
Wernher von Braun, the SS, and Concentration Camp Labor: Questions of Moral, Political, and Criminal Responsibility

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Dr. Wernher von Braun (1912-1977), the German-American rocket engineer and space visionary, is often depicted in white or black, saint or devil terms. In the eyes of his associates and hero-worshippers, he is still seen as an apolitical space enthusiast who was not a “real” Nazi and had nothing to do with the crimes of the Third Reich—indeed he was arrested by the Gestapo and held for two weeks in 1944.* Many critics and many survivors of the Mittelbau-Dora concentration camp, on the other hand, see him as an unprincipled opportunist or even a convinced Nazi who was directly responsible for the deaths of 20,000 prisoners. Although the scholarly community has begun to break with this simplistic dualism, an empirical inquiry into his actual involvement with National Socialist organizations and war crimes, based on all available evidence, is still very much needed—especially in view of the brief and unsystematic treatment these questions have received in recent studies.¹ While such an empirical inquiry cannot end the debate, in part because the evidence is itself debatable, it can narrow the limits of what can plausibly be claimed. Moreover, an inquiry into von Braun’s behavior may help spark further investigations into the responsibility of engineers, scientists, and middle managers for the exploitation of concentration-camp labor; the existing literature concentrates overwhelmingly on either direct perpetrators of the Holocaust, or on industrial corporations and their leaders.²

The decisive split between pro- and anti-von Braun camps has a long history—too long to be detailed here. Suffice it to say that from the time he rose to fame in the early 1950s to the Apollo moon landing in 1969 and beyond, Wernher von Braun was feted in the United States, West Germany, and elsewhere as a Cold War hero—as the “Columbus of space,” as the visionary of space travel, and as the greatest rocket engineer of the age, one who contributed to both Western military preparedness and the human exploration of space. As a part of building and protecting that reputation, von Braun had to develop an elaborate narrative

defending his service for the Third Reich, and this narrative almost necessarily suppressed any reference to Mittelbau-Dora or his membership in the SS. Yet he could not escape criticism from a skeptical minority, who saw him not as a convinced Nazi, but rather as a complete opportunist willing to sell himself to anybody, even the Communists, if they would fund his obsession with space. Such a feeling—which ignored his committed anti-Communism—was most incisively expressed in the 1965 song parody of Tom Lehrer, which included the famous lines: “When the rockets are up, who knows where they come down, that’s not my department, says Wernher von Braun.”³

But as the story of Dora slowly began to reemerge in the 1960s and 1970s, the ground began to shift. The watershed event was the Justice Department announcement in 1984—seven years after von Braun died of cancer—that one of his closest associates, Arthur Rudolph, had left the United States because of his involvement in slave labor in the Mittelwerk underground plant. In the aftermath, journalists got access to formerly secret U.S. government documents that gave concrete details about von Braun’s memberships in the National Socialist Party (NSDAP) and the SS, and his involvement with Mittelwerk and Dora. As a result, the anti-von Braun camp came to see him as a Nazi who may or may not have had much ideological conviction, but who nevertheless became an SS officer and war criminal in order to further his rocket program.

Yet there are problems with simply reducing Wernher von Braun to the role of black-shirted villain. There is evidence of his lack of enthusiasm for the SS and of his growing disillusionment with the regime in the last two years of the war—a disillusionment that contributed to his arrest in March 1944. Only his indispensability to the V-2 program protected him from a possible death sentence. It is his involvement in concentration-camp labor that is central to any judgment of him, and the documents I and others have uncovered show him to be responsible, in some sense, for “crimes against humanity.” Nonetheless, as I will argue, the meager surviving evidence cannot provide a conclusive answer as to the degree of his responsibility for such crimes. In many ways, Wernher von Braun remains an ambiguous case.

In order to justify this assessment, I will examine the evidence in four areas: 1) his Party and SS memberships, his ideological convictions, and his Gestapo arrest; 2) his knowledge of, and involvement in, concentration-camp labor before his arrest; 3) his involvement with concentration-camp labor after his arrest, especially in regard to a letter he wrote on 15 August 1944; and 4) his possible involvement in the physical abuse of prisoners.

1. Wernher von Braun, National Socialism, and the SS

Von Braun’s meteoric early career can be briefly summarized. A Wunderkind, he earned his doctorate in physics by age 22 in mid-1934, one-and-a-half years after the army lured him from the ranks of the small but enthusiastic spaceflight

movement of the late Weimar republic. By 1937 he was the technical director, presiding over several hundred engineers and craftsmen at the new super-secret Peenemünde rocket center on the Baltic; by 1942, at age 30, he was the charismatic and highly successful manager of a complex engineering program employing thousands of people in the creation of the world's first ballistic missile, the A-4 or V-2.

By birth and upbringing a Prussian Junker, von Braun was a Freiherr (baron) who did not consistently use the title and dropped it altogether when he came to the United States. His father had in fact been Reichsernährungsminister (Minister of Agriculture) in the reactionary Papen and Schleicher cabinets just before Hitler came to power. This conservative nationalist background was influential. In 1947, the science writer Willy Ley described Wernher von Braun as he knew him fifteen years earlier:

Physically he happened to be a perfect example of the type labelled "Aryan Nordic" by the Nazis during the years to come. He had bright blue eyes and light blond hair and one of my female relatives compared him to the famous photograph of Lord Douglas of Oscar Wilde fame. His manners were as perfect as rigid upbringing could make them. I remember he spoke rather good French. One day he came in while I was struggling with a Sarabande by Handel; after I had finished he sat down and played Beethoven's Moonlight Sonata from memory....

Did we discuss politics? Hardly, our minds were always far out in space. But I remember a few chance remarks, which might be condensed into saying that... the German Republic was no good and the Nazis ridiculous. That, of course, was simply the political platform of the... Society of German Nobility... to which von Braun's father and possibly also Wernher von Braun belonged.

Ley's last conjecture is certainly wrong, but he captures an attitude common among the reactionary elites in 1932. Nonetheless, key members of those elites soon formed a coalition with the Nazis because of the antidemocratic and ultra-nationalist goals they shared. Von Braun's father was not in the new Hitler cabinet, but, according to his memoirs, he would have joined if he had been asked; he shared the disastrous illusion of his compatriots that the Nazis could be used.⁴

Ten months into the Third Reich, in November 1933, Wernher von Braun joined his first significant Nazi organization: SS-Reitersturm I at Berlin-Halensee—an SS equestrian unit. He asserted in a secret affidavit for Project Paperclip in 1947 that: "I was there twice a week and took riding lessons. The entire outfit did never participate in any activity whatever outside the riding school during my connection with it. In summer 1934, I got my discharge from the 'Reitersturm.'" Other than a document that verifies his membership as an "SS-Anwärter" at this time, we have

no further information.⁵ I believe that von Braun joined not only for recreation, but also because Nazi student organizations were putting pressure on non-Nazi students to demonstrate their ideological conformity in the fall of 1933. It is noteworthy that he dropped out at the time he received his doctorate from the University of Berlin.

Yet it is also important to note that we have no evidence that he was bothered by the regime's brutal suppression of opposition or its growing persecution of the Jews. As a student in the Institute of Physics of the University of Berlin he could hardly have been unaware of the dismissals of Jewish professors, and as a civil servant he dealt with the procedures for demonstrating "Aryan" ancestry.⁶ But coming from baronial families with genealogical tables stretching back centuries, he had no worries. Indeed, the possession of this information made it easy for him to meet the strict racial criteria for SS membership. At the same time, there is no evidence for anti-Semitic statements or acts on his part, and in the early and mid-1920s, his parents put him into a Berlin school, the Französisches Gymnasium, which was regarded by some conservatives as too Francophile and Jewish—and indeed a significant percentage of the students were Jewish. This makes one wonder, however, how he could have been so apparently indifferent to the post-1933 persecutions.⁷

In November 1937, von Braun joined the Party. His 1947 affidavit asserts that he had been "officially demanded" to join the Party in 1939, but we have the NSDAP central file card to show the exact date, so either his memory was faulty or he was shading the truth.⁸ Party membership had been closed down in spring 1933 after a rush of millions of new opportunistic adherents, and only reopened on a more restricted basis in 1937. The assertion that he was pressured to join because of his position in the new Peenemünde rocket center is unverified, but it is consistent with his previous behavior and what we know about the system.

