CHRISTOPH MICK

SERVING TWO DICTATORS

GERMAN SCIENTISTS IN THE SOVIET UNION AFTER WORLD WAR II

Even before the war had ended, special task forces of the Allies were already searching for German experts involved in the development of the latest German military and civilian technologies. The Allies had no intention of penalizing these specialists for their contribution to the German war effort or for using slave labour in their production facilities, nor did they intend to subject them to an especially strict reeducation programme. The Allies wanted to profit from the knowledge of these German experts and obtain their help for the transfer of German technology to the Allied countries. An equally important consideration was to prevent leading German scientists from falling into the hands of other countries. Great Britain, France, the U.S.A. and the Soviet Union were all competing to obtain the best scientists and engineers. The Americans were able to get hold of the group of leading German rocket engineers who worked together with Wernher von Braun, Britain brought the top German nuclear physicists to Farm Hall to place them out of reach of the Soviets and France was able to coopt several experts in jet propulsion. The Western Allies only brought a few hundred German specialists to their respective countries, preferring to organize the transfer of technology on the basis of the documentation of German inventions.[1]

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[1] LINDA HUNT, Secret Agenda. The United States Government, Nazi Scientists and Project Paperclip, 1945 to 1990, New York 1991; CLARENCE G. LASBY, Project Paperclip. German Scientists and the Cold War, New York 1971; JOHN GIMBEL, Deutsche Wissenschaftler in britischem Gewahrsam, in: Vierteljahrshefte für Zeitgeschichte 38 (1990), p. 459-483; JOHN GIMBEL, Science, Technology and Reparations, in: American Policy and the Reconstruction of West Germany, 1945-1955, ed. by JEFFRY M. DIEFENDORF/ AXEL FROHN/ HERMANN-JOSEF RUPIEPER, Cambridge 1993, p. 175-196; MARIE-FRANCE LUDMANN-OBIER, Die Kontrolle der chemischen Industrie in der französischen Besatzungszone 1945-1949, Mainz 1989.

In contrast, the Soviet programme relied much more on the cooperation of German specialists. Between 1945 and 1947, around three thousand German experts were brought to the Soviet Union to work in research laboratories and special research factories. Almost all of the specialists had technical training, but only a minority of them had a university degree. Their areas of expertise ranged from rocket research and nuclear science to optics and aviation. Most of the experts had previously joined one of the research laboratories set up in the Soviet Zone of Occupation (SOZ), but only a few of them had actually intended to leave Germany. While some nuclear scientists were brought to the Soviet Union in 1945, most of these specialists were deported in a single memorable night in the autumn of 1946. On the night of 21 to 22 October 1946, some 2,300 experts and their families were summarily brought to trains waiting to take them to the Soviet Union.[2]

This essay examines the legitimization strategies of these experts working for two opposing totalitarian dictatorships and how they were viewed by the Soviet authorities. It contributes to an ongoing discussion of the mentality of German experts in the twentieth century, their political views and their thoughts about the relationship between their research and the application of its results.[3] I will start with some general remarks on the relationship between German experts and the Nazi government.

1. Ideology and Politics

The majority of German engineers and scientists were conservative and patriotic. While some were staunch Nazis, most considered themselves to be apolitical. Even if they did not agree with National Socialism, they only resisted if ideological interventions in their research were incompatible

[2] On life and work of the German specialists in the Soviet Union, see CHRISTOPH MICK, Forschen für Stalin. Deutsche Fachleute in der sowjetischen Rüstungsindustrie, 1945-1958, München 2000. See also ULRICH ALBRECHT/ ANDREAS HEINEMANN-GRÜDER/ AREND WELLMANN, Die Spezialisten. Deutsche Naturwissenschaftler und Techniker in der Sowjetunion, Berlin 1992; MATTHIAS UHL, Stalins V-2. Der Technologietransfer der deutschen Fernlenkwaffentechnik in die UdSSR und der Aufbau der sowjetischen Raketenindustrie 1945 bis 1959, Bonn 2001.

