like Speer, prove that.) It would take assembling a massive team dedicated to and capable of extreme achievement (and offering tremendous societal honor and reward for that achievement). Since diversity is the opposite of strength, both intelligence and culture matter, and women totally lack the drive for glory necessary for such a team to succeed, that team would be comprised of nearly all white men. It would take the willingness to take huge risks and accept major losses and failures—that is, it would take the end of the feminized safetyism that has seized America in a death grip, of which our stupid reaction to the Wuhan Plague is only one example. It would take a willingness to ignore demands for handouts to take precedence over achievement. Thus, it likely could not be done in a “democracy” such as ours, where the main financial aim of the government is coddling rich old people while sucking the life out of the young, the secondary focus is wholly profitless and useless forever wars, and the tertiary goal is corporate welfare of innumerable sorts (which overlaps the second, of course). It would take an end of America trying to impose globohomo by military force across the entire Earth. Who cares what happens in Ukraine? It has no meaning or importance for us at all. Or in Europe, for that matter. Or in the Middle East. Anywhere outside of North America we would have to ignore (but Canada should become a satrapy, and Justin Trudeau sent forever to the sugar beet plantations in Saskatchewan).

It would take a rejection of managerialism, meaning total destruction of the administrative state, which exists only to hobble greatness and achievement. It would take a cultural return to the forms of private enterprise which characterized the early twentieth century, with the interests of workers and the owner aligned but not confused. It would take more children; part of what made NASA's early efforts successful was the pool of engineers that von Braun could draw from. The average age of engineers (all men, of course) in the Apollo program

was twenty-eight. (The hunger and drive of young men is universally one of the key drivers of any successful group effort; as I have often pointed out, nearly all the relevant accomplishments of mankind have been achieved by men under the age of forty-five.) It would take totally changing education, to both end all useless forms of higher education (meaning a massive reduction in college attendance) and to expand the hard sciences, while focusing education only on Americans, expelling most foreigners from our institutions (and from our country), and at the same time finding, honoring, and rewarding talent that now goes to waste. It would take rebuilding our manufacturing base, such that we would be no longer dependent on hostile, or potentially hostile, powers for key components needed for our accomplishment.

No doubt there is more needed that I'm missing. But you get the idea—achieving Musk's goal will require a total revamp of American culture and society. I think he has enough drive both to see this and to try to do this. And I think all this could be done within ten years. This is not without precedent. All of America's effort in World War II, all the building, killing, and dying, all the reorienting of American society, took place in three-and-a-half years: the amount of time since the Wuhan Plague began until today. What is now needed cannot be done without a great deal of pain, to be sure, but hopefully most of that pain will be borne by those who have brought America low, while the majority of Americans benefit hugely.

I am willing to bet that the chaos surrounding the end of our Regime will make this revamp likely, though not inevitable. Chaos brings opportunity; this is a basic principle. Given that the Regime is tremendously fragile, and crises are certain, I expect Musk to take advantage of Regime fracture when the crisis arrives to make possible a future resembling what is needed. It's not that I'm a Musk superfan—he is a very imperfect vessel. And to be sure, another man might arise—or rather, many men will certainly arise. But Musk is in the pole position for now. You go to war with the leaders you have, and breaking the world, followed by rebuilding it in new pathways, is the only way we are getting the dream of Space back on track.