Other fragmentary evidence confirms that von Braun was quite typical of many German scientists and engineers: he was pseudo-apolitical—distant from party politics in principle, but a right-wing nationalist in reality—a point of view consistent with his upbringing as well as his occupation. In his later description of his encounters with Hitler, one can also detect something of von Braun's aristocratic origins:

I met Hitler four times. When I saw him from a distance for the first time in 1934, he appeared to me as a fairly shabby fellow [ein ziemlich schlampiger Typ]. Later when I met him in a smaller circle [in 1939 and 1941], I began to see the format of the man: his astounding intellectual capabilities, the actually hypnotic influence of his personality on his surroundings. It moved one somehow.... My impression of him was, here is a new Napoleon, a new colossus, who has brought the world out of its equilibrium.... In my last meeting with him [on 7/8 July 1943], Hitler

suddenly appeared to me as an irreligious man, a man who did not have the feeling that of being responsible to a higher power, someone for whom there was no God.... He was completely unscrupulous.⁹

While these assertions are impossible to verify, they do ring true. One can read in them a political trajectory experienced by many elite conservative nationalists: from skepticism about the vulgar populism of Hitler and Nazism, toward enthusiasm at the height of the “Führer’s” successes, and back to skepticism and even hostility once it became clear that he was leading the country into catastrophic defeat.

The next step in Wernher von Braun’s deepening involvement with Nazism came in April/May 1940. An SS colonel from a nearby town “looked me up in my office at Peenemuende and told me, that Reichsfuehrer SS Himmler had sent him with the order to urge me to join the SS. I told him that I was so busy with my rocket work I had no time to spare for any political activity. He then told me, that my being in the SS would cost me no time at all. I would be awarded the rank of a ‘Untersturmfuhrer’ (lieutenant) and it were [sic] a very definite desire of Himmler that I attend his invitation to join.” His 1947 affidavit goes on to state that he stalled for time and asked his military superior, Col. Walter Dornberger, what to do. Dornberger insisted that he join—presumably to protect the rocket program politically. “After receiving two letters of exhortation” from the SS colonel, “I finally wrote him my consent.” Thereafter Himmler approved promotions in late 1941 and late 1942, presumably on the basis of favorable evaluations of his technical work and ideological reliability.¹⁰

The multi-talented rocket engineer probably first met the Reichsführer-SS at the end of 1942, during Himmler’s first visit to Peenemünde. When von Braun requested permission to marry from the SS Race and Settlement Office in April 1943, he had to send the letter through the Reichsführer-SS; to curry favor he added the greeting “Führer!” in his own hand. (The proposed marriage to a Berlin woman never took place.)¹¹ But it was Himmler’s second visit to Peenemünde on 28/29 June 1943 that was of more consequence. Dornberger, now a Generalmajor (equivalent to a US one-star general), allegedly ordered von Braun to appear in SS uniform, and one photograph—the only one that has turned up so far—shows him in the background wearing it. Impressed by the apparently decisive military importance of the new ballistic missile, Himmler gave von Braun an early promotion from SS captain to major (Sturmbannführer). According to Dornberger’s memoirs, the rocket program’s leaders also spent a long night at the officer’s club listening to the Nazi empire’s chief policeman explaining the need for brutal policies against the occupied countries.¹² Von Braun never commented on this evening in his later autobiographical articles.

Based on the evidence on hand in the early 1990s, I stated in *The Rocket and the Reich* that June 1943 was the only time von Braun is known to have worn the uniform publicly. We now know that not to be true. Ernst Kütbach, a worker at Peenemünde and member of the local Allgemeine SS unit, recently told BBC-TV that for monthly meetings, which von Braun attended perhaps half the time:

...he would come in uniform, we also had to come in uniform. You couldn't go there in civilian dress. He had the highest rank there, well the platoon leader was an Oberscharführer [sergeant] and he was an Untersturmführer [lieutenant], wasn't he? And when the Doctor arrived, the platoon leader would announce: 'SS platoon 4-9,' or whatever it was called, 'reporting for duty.' And then he would sit down and listen to what the other one had to tell us about tactics and strategy.

Kütbach also relates that the unit leader highly prized von Braun for his marksmanship, and would sometimes induce him to participate in shooting competitions with the local SA, NSKK (NS Kraftfahrerkorps), and NSFK (NS Fliegerkorps). Still, "it was quite a surprise when he became an Untersturmführer, ...well, he made the best of it, you know, he couldn't refuse..."¹³ Apparently, Wernher von Braun only wore the uniform when he had to, and he avoided using the rank on all official correspondence, such that some colleagues were surprised to learn he was a member. In another recent film interview, the rocket engineer Hartmut Küchen relates his astonishment when he saw the Technical Director in black. Küchen's jaw dropped, to which von Braun allegedly told him to shut his mouth, and said: "There was no way around it [Es geht nicht anders]."¹⁴ In fact, he could have evaded joining in 1940, but then he would have had to have an inner conviction and determination he clearly did not possess. His career and life's work in rocketry were all that mattered to him.

Himmler's favor in June 1943 did not protect him nine months later, when he was hauled away in the middle of the night by the Gestapo for making treasonous remarks. According to notes taken by Gen. Alfred Jodl of OKW (Oberkommando der Wehrmacht) on 8 March 1944, two weeks before the arrest, an informant who had been reporting on von Braun for the SD since 17 October 1943 attributed to him and two close associates, Klaus Riedel and Helmut Gröttrup, statements "regarding the war turning out badly and regarding their weapon. Main task is to build a spaceship." Both of his friends were alleged to have liberal sympathies before 1933—which indeed appears to be the case.¹⁵ (But another close friend, Arthur Rudolph, had joined the NSDAP in mid-1931.) Jodl's notes verify postwar assertions by von Braun and his defenders that he did care more about going into space than about building missiles, and that he was becoming disillusioned about Hitler's regime.

Yet as he admitted in his most honest accounts of the arrest, his jailing was actually Himmler's revenge for his refusal to play along in a conspiracy to have the SS supplant the army as the dominant power in the V-2 program. Himmler had summoned Peenemünde's Technical Director to appear before him at his East Prussian headquarters sometime in February 1944, but the young rocket engineer rebuffed Himmler's proposal to give him more money and resources by asserting his loyalty to Gen. Dornberger. He equated potential SS help to an excessively generous dose of "liquid manure" that would kill the "little flower" of the rocket program. It was a courageous thing to do. After he was thrown in Stettin prison some weeks later, in the third week of March 1944, von Braun and his friends were only rescued by the strenuous efforts of Dornberger and Albert Speer. The Armaments Minister had to entreat Hitler personally for a release on grounds of von Braun's indispensability to the V-2 program. Afterward he was for some months only on a conditional release, and the SS leadership never again trusted him. When Hitler signed the decree giving him the Knight's Cross of the War Service Cross in December 1944, along with Dornberger and two others, it was only because Speer prevailed over Himmler.¹⁶