[3] KLAUS HENTSCHEL, The Mental Aftermath. The Mentality of German Physicists 1945-1949, Oxford 2007; Science in the Third Reich, ed. by MARGIT SZÖLLÖSI-JANZE, Oxford 2001; UTE DEICHMANN, Flüchten, Mitmachen, Vergessen. Chemiker und Biochemiker in der NS-Zeit, Weinheim 2001; Rüstungsforschung im Nationalsozialismus. Organisation, Mobilisierung und Entgrenzung der Technikwissenschaften, ed. by HELMUT MAIER, Göttingen 2002.

with their professionalism.[4] What Alan D. Beyerchen has said of the German physicists also holds true for the applied scientists and engineers: 'The prevailing majority of scientists in the Third Reich were neither for nor against the National Socialists. They were merely interested in nonintervention in their technical affairs.'[5] These were highly qualified experts who voluntarily placed their creativity at the service of the German military machine.[6]

This 'self-mobilization' (Helmuth Trischler) for the Third Reich can partly be explained by the experiences of the preceding decade. The Weimar Republic had failed to meet the political and professional expectations of these experts. Like most members of the middle classes, the experts were highly patriotic and felt humiliated by Germany's defeat and its consequences. They believed in a strong and powerful Germany and most were inclined towards the political right. Moreover, the Treaty of Versailles had limited military research and the financial shortages were affecting the professional and private lives of scientists and engineers. Many had no jobs and there were no funds available for ambitious research projects. All this changed with the advent of the Third Reich. Applied science was held in high esteem and enormous sums were invested in military research.[7]

Most experts became loyal citizens of the Third Reich, offering their talents to the Nazi government. Hitler was gearing up for war, and scientists and engineers were kept busy developing airplanes and anti-aircraft

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[4] HELMUTH TRISCHLER, Self-Mobilization or Resistance? Aeronautical Research and National Socialism, in: Science, Technology and National Socialism, ed. by MONIKA RENNEBERG/ MARK WALKER, Cambridge 1994, p. 72-87, p. 78-79; KARL-HEINZ LUDWIG, Technik und Ingenieure im Dritten Reich, Düsseldorf 1974, p. 105; GERD HORTLEDER, Das Gesellschaftsbild des Ingenieurs. Zum politischen Verhalten der technischen Intelligenz in Deutschland, Frankfurt am Main 1970, p. 165; PAUL ERKER, Industrie-Eliten in der NS-Zeit. Anpassungsbereitschaft und Eigeninteresse von Unternehmern in der Rüstungs- und Kriegswirtschaft 1936–1945, Passau 1993.

[5] ALAN D. BEYERCHEN, Wissenschaftler und Hitler. Physiker im Dritten Reich, Köln 1980, p. 266 (author's translation); JONATHAN HARWOOD, 'Mandarine' oder Außenseiter? Selbstverständnis deutscher Naturwissenschaftler (1900–1933), in: Sozialer Raum und akademische Kulturen. Studien zur europäischen Hochschul- und Wissenschaftsgeschichte im 19. und 20. Jahrhundert, ed. by JÜRGEN SCHRIEWER/ EDWIN KEINER/ CHRISTOPHE CHARLE, Frankfurt am Main 1993, p. 183-212.

[6] TRISCHLER, Self-Mobilization, p. 83-84.