After the war, this bizarre arrest was a real asset for von Braun—he and his defenders often used it to make him look like an anti-Nazi. And yet, it cannot simply be swept under the rug as some critics would like to do. He did show courage, and he did realize that the regime was at least militarily bankrupt, and he had to live under the threat of re-arrest for the rest of the war. Thus, when "he often appear[ed] in a uniform suggesting that he held some form honorary S.S. rank" during visits to frontline V-2 units, according to a report from a German POW captured in March 1945, or when he appeared in uniform with the Knight's Cross around his throat at a January 1945 meeting near the V-2 underground plant, according to another report from a Prof. Dr. Alfred Buch, he was apparently only wearing black as protective coloration. Indeed, at the latter meeting an SS-Standartenführer (Colonel) threatened him with dire consequences if he did not agree to the immediate evacuation of Peenemünde, Buch asserts.¹⁷

2. Involvement in the Exploitation of Concentration-Camp Labor Before the Arrest

It is notable that in the fragmentary documents and anecdotes that come down to us about von Braun's arrest, the Gestapo and SD never charged him with protesting, or even privately complaining about, the murderous treatment of concentration-camp prisoners in the rocket program, especially at Dora in the winter of 1943/44. This fact is potentially important, because just as is the case with his SS membership, I believe we should make a distinction between the pre- and post-arrest situations. His Gestapo imprisonment, which came as a nasty surprise, inevitably heightened the factor of personal survival in the equation of his actions, and that must be regarded as a mitigating factor in judging those actions—although, if the crimes are

serious enough, the mitigation may be of little consequence.¹⁸ Thus evidence of Wernher von Braun's willing participation in the exploitation of slave labor in V-2 production before his arrest should, by this argument, carry more weight before the arrest than after, when the danger of speaking out would necessarily be increased. This is not to say that von Braun and others were not aware of the danger of attracting unwanted attention from the Gestapo or other security agencies before March 1944—in 1942 the structures chief at Peenemünde had gone to jail for a year after colleagues denounced him for some incautious remark about the war—but both his consciousness of personal danger, and the actual threat to his safety, were increased after the Gestapo arrest.¹⁹

The origins of the exploitation of concentration-camp labor in the German Army rocket program are now fairly well known, but a brief recap is needed. Contrary to later assertions by von Braun's defenders that Himmler forced SS labor on the program in fall 1943, in April the chief engineer of the Peenemünde Production Plant, Arthur Rudolph, had enthusiastically endorsed an Armaments Ministry suggestion to use SS prisoners to produce the V-2s, as German skilled laborers were in very short supply. In June and July, the first 600 of an eventual 1300 mostly French and Russian prisoners were put to work setting up the production machinery; Albert Speer's construction authority had earlier created a much larger non-SS forced labor and POW camp south of Peenemünde, and had used those prisoners to complete the buildings. The organizational separation of development and production at Peenemünde at this time meant that von Braun bore no official responsibility for decisions to use forced and slave labor, and if he had any qualms, which is doubtful, he scarcely could have objected anyway. But he was certainly well informed about these decisions.²⁰

On the night of 17/18 August 1943, the Royal Air Force launched a massive raid on the secret rocket center. The effects of the attack were less devastating than they first appeared, but they put a fright into the Nazi leadership. Hitler granted Himmler's proposal to consolidate V-2 production underground using concentration-camp labor even more extensively; Himmler appointed the ruthless chief of SS construction, Brigadeführer (Brig.-Gen.) Dr.-Ing. Hans Kammler, to head the effort. Armaments Minister Speer had to fight to reassert his ministry's central role in the program. Speer, Dornberger, and Kammler chose tunnels located near Nordhausen as the factory site; it came to be known as the Mittelwerk. The SS began trucking prisoners from Buchenwald to the site as early as 28 August, forcing them to sleep on straw laid out on the bare rock of the tunnels until bunk beds were constructed. Only later were barracks built outside. The prisoner Kommando was called Dora, soon to be a feared name at Buchenwald because of the catastrophic conditions of starvation, bad sanitation, brutal overseers, rampant disease, cold, and overwork prevailing there. During the winter of 1943/44, twenty prisoners on average died each day.²¹

The move underground directly implicated Wernher von Braun in concentration-camp labor for the first time. Immediately after the air raid, on 25 August 1943, he chaired a meeting at Peenemünde to discuss moving the SS prisoners housed in the production plant to an underground site in western Germany. On 30 August, he went to Nordhausen for three days and returned on 8/9 October and 25/26 January 1944. In a 1969 witness statement he gave in New Orleans for the trial in Essen of three former SS men, he admitted that he had seen the underground sleeping accommodations once, probably “in the summer.”²² In 1976 he told a TV interviewer that: “The working conditions there were absolutely horrible. I saw the mittelwerk several times, once while these prisoners were blasting new tunnels in there and it was a pretty hellish environment. I’d never been in a mine before, but it was clearly worse than a mine.”²³

This admission, which was given at a time when he already had cancer, was more revealing than what he said in 1969, and much more revealing than anything he wrote or said during the late 1940s and 1950s, when he deliberately obscured the fact that concentration-camp labor had been used in the program, and displayed no evidence of a bad conscience about it, even in private letters. On the other hand, in 1966 he told *Paris Match*, in response to protests of French Dora survivors about the heroic treatment he had received in that magazine, he wrote that “I felt ashamed that things like this were possible in Germany, even under a war situation where national survival was at stake.” His official biographers, Ernst Stuhlinger and Frederick Ordway, relate an anecdote that he allegedly told of going to an SS guard about the poor treatment of the prisoners, early in Dora’s history, and being threatened with being put in a striped uniform himself. The problem is, there is no direct testimonial from von Braun himself to this story, even though he might have used it to defend himself, and the biographers attribute the identical experience to Arthur Rudolph on the previous page. As evidence it must be regarded as worthless.²⁴ Still, we cannot dismiss out of hand that he might fear speaking out, although Holocaust scholars have shown that almost no one was punished for excusing themselves from much more serious crimes. He was aware as anyone that the apparatus of repression existed and that Mittelwerk was highly secret; yet it seems to me that he could have lodged a written complaint about prisoner treatment sometime during the winter of 1943/44, without taking too large a risk, if such a complaint was rationalized as only being in the interest of efficient production. In fact, except for one instance cited below, there is no evidence he cared about the prisoners’ fate, if we discount weak apologies made decades after the fact.

As to his 1969 statement that “during my visits in the Mittelwerk I never saw a dead man, nor did I ever see a beating or a killing,” there is no way to prove these statements false, despite survivor statements that he “must have” seen the piles of dead in or near the tunnels.²⁵ It is quite possible that his limited visits might have avoided such horrific manifestations of the bestiality of Dora in its early months. Similarly, we cannot disprove his statement that he never saw or received a specific

report of sabotage in the tunnels, which could lead to a slow hanging for the prisoner, but he certainly heard more about the issue of sabotage than he was willing to admit in 1969. The Mittelwerk company had issued a decree about it in January 1944, when von Braun was friends with Arthur Rudolph, who had become production manager of the underground plant. He was also often in touch with the ruthless driving force behind the outfitting of the tunnels, Dipl.-Ing. Albin Sawatzki, a Nazi fanatic infamous for his personal abuse of prisoners.²⁶

Almost all the evidence we have regarding Wernher von Braun's involvement with concentration-camp labor comes from Dora, but it is well to remember that Dora is not the only place he encountered it. At a minimum, he was present at five other locations of the army rocket program employing slave labor beginning in 1943: at the Peenemünde Production Plant, the Zeppelin works at Friedrichshafen, the "Zement" tunnels near Ebensee, Austria, to which the Peenemünde development group was to be evacuated (but never was), and two rocket-engine calibration sites—"Vorwerk [Auxiliary Plant] Schlier" at the Redl-Zipf brewery in Austria, and "Vorwerk Mitte," in the Oertelsbruch quarry near Lehesten, Thuringia. On 12 November 1943, under pressure to find German civilian personnel for the Mittelwerk out of the Peenemünde staff, he wrote to the head of the Special Committee A4, Gerhard Degenkolb, who was responsible to the Speer Ministry for V-2 production: "You have now given us permission to employ concentration-camp laborers at the Vorwerke Schlier and Mitte. In view of the difficulty of the test processes to be carried out there, the ratio of prisoners to German specialists cannot go below 2:1." Through this measure he planned to save 240 civilian positions at the two sites by replacing them with SS prisoners. Accompanying this letter in the file are his detailed, handwritten calculations showing the manpower trade-offs, plus a much longer version of the letter written two days earlier. It appears that he did not originate the idea of substituting slave labor, and it applied only to the future running of the test stands. The ongoing construction of the stands by prisoners under the catastrophic conditions of all SS construction projects was beyond von Braun's control. At a minimum, however, the letter implicates him directly in decision-making about the employment of slave labor—a potential "crime against humanity"—whether it was his idea or not.²⁷

We must conclude that, before von Braun's arrest by the Gestapo, he had already become thoroughly acquainted with the employment of concentration-camp labor at a minimum of six locations in the V-2 program, had witnessed at least some of the catastrophic conditions of working and sleeping in the tunnels at Dora, and had been drawn into the administration of slave labor in the program. If we discard the one scarcely credible story of Ernst Stuhlinger, there is no recorded instance of his interest in the fate of the prisoners in this period—nor did the SD and Gestapo accuse of him of complaining privately before his arrest. On the other hand, unlike Rudolph and Dornberger, he was not directly responsible for initiating the exploitation of concentration-camp labor, and was even less involved in its

administration. Moreover, his power to help the prisoners was, as he claimed later in life, virtually zero. The SS had created the basic system of murderous exploitation in the camps, and it could only be altered in the most minor ways. Given the system of repression, any complaint about the treatment of the prisoners would have to have been very carefully cast indeed—but there is no evidence that it was a priority for him, certainly not in comparison to keeping rocket development on track.

3. Post-Arrest Involvement with Concentration-Camp Labor: Charles Sadron and the Letter to Albin Sawatzki

After his release from the Stettin prison in early April 1944, von Braun immediately plunged back into the technical demands and bureaucratic in-fighting of the army rocket program, which, because of the delays in V-2 deployment, was under heavy political pressure from Hitler, the SS, and the Armaments Ministry. At a 6 May meeting near the Mittelwerk, Albin Sawatzki discussed the need to get 1800 more concentration-camp workers for parts production, and later noted that if French subcontractors were evacuated to the tunnels with their machinery, “employment of French workers in the MW [Mittelwerk] [is] only possible in uniform [nur bei Einkleidung möglich]”—that is, only as SS camp prisoners.²⁸ During the same meeting von Braun spoke at length about technical difficulties with the V-2. Some might see his presence in the meeting as particularly incriminating. I would argue, however, that his post-arrest situation, including the conditional character of his release, makes it quite unreasonable to expect him to have said anything.

A potentially more damaging piece of evidence is a letter von Braun wrote to Sawatzki on 15 August 1944, regarding Sawatzki’s suggestion to set up a special test workshop in the tunnels, using a certain French physics professor as a leader for technically qualified prisoners from both Dora and Buchenwald. “I immediately looked into your proposal by going to Buchenwald, together with Dr. Simon [responsible for the placement of technical workers in the Mittelwerk], to seek out more qualified detainees. I have arranged their transfer to the Mittelwerk with Standartenführer Pister [Buchenwald camp commandant], as per your proposal.” He ended the letter by stating: “I also feel it is expedient that the intelligent French physics professor, with the framework of the existing circumstances, be given certain privileges (possibly by allowing him to wear civilian clothes) so that his readiness to perform independent work might be increased. Couldn’t you perhaps suggest something like this to Sturmbannführer Förschner [Dora camp commandant]?”²⁹

We now know who that French professor is—Charles Sadron of the Université de Strasbourg, which had been exiled to Clermont-Ferrand. Arrested in 1943 for *Résistance* activities, Sadron was a physicist who had spent the academic year 1933/34 in Pasadena, California, working with the famous Cal Tech aerodynamicist Theodore von Kármán, whose students launched a pioneering rocket group only two years later.³⁰ In the Mittelwerk, Sadron was assigned to *Kommando Scherer*,

which was responsible for the testing of the highly complex guidance equipment of the missile. André Sellier, a Mittelbau-Dora survivor and author of a recent history of the camp, was a member of his work unit, which had a special barrack in Hall 28 in the tunnels. Sellier remembers von Braun coming into the barrack to talk to Sadron; in a 1947 memoir Prof. Sadron said this about the rocket engineer:

I must, however, in order to be truthful, point out one man who took an almost generous attitude towards me. That is Professor von Braun, a member of the technical general staff that developed the aerial torpedoes. He came to see me in the shop. He is a young man, of very Germanic appearance, who speaks perfect French. He expresses to me, in measured and courteous terms, his regret at seeing a French professor in such a state of misery, then proposes that I come work in his laboratory. To be sure, there is no question of accepting. I refuse him bluntly [*brutalement*]. Von Braun excused himself, smiling as he left. I will learn later that, despite my refusal, he tried several times to better my lot, but to no avail.³¹

This is an important piece of evidence. Because it was written only two years after the end of the war, it is undimmed by the passage of time and unaffected by von Braun's later fame. The fact that Sadron heard of more than one attempt to help him is important too, as it indicates that von Braun's motivations were more than merely securing cooperation for the workshop in the tunnels mentioned in his letter of 15 August 1944. The politeness with which the Peenemünde Technical Director handled a concentration-camp prisoner, even after being rebuffed "bluntly," is also significant. Wernher von Braun apparently identified with Charles Sadron as a professional equal who had been imprisoned through the misfortunes of war.

Sadron's memoir confirms the claims of Dr. Ernst Stuhlinger, a close friend and associate of von Braun, that he told Stuhlinger and others during and immediately after the war that he wanted to help the professor. But it is much more problematic to claim, as Stuhlinger does in an unpublished rejoinder to Rainer Eisfeld's book *Mondsüchtig*, that von Braun's attempts to help the French professor represented a much broader desire to help the concentration-camp prisoners that could only be expressed through limited actions for specific people. Such a claim cannot be disproved, but it is confirmed by no other evidence, and seems influenced by Stuhlinger's transparent partisanship, as indicated by his description of von Braun's trip to Buchenwald as an attempt "to look for more inmates that he might be able to get out of the horrors of that concentration camp"—as if Dora was any different!³² Von Braun's visit with the camp commandant of Buchenwald, as well as his familiarity with the commandant of Dora, remain among the most damaging pieces of evidence yet found regarding his integration into the system of slave labor, whatever he thought of it.

But does the 15 August 1944 letter to Sawatzki directly implicate von Braun in “crimes against humanity”? The language of von Braun’s letter is fairly definitive on the transfer of slave labor: “I [went]... to Buchenwald... to seek out more qualified detainees. I have arranged their transfer to the Mittelwerk with Standartenführer Pister....” Von Braun must have visited Buchenwald before 24 July, because on that evening he assigned an engineer in Peenemünde to go to the Mittelwerk and set up the special test workshop—an action his letter mentions in tandem with the Buchenwald visit. According to Dora historian Jens-Christian Wagner, the SS transferred 300 prisoners from Buchenwald to Dora on 25 July, and 336 on 2 August, the latter were “skilled workers for *K[omman]do Sawatzki*”—which is particularly suggestive. We cannot prove that one of the transports included skilled prisoners assigned to Dora because of von Braun’s actions, but his words are quite clear, and such a transfer would at least in theory put him in violation of the Nuremberg standard applied to Albert Speer.³³

Ultimately one is left with an apparent paradox: on the one hand, his visit to Buchenwald implicates him directly in “crimes against humanity,” something even his post-arrest situation cannot mitigate much because he could have avoided going to Buchenwald if he wanted to; on the other, Sadron’s memoir clearly pictures him in a favorable light as the only German who tried to help him—by far the most exculpatory evidence that has yet been found. But perhaps it is not a paradox at all: von Braun simultaneously wanted to use Sadron to set up the special test workshop in the tunnels, in order to advance V-2 deployment, yet he also wanted to help him, because he could identify with a fellow scientist “in such a state of misery” that he had clearly witnessed with his own eyes. That he may have been disturbed about the fate of the other prisoners cannot be ruled out, but certainly there is no reliable evidence for it.