[7] HARWOOD, 'Mandarine' oder Außenseiter, p. 74-76; ANDREAS HEINEMANN-GRÜDER, 'Keinerlei Untergang'. German Armaments Engineers during the Second World War and in the Service of the Victorious Powers, in: Science, Technology and National Socialism, p. 30-50, p. 39-41; HEINRICH ADOLF, Technikdiskurs und Technikideologie im Nationalsozialismus, in: Geschichte in Wissenschaft und Unterricht 48 (1997), p. 429-444, p. 431-433.

weapons, rockets and substitute materials, tanks and gas chambers. The professional organizations of engineers and managers played an important role in formulating the technological objectives of armament research and development, and in implementing their production. It is true that the Nazis tried to transform the experts into National Socialists, but ideological conformity was not essential for a scientific career in the Third Reich. The treatment of scientists and engineers under Nazi rule confirmed their self-perception as being 'detached from political affairs'.[8] The NS system, however, never completely released the engineers 'from its tentacles, as technology was used neither for the welfare of humanity nor for the welfare of the nation, but exclusively for destruction, with an increasing use of terrorist methods'.[9]

This had certainly been the experience of the rocket scientists, who otherwise enjoyed a high reputation. After the Royal Air Force bombed the buildings of the Army Research Centre (*Heeresversuchsanstalt*) in Peenemünde, the research facilities and part of production were moved underground. In Nordhausen, slave labourers from Dora, an external camp of the Buchenwald concentration camp, worked in the subterranean *Mittelwerke*, where A-4 (V-2) rockets were produced. Thousands of prisoners died of exhaustion or were executed by the SS guards. The leading rocket specialists regularly visited the production tunnels and saw the suffering of the slave labourers.

However, the experts were mostly interested in increasing production; they were less concerned about the human cost.[10] Wernher von Braun fought for scarce resources to realize his plans. Later he defended himself by saying that he had only wanted to construct a lunar rocket. Von Braun was briefly arrested when the *Gestapo* (German secret police) learned about private conversations in which he had indeed said that his main aim was to reach outer space. After the war, the rocket scientists referred to his arrest as proof that they had been using the Nazi regime to further their own peaceable plans. The reality was a bit different, however. During World War II, the purpose of rockets was to destroy human life. After the war, von Braun and his team repudiated any responsibility for the military

[8] BEYERCHEN, Wissenschaftler und Hitler, p. 276; MARK WALKER, The Nazification and Denazification of Physics, in: Technology Transfer Out of Germany After 1945, ed. by MATTHIAS JUDT/ BURGHARD CIESLA, Reading 1996, p. 49-60, p. 56-58.

[9] LUDWIG, Technik und Ingenieure im Dritten Reich, p. 287-301, quote on p. 351 (author's translation).

[10] BURGHARD CIESLA, Das 'Project Paperclip'. Deutsche Naturwissenschaftler und Techniker in den USA (1946 bis 1952), in: Historische DDR-Forschung. Aufsätze und Studien, ed. by JÜRGEN KOCKA, Berlin 1993, p. 287-301, p. 294.

use of rockets and the treatment of slave labourers, although recent research has shown that the prisoners had been explicitly requested by Walter Dornberger, who was responsible for the rocket programme in the Army Weapons Agency (*Heereswaffenamt*), and Arthur Rudolph, a leading member of the rocket team.[11]

In their recollections, the experts hardly touched on such moral problems. Nobody admitted to knowing about the Nazi crimes. The Soviet rocket engineer Boris Chertok asked Irmgard Gröttrup, the wife of the leader of the German rocket team in the Soviet Union Helmuth Gröttrup, how the scientists had dealt with the fact that the prisoners in Nordhausen had worked under terrible conditions with barely any chance of survival. She denied that the majority of the experts had known much about it.[12] They perceived their work as being free from ideology and justified it as a service to the people and to the fatherland. Not they, but the national government was responsible for the use of their inventions and innovations.[13]

2. Survival and Professional Interests

The Third Reich collapsed in May 1945. Germany was no longer a sovereign state. In the difficult period immediately after the war, the experts concentrated on surviving and on ensuring the survival of their families. Nobody knew what plans the Allies had for Germany and whether armament experts would be held to account for their contribution to the German war effort. As mentioned at the outset, special Allied task forces were