4. Evidence Regarding the Abuse of Prisoners

By far the most problematic evidence regarding Wernher von Braun are reports from former concentration-camp inmates that he was involved in beatings or executions. Survivor testimonies can provide invaluable evidence of individual acts that would otherwise go unrecorded, but there are obvious methodological problems with such testimonies: they come from individuals who have gone through nightmarish, traumatic experiences, and are usually recorded decades later. There is a further danger that someone who becomes famous as von Braun did in the 1950s and 1960s can become the subject of myths and false memories, just as some Auschwitz survivors report encounters with Dr. Josef Mengele that cannot possibly have happened because he was not there at the time.³⁴ Thus reports that von Braun attended hangings, ordered hangings, attended hangings or beatings in SS uniform, etc., have scarcely been discussed in the literature because such testimonies

lack credibility.³⁵ But in recent years I have received two reports from French Dora survivors that deserve more consideration. The first is somewhat credible, but the second is almost certainly a case of mistaken identity—and one that brings into relief the problems of accepting such reports.

Georges Jouanin, Buchenwald/Dora no. 38491, claims he was struck by von Braun, possibly in early May 1944—which would put it precisely at the time of the major meeting in which Sawatzki discussed the enslavement of French workers. Jouanin's job was to install cables connecting the guidance system to servomotors in the tail; these powered the air and jet vanes that kept the V-2 on course. He had to climb inside the upright tail section, through the empty hole where the engine would go, and put one foot on one of the servomotors, which were giving the engineers a lot of trouble at that time. Jouanin continues:

[S]omeone has noticed my wooden-heeled clog atop such a fragile organ, and I feel a hand pulling insistently on the end of my striped pants, thus forcing me out of the tail unit. "You, out of here, man, you're committing sabotage! You shouldn't step with your foot on this!" I get slapped in the face twice and my head bounces against the metal panels of the tail unit. Cap in hand, I find myself in front of a man in his 30s, rather well dressed, angry, to who I am not allowed to give an explanation. The seven or eight engineers or technicians in the group of which he came out seem disconcerted, astonished....

I went back to my work space and the incident seemed over, without consequences. My civilian foreman, MANGER is his name, returns from break and tells me....: "Our big boss boxed your ears! That was V. Braun." I answer[ed] him: "I do not know him, Master! I have only seen him once." I never saw him again.³⁶

When I wrote to M. Jouanin about various details, he added that von Braun had said: "What are you then? Ruski? Ach, Frenchman!," before slapping him. He also claimed to recognize the voice when he recently saw von Braun in a film about Dora.³⁷

Can this von Braun be reconciled with the one in Charles Sadron's memoir? André Sellier has suggested to me that the two stories may reflect von Braun's different interaction with prisoners of very different status and age—a distinguished, middle-aged physics professor vs. a twenty-two-year-old ordinary prisoner.³⁸ If it was von Braun—and the identification cannot be taken for granted for reasons to be noted below—it would indicate that he had become thoroughly integrated into the brutal system of concentration-camp labor, even if he did not turn over Jouanin to the SS guards, with possibly fatal consequences.

The second story comes from Guy Morand in a notarized testimonial given in Cannes in 1995. While working, coincidentally enough, on the testing of the servomotors for the Kommando assigned to the Askania company, a subcontractor evacuated to the tunnels, he found one day that his “chronometer” was missing and hidden under some equipment by someone on the night shift in a “stupid form of sabotage.” In order to cover for him, Morand told the foreman that it was an accident.

Like the good Nazi he was, he immediately started shouting that it was sabotage, when just at that point VON BRAUN arrived accompanied by his usual group of people. Without even listening to my explanations, he ordered the Meister to have me given 25 strokes in his presence by an SS [man] who was there. Then judging the strokes weren’t sufficiently hard, he ordered that I be flogged more vigorously, and this order was then diligently carried out, which caused much hilarity in the group, and following this flogging, VON BRAUN made me translate that I deserved much more, that in fact I deserved to be hanged, which certainly would be the fate of the “Mensch” (good-for nothing) I was.

Morand goes on to state that he was known as “one of the inventors of the “V2” and made frequent “rapid inspections” of the hall.³⁹

The administration of corporal punishment in the tunnels, as opposed to the camp, would have been quite unusual, but we have no reason to doubt the story altogether. Yet it may rest on a case of mistaken identity. In September 1944 Wernher von Braun assigned his younger brother Magnus, a twenty-five-year-old chemical engineer and Luftwaffe pilot, as his special liaison to the Mittelwerk, particularly for servomotor production, which was afflicted with serious technical problems. Although still an employee of Peenemünde, Magnus von Braun stayed in the Nordhausen area full-time until the evacuation of April 1945. In contrast, his elder brother visited the Mittelwerk, by his estimates, twelve or fifteen times in total.⁴⁰ Morand gives the time of the incident as the “second half of 1944,” which corresponds to Magnus von Braun’s assignment to the factory, and the testimonial never actually gives “von Braun” a first name.

Morand’s story necessarily brings Jouanin’s identification into question, as both deal with the servomotors. Although Jouanin’s first instinct on timing was early May 1944, when I wrote him about it, he was less than certain. The description of a man in his thirties he saw only once fits Wernher von Braun better than Magnus, however. In the end, it is impossible to say with certainty that Georges Jouanin’s identification of Wernher von Braun can be accepted as meeting a reasonable standard of certainty, as believable as I find it personally. Nor can we conclude with

assurance that Magnus von Braun was responsible for either incident. For purposes of drawing up a balance sheet of Wernher von Braun's involvement with the SS and the concentration camps, therefore, we have little choice but to leave all stories of abuse aside.

Conclusions

The basic conclusions of this empirical inquiry should, by now, be fairly obvious. Wernher von Braun was neither an ideologically committed National Socialist nor an enthusiastic SS officer, but his statement about Hitler makes it clear that, like a great majority of Germans, he *was* enthusiastic about many of the "accomplishments" of the "Führer" during the late 1930s and early 1940s, and was correspondingly indifferent to the persecutions of the political opponents, Jews, and citizens of occupied countries. As his arrest by the Gestapo in March 1944 shows, he became disillusioned late in the war, and he showed courage in rebuffing Himmler's initiative—the real reason for the arrest. In contrast to Rudolph and Dornberger, he was not an initiator of slave labor in the rocket program, but after the 1943 air raid he found himself drawn deeper and deeper into it. Aside from the impressive Sadron case, there is no reliable evidence that he was moved by the fate of the prisoners until pressed about the issue much later in life, although we cannot know what was going inside his head. We can thus never eliminate the ambiguity of his case. Whatever he thought, because he witnessed the terrible conditions in Dora and elsewhere and was in a position of some power, he cannot escape moral responsibility for the criminal abuse of concentration-camp labor, and because he authorized the use of prisoners in Vorwerke Schlier and Mitte, and arranged for the transfer of prisoners from Buchenwald to Dora, he may also bear, in theory, some legal responsibility. This is true even if there is no realistic scenario under which he might have been brought to trial, and even if he was, as his defenders assert, trapped in a system he could do little about.

Yet, if he belatedly woke up to the fact that he was trapped in a nasty system led by an "irreligious" and "unscrupulous" dictator, Wernher von Braun was the one who put himself in that situation. He has often been described as an "opportunist," and that is certainly true. But the term is by itself insufficient because it can cover a whole range of behavior.⁴¹ It can imply a complete lack of principles, yet he had at least one principle, that space exploration was the key to the future of humanity. He eagerly exploited the opportunities the Nazi system offered to build bigger rockets. Moreover, von Braun was a conservative nationalist and a convinced anti-Communist, who, like many German scientists and engineers, felt he was working for Germany, even when the regime began to look increasingly dubious. If he was an opportunist, he was a very specific type of opportunist: he was a patriotic opportunist willing to accept the necessity of joining various Nazi organizations if it would advance his career, his country, and his technical discipline. That puts him farther over on the spectrum of behavior than, for example, scientists like the

physicist Werner Heisenberg, who shared his nationalist short-sightedness, but avoided joining NS organizations.⁴²

Von Braun was thus quite typical of the majority of Germans, educated or not, who were blind or indifferent to the regime's crimes as long as it advanced goals they held dear. After the war, the great Hungarian Jewish physicist Leo Szilard said:

[Many people in 1933] took a very optimistic view of the situation. They all thought that civilized Germans would not stand for anything really rough happening. The reason I took the opposite position was based on observations of rather small and insignificant things. I noticed that the Germans always took a utilitarian point of view. They asked, "Well, suppose I would oppose this, what good would I do? I wouldn't do very much good, I would just lose my influence. Then, why should I oppose it?" You see, the moral point of view was completely absent, or very weak, and every consideration was simply, what would be the predictable consequence of my action. And on that basis did I reach the conclusion in 1931 that Hitler would get into power, not because the forces of the Nazi revolution were so strong, but rather because I thought that there would be no resistance whatsoever.⁴³

Szilard's comment might be compared with something von Braun wrote in 1950:

There has been a lot of talk that the Raketenflugplatz finally "sold out to the Nazis." In 1932, however, when the die was cast, the Nazis were not yet in power, and to all of us Hitler was just another mountebank on the political stage. Our feelings toward the Army resembled those of the early aviation pioneers, who in most countries, tried to milk the military purse for their own ends and who felt little moral scruples as to the possible future use of their brainchild. The issue in these discussions was merely how the golden cow could be milked most successfully.⁴⁴

Ultimately, it is not Wernher von Braun's membership in the SS nor his involvement in slave labor that is most bothersome—in the ranks of Nazi opportunists and minor war criminals he was one of thousands, distinguished only by the high positions he held, both during and after the Third Reich. It is his technocratic amorality, his single-minded obsession with his technical dreams, that is so disturbing.⁴⁵ If the human race is to survive its own rapidly advancing technology in the twenty-first century and beyond, scientists and engineers will have to take moral and political responsibility for their actions—something Wernher von Braun and his colleagues signally failed to do.

*I am deeply indebted to three Dora survivors: Yves Béon for finding Georges Jouanin and for many other favors, André Sellier for his book and for his research and advice regarding Charles Sadron, and Guido Zembsch-Schreve for providing me with two survivor testimonials. Guillaume de Syon of Albright College helped with translations of French documents. Jens-Christian Wagner of the KZ-Gedenkstätte Mittelbau-Dora willingly gave me the fruits of his massive research, and Torsten Heß of the same institution helped me in securing research materials, and organized the talk at the University of Erfurt at which one version of this paper was presented. Wayne Biddle, Robert Smith, Paul Wilson, Aron Ranen, and Dirk Zache kindly provided me with documents, videotapes, or secondary sources, and Ron Doel, Frank and Rosemarie Eyck, Al Gilens, Karen Levenback, Alf Lüdtkke, Alfred Mierzejewski, and Mark Walker made valuable comments on earlier drafts. The original stimulus for this paper I owe to the History Department of the University of Alabama, Huntsville, which made the unpopular decision to invite me to give a public lecture in a city that owes its current size and prosperity, at least in part, to Wernher von Braun. Finally, I wish to thank the National Air and Space Museum and the Smithsonian Institution's Office of Fellowships and Grants for travel and research funds. This article is © Smithsonian Institution.

¹ See Michael J. Neufeld, *The Rocket and the Reich: Peenemünde and the Coming of the Ballistic Missile Era* (New York, 1995); Rainer Eisfeld, *Mondsüchtig: Wernher von Braun und die Geburt der Raumfahrt aus dem Geist der Barbarei* (Reinbek bei Hamburg, 1996); Johannes Weyer, *Wernher von Braun* (Reinbek bei Hamburg, 1999). The two short biographies by Eisfeld and Weyer have one or two new primary sources each, but essentially based on secondary research by others; I treat von Braun's career and responsibility only in limited ways as it fits into the larger narrative. A recent short biography in English by Dennis Piszkiwicz, *Wernher von Braun: The Man Who Sold the Moon* (Westport, Conn., 1998), lacks all German sources, and is sloppy and inaccurate. In the 1980s journalists opened up important new sources, but their publications are very much in the heavy-handed, anti-von Braun camp, as is, to some extent, Eisfeld's book. See especially Tom Bower, *The Paperclip Conspiracy: The Battle for the Secrets and Spoils of Nazi Germany* (London, 1987) and Linda Hunt, *Secret Agenda: The United States Government, Nazi Scientists and Project Paperclip, 1945 to 1990* (New York, 1991). The most notable examples of the apologist pro-von Braun literature are Frederick I. Ordway, III, and Mitchell R. Sharpe, *The Rocket Team* (New York, 1979) and Ernst Stuhlinger and Frederick I. Ordway, III, *Wernher von Braun: Aufbruch in den Weltraum. Die Biographie* (Esslingen, 1992), which appeared in English in a revised form as *Wernher von Braun: A Biographical Memoir* (Malabar, Fla., 1994). The best earlier popular biography, Bernd Ruland's *Wernher von Braun: Mein Leben für die Raumfahrt* (Offenburg, 1969), is surprisingly open about the concentration-camp issue, reflecting the on-going Dora war crimes trial in Essen that started in 1967, but still is completely hagiographic in content.

² For direct perpetrators, the literature is dominated by Christopher Browning, *Ordinary Men* (New York, 1992) and Daniel J. Goldhagen, *Hitler's Willing Executioners* (New York, 1996); for industrial corporations and forced and slave labor, see for example Peter Hayes, *Industry and Ideology: IG Farben in the Nazi Era* (Cambridge, 1997), and Hans Mommsen and Manfred Grieger, *Das Volkswagenwerk und seine Arbeiter im Dritten Reich* (Düsseldorf, 1996). A new article on the German state railroad provides another corporate overview of involvement in the Holocaust, but also looks at the responsibility of managers and officials much lower down: Alfred C. Mierzejewski, "A Public Enterprise in the

Service of Mass Murder: The Deutsche Reichsbahn and the Holocaust," *Holocaust and Genocide Studies* 15 (Spring 2001): 33-46.

³ Tom Lehrer, "Wernher von Braun," album/CD *That Was the Year That Was* (Reprise/Warner) recorded in San Francisco, July 1965. I owe my understanding of the basic shift in the anti-von Braun position to a collaboration with a NASM colleague, Tom Crouch, on an unpublished 1994 conference paper entitled "Wernher von Braun: The Public Image."

⁴ Willy Ley, "Count von Braun," *Journal of the British Interplanetary Society* 6 (1947): 154-56; Magnus von Braun, *Wege durch vier Zeitepochen* (Limburg an der Lahn, 1965), 234, 263.