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[11] RAINER EISFELD, Mondsüchtig. Wernher von Braun und die Geburt der Raumfahrt aus dem Geist der Barbarei, Reinbek 1996, p. 87-89; MICHAEL J. NEUFELD, Die Rakete und das Reich. Wernher von Braun, Peenemünde und der Beginn des Raketenzeitalters, Berlin 1997, p. 221-223; ERNST STUHLINGER/ FREDERICK ORDWAY, Wernher von Braun. Aufbruch in den Weltraum, München 1992, p. 72-74. See also ERHARD PACHALY/ KURT PELNY, Konzentrationslager Mittelbau-Dora, 1943-1945, Berlin 1990; JEAN MICHEL, Dora, London 1979; MICHAEL J. NEUFELD, Von Braun. Dreamer of Space, Engineer of War, New York 2007.

[12] BORIS CHERTOK, Rakety i liudi, Moskva 1994, p. 132-133. A designer of aircraft engines, Ferdinand Brandner also said that he had never heard of the German death camps. FERDINAND BRANDNER, Ein Leben zwischen den Fronten. Ein Ingenieur im Schußfeld der Weltpolitik, 2nd edition, München 1976, p. 88. Similar comments were made by the German nuclear scientists in Farm Hall. See Operation Epsilon. Die Farm-Hall-Protokolle oder die Angst der Alliierten vor der deutschen Atombombe, ed. by DIETER HOFFMANN, Berlin 1993, p. 33.

[13] Cf. REINHARD SIEGMUND-SCHULTZE, The Problem of Anti-Fascist Resistance of 'Apolitical' German Scholars, in: Science, Technology and National Socialism, p. 312-323.

employed to hunt down the most important specialists, who became part of the war booty. Less prominent scientists had two options: They could offer their services to one of the Allies or they could try to hide their qualifications until the situation had clarified. Most experts decided to collaborate when they realized the extent of the victorious powers' interest in their knowledge and expertise. Immediately after the war, calories were more tempting than money. Science went 'in search of bread'. Cooperation with the Allies offered the quickest way out of postwar misery.[14] Many experts also did not exclude the Soviet option. The physicist Heinz Barwich justified his decision to go to the Soviet Union as follows: 'I was thirty-three years old, married, had three small children, a fourth was expected. And I had no job. This decision was therefore not difficult for me.'[15]

However, other experts had more difficulties in justifying their decision to work for the former enemy. If their work involved armament research, such weapons could be used to threaten Germany. Soviet officials therefore told rocket specialists that their skills were needed to develop rockets for postal transport or for space flights. However, while still working in the SOZ the Germans were obliged to

> 'recognize with great uneasiness that the original purpose, namely the development of postal and lunar rockets, was not pursued at all. The tasks were completely geared to military applications and I was forced to realize that there could be no way out for me, the dice had fallen. […] We had become a well-trained, intellectually agile community which loved its work, which believed like any other group of engineers in a similar position that the leadership of the state fairly and wisely disposes of the results of the work'.[16]

Manfred von Ardenne reported that initially participation in the atomic bomb project was not mentioned to him. The research targets only changed after the first atomic bomb had been dropped on Hiroshima. Von Ardenne did try not to become involved in the project, but after a while he changed his mind. He said that he realized that a Soviet atomic bomb would help to create a balance of power and therefore to secure peace. 'This view formed for all of us the moral justification for our cooperation in creating the

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[14] KLAUS-DIETMAR HENKE, Die amerikanische Besetzung Deutschlands, München 1995, p. 750.

[15] HEINZ BARWICH/ ELFI BARWICH, Das rote Atom, München 1967, p. 21 (author's translation).