⁵ Wernher von Braun (hereinafter WvB), "Affidavit of Membership in NSDAP of Prof. Dr. Wernher von Braun," 18 June 1947, National Archives II, College Park (hereinafter NACP), RG 330, Acc. 70A4398, file "Werner von Braun"; SS-Stammrollenblatt for WvB, 28 Feb. 1934, obtained from Bundesarchiv Dallwitz-Hoppegarten (may now be in BA Berlin-Lichterfelde). As he points out in the affidavit, as a student pilot he had earlier been a member of the *Deutscher Luftsport-Verband*, which became "coordinated" as the NS Fliegerkorps in 1934. He was later member of other Nazi organizations that one could hardly avoid in a totalitarian society, e.g., the Deutsche Arbeitsfront, the Nationalsozialistische Volkswohlfahrt, and the Luftschutzverband. Some historians have used generational analysis to trace the roots of Nazi enthusiasm in the cohort of young men who were born too late to serve in World War I, but were affected by its deprivations. See, for example, Ulrich Herbert, *Best: Biographische Studien über Radikalismus, Weltanschauung und Vernunft, 1903-1989* (Bonn, 1996) and Peter Loewenberg, "The Psychohistorical Origins of the Nazi Youth Cohort," *American Historical Review* 76 (1971): 1457-502. But von Braun was born in 1912, rather too young to remember the war, and he was in too privileged a family to experience deprivation. In any case he was clearly not an enthusiast.

⁶ See, for example, Otto Wiemer to Capt. Zanssen, 6 Sept. 1935, and WvB to Wiemer, 7 Oct. 1935, Bundesarchiv/Militärarchiv Freiburg, RH8/v. 1224, where an "Ariernachweis" is needed for Wiemer's potential hiring. Mark Walker deals at length with Aryanization measures as seen in the purging of the Prussian Academy of Sciences; see *Nazi Science* (New York and London, 1995), chap. 4; Ruth Lewin Sime's *Lise Meitner: A Life in Physics* (Berkeley and Los Angeles, 1996), chap. 6, gives a vivid picture of the purging of Berlin physics after 1933.

⁷ Telephone interviews with Kenneth G. Frazer and Prof. M. L. Meyer, Französisches Gymnasium students and classmates of Sigismund von Braun (elder brother); personal communication, Prof. M. L. Meyer, 21 Mar. 2000. Wernher von Braun, unlike his brother, was taken out of the FG and sent to the Hermann-Lietz boarding schools in the Ettersburg and Spiekerroog, ironically because he was failing mathematics and physics. The Lietz schools were ideologically conservative and nationalistic, but we have little concrete information as to how it might have affected Wernher's attitudes.

⁸ WvB "Affidavit," 18 June 1947; NSDAP master file card, former Berlin Document Center records (now in Bundesarchiv Berlin-Lichterfelde, microfilm at NACP).

⁹ Bob Ward, ed., *Wernher von Braun Anekdotisch* (Esslingen, 1972), 28. Pictures now show that he met Hitler twice at Kammersdorf in the first year of the Third Reich—September 1933 and winter 1934. Somehow he has conflated the two in his mind.

¹⁰ WvB "Affidavit," 18 June 1947; SS master file card, former BDC records.

¹¹ WvB marriage file, April 1943 former BDC records, also available at the NACP, BDC microfilm, RuSHA roll A5161, frames 1364-1406.

¹² Walter Dornberger, *V-2* (New York, 1954), chap. 19. Dornberger relates nothing of what Himmler might have said about the Jews. While the Reichsführer-SS could hardly have talked about the Holocaust, as it was supposed to be a great secret, it is unlikely he said nothing. Dornberger knew better than to talk about it in his memoirs, just as he scrupulously avoided discussing concentration-camp labor—even though he was heavily involved in it.

¹³ Ernst Kützbach interview by the BBC, 1998, translated transcription kindly supplied by the BBC; see also Volkhard Bode and Gerhard Kaiser, *Raketenspuren: Peenemünde 1936-1994* (Berlin, 1995), 46.

¹⁴ "Peenemünde: Schatten eines Mythos," by M. J. Blockwitz and A. Walter, film for the Historisch-Technisches Informationszentrum Peenemünde, 1999 version.

¹⁵ Jodl Diary, 8 Mar. 1944, National Archives and Records Administration (NARA) microfilm T-77, roll 1430, frame 923 (typed version).

¹⁶ For a complete analysis of the meager surviving evidence regarding the Himmler visit and the von Braun arrest see Neufeld, *The Rocket*, 213-20, and the sources cited therein.

¹⁷ Captured Personnel and Materiel Branch report, 26/27 March 1945, in NACP, RG 165, G-2 Library "P" File 1940-45, Box 435, Captured Personnel Material Reports AL61-100 German 1944-45; Manfred Bornemann, *Geheimprojekt Mittelbau*, 2nd ed. (Bonn, 1994), 136-38.

¹⁸ I am influenced here by the philosopher David H. Jones, who provides an introductory survey in *Moral Responsibility in the Holocaust: A Study in the Ethics of Character* (Lanham, Md., and Oxford, 1999). Mitigating factors are not to be confused with justified excuses, which relieve one of responsibility for acting or not acting. See esp. chap. 3. See also the useful survey of the literature by Victoria J. Barnett, *Bystanders: Conscience and Complicity in the Holocaust* (Westport, Conn., 1999).

¹⁹ Oral history interview of Wilhelm Raithel by Michael Neufeld, 22 April 1993, National Air and Space Museum Archives, 8-9, 19-21. Raithel assumed the position of structures chief as a result of the jailing of his predecessor. In 1957 von Braun likened the situation of privileged scientists and engineers in totalitarian societies to living with "traffic accidents"—one knew the possibility of arrest existed, but it seemed a remote and acceptable risk. See *Proceedings of "The Next Hundred Years": A Scientific Symposium*, 22 Nov. 1957 (New York, 1957), 59-60, copy in National Archives SE Region, East Point, GA, WvB's Speeches, Box 5.

²⁰ Florian Freund and Bertrand Perz, *Das KZ in der Serbenhalle* (Vienna, 1987), 65-68; Florian Freund, *Arbeitslager Zement* (Vienna, 1989), 39-48; Neufeld, *The Rocket*, 184-95.

²¹ The most important publications on Dora and the Mittelwerk are: Manfred Bornemann and Martin Broszat, "Das KL Dora-Mittelbau," in *Studien zur Geschichte der Konzentrationslager*, edited by Martin Broszat (Stuttgart, 1970), 154-98; Bornemann, *Geheimprojekt Mittelbau*, 2nd ed.; Joachim Neander, *Das Konzentrationslager 'Mittelbau' in der Endphase der nationalsozialistischen Diktatur* (Diss., Bremen, 1997; Clausthal-Zellerfeld, 1997); André Sellier, *Histoire du camp de Dora* (Paris, 1998); Jens-Christian Wagner, *Produktion des Todes: Das KZ Mittelbau-Dora* (Göttingen, 2001). Wagner's revised dissertation is by far the best piece of scholarship on the camp yet written.

²² Minutes of 25 Aug. 1943 meeting in National Air and Space Museum (hereinafter NASM), FE (Fort Eustis) microfilm, FE 734; WvB pilot log, 15 Aug. 1943-11 Nov. 1944, in the WvB Papers, U.S. Space and Rocket Center, Huntsville, Alabama; WvB testimony taken in New Orleans, 7 Feb. 1969, copy provided by Wayne Biddle from the Zentrale Stelle der Landesjustizverwaltungen, Ludwigsburg, original in the Nordrhein-Westfälisches

Hauptstaatsarchiv Düsseldorf, Zweigarchiv Kalkum, Gerichte Rep. 299 (Dora trial records, Essen, 1967-1970), Nr. 160, 69-80.

²³ Excerpt from 1976 interview in WGBH transcript of Frontline program, "The Nazi Connection," broadcast 24 Feb. 1987.