[16] WERNER ALBRING, Gorodomlija. Deutsche Raketenforscher in Rußland, Hamburg 1991, p. 56-58 (author's translation).

technical conditions for the construction of nuclear weapons.'[17] This is hard to believe. Von Ardenne, who went on to become one of the best-known figureheads of the GDR's scientific community after his return to East Germany, had not voluntarily opted to work for the Soviet side in 1945. The GDR authorities kept a letter in which von Ardenne had offered his services to the Americans. This option was no longer open to him when the Red Army arrived in Berlin before the American troops. He had no other choice but to accept the offer to work in the Soviet Union.[18]

Other experts saw their work for the Soviet Union as part of the German reparations for the war damage.[19] A German engineer in the SOZ promised in August 1945: 'The undersigned has voluntarily placed his full capacity for work at the service of the reparations, and as the head of the engineer's office of the Soviet Technical Governmental Committee does direct his efforts to this end.'[20] Manfred Gerlach, an aircraft engine designer, stated that he had seen his work from the outset as a 'valuable contribution to the reparation of the German war guilt'.[21]

The truth of such statements must be called into question. They were often made in connection with demands to return to Germany. The experts argued that they had contributed enough to the reparations. They felt victimized and saw no reason why they should pay with their freedom – on behalf of the German people – for the crimes of the Third Reich. The nuclear scientists in British internment camps reacted similarly. Their British contact person noted in summer 1945 that the internees had not realized 'that they are members of a vanquished nation'.[22]

The experts' perception of their profession as apolitical facilitated cooperation with the Stalinist regime. The Soviet leadership focused on the scientific knowledge and technical abilities of the experts. Like their Soviet

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[17] MANFRED VON ARDENNE, Ein glückliches Leben für Technik und Forschung. Autobiographie, Zürich 1972, p. 194-195, quote on p. 205 (author's translation). See also the report on German nuclear scientists in the Soviet Union, September/October 1947 in the Bundesarchiv Koblenz (BAK), OMGUS, AGTS, 38/1.

[18] VON ARDENNE, Ein glückliches Leben, p. 205.

[19] WERNER HOLZMÜLLER, Ein Physiker erlebt das 20. Jahrhundert, ed. by MANFRED HEINEMANN, Hannover 1993, p. 76.

[20] Memorandum of the (German) director of the engineer's office of the Soviet Technical Governmental Committee in the Soviet Zone of Occupation (Electrotechnics), 1 August 1945; Archive of the Russian Academy of Sciences [Arkhiv Rossiiskoi Akademii Nauk (ARAN)], f. 596, op. 2, d. 139, l. 1-22 (author's translation).

[21] Gerlach to Minister of Internal Affairs (MVD) Sergei N. Kruglov, 23 June 1948; Russian State Archive of the Economy [Rossiiskii Gosudarstvennyi Arkhiv Ėkonomiki (RGAĖ)], f. 8044, op. 1, d. 1797, l. 21-27.

[22] Operation Epsilon, p. 208-209 (author's translation).

colleagues, the German experts were not involved in any decisions on how their inventions would be used. While Soviet experts at least participated in the organization of the research and the setting of technological targets, most German specialists had little say in either. This had been different in the Third Reich, and even in the SOZ their influence had been greater. In the Soviet Union, the leaders of the German research teams tried to influence the allocation of resources or decisions on concrete technological targets. However, this only succeeded if a powerful Soviet 'patron' exerted his influence.[23]

The situation of the experts also differed in another respect from their position in the Third Reich and from that of Soviet specialists. Like their Soviet colleagues, the Germans were limited to their narrow field of specialization. However, the Soviet government expected ideological conformity, loyalty and a strong work ethos from Soviet experts. They were required to support the decisions of the leadership unconditionally, inasmuch as such decisions were claimed to be identical with the interests of the state, the nation and the future of socialism. Soviet experts thus also had a patriotic or ideological motivation for their work. Such motivations were absent in the German collectives. They continued to be strangers who had been deported to the Soviet Union, and the authorities made no effort to integrate them. They were confined to their laboratories and factories and as far as possible kept isolated from Soviet life.[24]

The German experts interpreted their deportation to the Soviet Union as a breach of contract. Most would have willingly put up with the 'fear of losing their livelihood and the identity crises'[25] inherent in working in Germany at the time and would have gladly renounced the 'reorientation' involved in working in the Soviet Union. Only a minority was willing to go to the Soviet Union for a limited period. However, the deportation was perceived as 'injurious to the honour' of those who 'had already decided that they would not resist a later transfer to the U.S.S.R.'.[26]

Some scientists strove to realize their projects and were ready to work for any state willing to give them this opportunity. In the research laboratories in the SOZ and in the first years in the Soviet Union, they constantly tried to solve problems and to overcome technical difficulties. They asked

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[23] MICK, Forschen für Stalin, p. 179-181.

[24] Ibid., p. 188-190, 220-222.

[25] ALBRECHT/ HEINEMANN-GRÜDER/ WELLMANN, Die Spezialisten, p. 185-187.

[26] Protest letter, 29 October 1946, in: IRMGARD GRÖTTRUP, Die Besessenen und die Mächtigen. Im Schatten der roten Rakete, Hamburg 1958, p. 243-244 (author's translation).

for help to realize their plans and deplored obstructions by Soviet rivals and the slowness of communication.[27]

The rocket scientists in the U.S.A. held similar views. Wernher von Braun tried to resume the work he had done in the Third Reich. Rocket development was big science and very expensive, but had no commercial uses. It was only encouraged because of its military usefulness. Von Braun worked to preserve the cohesion of the German team in the United States to ensure that he played the leading role in improving the V-2. In the end, the members of the rocket team working in the U.S.A. turned out to be far more successful, both personally and professionally, than their colleagues in the Soviet Union.

However, this was not a foregone conclusion. In 1946, the rocket researchers in the SOZ had better working conditions than their rivals working in the U.S.A. or under British control, and in 1946 Gröttrup had more influence on the scope of his work than von Braun did. The Soviet leadership had realized the military potential of rocket technology and redirected vast resources to the development and production of rockets, while the United States wanted to profit from German knowledge, but did not yet have a programme for future developments. Immediately after the forced transfer of the German team to the Soviet Union, the leading members of the rocket group were highly motivated – despite being deeply dissatisfied by their move to Moscow and later to the island Gorodomlia in Lake Seliger. In the end, Gröttrup failed to realize his ambitious plans, as the Soviet leadership wanted the German experts primarily to assist with the reconstruction and transfer of German technology and wished to profit from their creativity without giving them any responsibility for implementing their ideas. In contrast to Wernher von Braun working in Peenemünde and later in Houston, the German groups in the Soviet Union were not involved in the making of rockets. These tasks were reserved for the local experts.[28]

Not only prominent scientists, but also engineers and technicians did not much care whom they were working for. One expert is quoted in a Soviet trade union report:

> 'Since my early years I was educated under the Hitler government, with National Socialist principles. I am sticking to these beliefs, and I do not intend to change them. It does not matter at all for whom and in which country I work as a specialist. It also does not matter whether I work for military purposes and for the domestic needs of the country. The most important thing for me is to have a job and an income. The Hitler government did not bring bad things to

[27] PAVEL KNYSHEVSKII, Dobycha. Tainy germanskikh reparacii, Moskva 1994, p. 75.

[28] MICK, Forschen für Stalin, p. 137-139.

> Germany. Hitler got rid of unemployment and gave every German work and the right to live.'[29]

National Socialist convictions and an unreserved willingness to cooperate with the Soviet Union were compatible. A good example of this is Ferdinand Brandner, a designer of aircraft engines who had been an ardent National Socialist. In Kuibyshev, he made himself unpopular with his colleagues because he worked hard to develop a Turboprop engine. 'My will to cooperate was respected in every way and was rewarded.' Brandner hoped that unconditional cooperation would improve his chances of a quick return to Germany.[30] This view was shared by other specialists. A delegate of the Soviet trade unions reported on a German aviation expert in factory no. 96 with a 'reactionary' world view, who worked very productively because he hoped this would help him return to Germany.[31]