²⁴ WvB to *Paris Match*, 26 Apr. 1966, quoted in Ernst Stuhlinger and Frederick I. Ordway, III, *Wernher von Braun: Crusader for Space* (Malabar, Fla., 1994), I:53; guard story from Stuhlinger and Ordway, *Wernher von Braun: Aufbruch in den Weltraum* (Esslingen and Munich, 1992), 103-4. Note that the latter story also appears only in the earlier German edition, indicating that the authors themselves do not give it much weight. When I wrote to Ernst Stuhlinger about it, he could provide nothing to back it up but his own memory. Stuhlinger to the author, 1 Sept. 1998. My statements regarding von Braun's statements, writings, and private letters of the 1940s and 1950s come from my ongoing biographical research into his personal papers in Huntsville, Alabama, and the Library of Congress in Washington, D.C.

²⁵ WvB testimony, 7 Feb. 1969, New Orleans, 8-9; testimony of Adam Cabala quoted in Weyer, *Wernher von Braun*, 60; Alex Baum (Buchenwald/Dora no. 22886), videotape interview by Aron Ranen, Los Angeles, 1998, kindly supplied by Aron Ranen.

²⁶ Kettler and Förschner, "Sonder-Direktionsanweisung D," 8 Jan. 1944, Bundesarchiv Berlin-Lichterfelde, NS 4 Anhang, Nr. 3; WvB in his letter to Kettler, 21 Jan. 1944, Deutsches Museum (DM) Archives, GD 638.8.2 (= NASM FE microfilm, FE 694a), notes his discussions with Rudolph and Sawatzki "during one of my last visits to the Mittelwerk."

²⁷ WvB to Degenkolb, 12 Nov. 1943, and attached handwritten calculations in NASM FE microfilm, FE 732, (= BA/MA, RH 8/v. 1966); WvB pilot log, 15 Aug. 1943-11 Nov. 1944, in the WvB Papers, U.S. Space and Rocket Center, Huntsville, AL; Freund and Perz, *Das KZ in der Serbenhalle*, 86; Neufeld, *The Rocket*, 207; Freund, *Arbeitslager Zement*; Dorit Gropp, *Außenkommando Laura und Vorwerk Mitte/Lehesten—Testbetrieb für V2-Triebwerke* (Bad Münstereifel, 1999). For von Braun's one or two visits to Lehesten, see the latter, 36-37.

²⁸ "Niederschrift über die Besprechung am 6.5.1944 im Büro Generaldirektor Rickhey," NASM FE microfilm, FE 331. See Neufeld, *The Rocket and the Reich*, 227-28; Eisfeld, *Mondsüchtig*, 129-30, who does not offer specific comment, but also does not set von Braun's silence in context.

²⁹ WvB to Sawatzki, 15 Aug. 1944, DM Archives, GD 638.8.2 (= NASM FE microfilm, FE 694a); for context see also Röhner to WvB, 8 Aug. 1944, in *ibid.* On Dr. Hellmut Simon (not to be confused with SS-Oberscharführer Wilhelm Simon, responsible for the Arbeitseinsatzbüro of Mittelbau-Dora), see Wagner, *Produktion des Todes*, 197n69.

³⁰ "Sadron (Charles, Louis)," *Who's Who in France*, 1969-70 edition (Paris, 1969); Clayton Koppes, *JPL and the American Space Program* (New Haven, 1982), chap. 1.

³¹ Charles Sadron, "À la Usine de Dora," in *Témoignages Strasbourgeois: De l'Université aux Camps de Concentration* (Paris, 1947), 177-230, quotation 198-99; Sellier, *Histoire du camp de Dora*, 117-18, 143-44, 148; Sellier to Neufeld, private communication, 27 Oct 1999. I deduced the identity of Sadron as the subject of the 15 Aug. 1944 letter in early 1999, but when André Sellier was kind enough to give me his book in fall 1999, I discovered that he had published the fact in France a year previously.

³² Ernst Stuhlinger, "The case of the French professor," typescript, July 1996, kindly supplied by Ernst Stuhlinger. Stuhlinger clearly did not know Sadron's identity.

³³ Röhner to WvB, 8 Aug. and WvB to Sawatzki, 15 Aug. 1944, DM Archives, GD 638.8.2;

Wagner, *Produktion des Todes*, 641. Eli Rosenbaum, "Rudolph: The Speer Analogy," 23 July 1985, obtained from the author, has the text of the Nuremberg decision regarding Speer's guilt for war crimes and crimes against humanity for the use of slave labor, and marginal notes comparing his defense to that of Arthur Rudolph.

³⁴ For the methodological issues, see Wagner, *Produktion des Todes*, 29-41. I owe Dr. Wagner the suggestion of the comparison to Mengele, made in a personal conversation.

³⁵ Testimony of Adam Cabala quoted in Julius Mader, *Geheimnis von Huntsville: Die wahre Karriere des Raketenbarons Wernher von Braun*, 3rd ed. (Berlin-East, 1967), 323; testimony of Robert Cazabonne (Buchenwald/Dora no. 21124), Dijon, 3 Feb. 1997, English translation kindly provided by Guido Zembsch-Schreve. Cazabonne reports that a fellow prisoner witnessing a hanging in the tunnel pointed out one of the German onlookers and said "That's VON BRAUN." We know with near certainty that Wernher von Braun was not there; however, it might have been his brother Magnus, as civilian employees were expected to attend.

³⁶ Georges Jouanin, personal communication to author attached to letter of 9 Sept. 1997, translation from the French kindly provided by Guillaume de Syon.

³⁷ Jouanin to Neufeld, private communication, 17 Dec. 1997.

³⁸ Sellier to Neufeld, private communication, 24 Jan. 2000.

³⁹ Guy Morand, "Testimony Concerning the Nazi Von Braun," Cannes, 8 Sep. 1995, English translation, 21 Apr. 1997, kindly provided by Guido Zembsch-Schreve.

⁴⁰ WvB testimony, 7 Feb. 1969, New Orleans, 7, 10. In Magnus von Braun's testimony for Dachau trial, given in Ft. Bliss, Texas, 14 Oct. 1947, NARA microfilm publication M-1079, roll 4, frame 184, he states that from September to November 1944 he was "temporarily as production engineer in charge of the production of center sections and tail assemblies, from November 1944, chief of servo motor production."

⁴¹ The term has the virtue of at least providing a third alternative to the usual black-and-white question posed by the general public and the media: was he "a Nazi" or not? See esp. Walker, *Nazi Science*, 1-4, 269-71, for a discussion of simplistic dichotomies and what he has called the problem of "the scientist as fellow traveler." See also Monika Renneberg and Mark Walker, eds., *Science, Technology and National Socialism* (Cambridge, 1994).

⁴² Since the pioneering work of Alan Beyerchen in *Scientists under Hitler* (New Haven, 1977), there has been an outpouring of literature on physics and physicists, most notably on Heisenberg and the German atomic bomb. Recently three major books have been published on that topic, spanning the full range from Heisenberg as heroic resister to Heisenberg as incompetent Nazi dupe—apparently Wernher von Braun is not the only German scientist or engineer subject to heavy-handed, black-and-white treatment. Still, there is the finely balanced Heisenberg biography of David Cassidy, *Uncertainty* (New York, 1991), whereas to this day no one has published a comprehensive and deeply researched scholarly biography of von Braun. Part of the problem appears to be academic snobism: the history of rocket technology has lacked respectability until recently, unlike the history of physics.

⁴³ Quoted in Paul Lawrence Rose, *Heisenberg and the Nazi Atomic Bomb Project* (Berkeley, Los Angeles, and London, 1998), 236.

⁴⁴ WvB, "Behind the Scenes of Rocket Development in Germany 1928 to 1945," manuscript, spring 1950, WvB Papers, U.S. Space and Rocket Center, Huntsville, AL.

⁴⁵ Weyer, *Wernher von Braun*, 60-61, points to von Braun's amorality and his soldierly sense of duty—product of a conservative, authoritarian Prussian family. His paternal grandfather and at least two uncles were Prussian officers; his father a reserve officer.