Soviet reports categorized a considerable number of German experts as fascists. The reports did not differentiate between nationalist, reactionary and fascist. For the Soviet authorities they were all the same. It is true that quite a number of the experts still shared National Socialist views.[32] Defying the Soviet efforts to reeducate them, some openly expressed National Socialist views. In factory no. 589, part of the system of the Ministry of Armaments, some Germans celebrated Hitler's birthday in April 1948. The specialist K. is quoted with the words: 'I cannot live among enemies.' It is interesting that K.'s hostile attitude does not appear to have affected his work. He is described in the report as a specialist who worked well.[33]

The articulation of National Socialist views was not always an expression of deep-seated beliefs, but could also be a form of protest against ideological indoctrination. The experts did not want to be confronted with the crimes of the Third Reich and mistrusted the Soviet interpretation of events. In factory no. 2 of the system of the Ministry of Aviation Industry, the Germans boycotted films on World War II which showed the 'fight of the Soviet people against Hitler's Germany'. After listening to political speeches by Soviet propagandists, the audience asked questions 'of a reac-

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[29] Quote from Kurt Schmidt. Report on the German Specialists in NII-380, 13 June 1949; State Archive of the Russian Federation [Gosudarstvennyi Arkhiv Rossiiskoi Federatsii (GARF)], f. 5451, op. 43, d. 767, l. 131-136 (author's translation).

[30] BRANDNER, Ein Leben zwischen den Fronten, p. 44-46, 162 (author's translation).

[31] Report of Iu. P. Osadchii on the situation in the factories no. 326 and 197 of the Ministry of the Industry of Means of Communication (MPSS) and factory no. 96 of the Ministry of Chemical Industry (MKhP), 14 April 1949; GARF, f. 5451, op. 43, d. 767, l. 157-166.

[32] On German physicists in general, see HENTSCHEL, The Mental Aftermath.

[33] Report of V. M. Tararov, 31 May 1948; GARF, f. 5451, op. 43, d. 668, l. 181-183.

tionary nature'. The specialists criticized the loss of Germany's eastern territories and expressed their distrust concerning the building of socialism in the Soviet Union and the Soviet peace policy.[34] A representative of the trade unions noted disappointedly in November 1949: 'Up to now, not a single Nazi has renounced his National Socialist views.'[35]

3. Self-organization and Resistance

As far as the authorities were concerned, the German experts had not lost their middle-class conditioning even after seven years in the Soviet Union, but the industrial ministries and the Soviet leadership did not much care. They wanted to exploit the experts and placed little weight on political reeducation. The groups of experts remained a foreign body in the Soviet Union and were not only isolated from Soviet research, but also – as far as possible – from Soviet society. This unique position protected the specialists from ideological indoctrination and the terror of Stalinism, and made it possible to establish some forms of self-government. Officials responsible for agitation and propaganda (*agitprop*) could not count on the factory management or industrial ministries to support their propaganda efforts, and attempts to split the German collectives into workers and progressive experts on the one side and class enemies and reactionary specialists on the other side failed. The representatives of the party and the trade unions fought against middle-class and counter-revolutionary views, but their hands were tied. The industrial ministries were exclusively interested in research results, not in political views.[36]

The German collectives demonstrated a relative, albeit precarious cohesion, and reacted with hostility when the authorities interfered in the internal relationships of their community.[37] Members of the Socialist Unity Party of Germany (in German: *Sozialistische Einheitspartei Deutschlands*, SED) suffered just as much as their conservative or nationalist colleagues from cramped housing conditions, reduced freedom of movement, the

[34] Olekhnovich and Rabinovich on the political and cultural work among the German specialists in 1948-49, 28 December 1949; GARF, f. 5451, op. 43, d. 854, l. 119-136.

[35] Kolychenkov (factory no. 2) to Afanas'ev, 18 November 1949; RGAĖ, f. 8044, op. 1, d. 6441, l. 30-34 (author's translation). Olekhnovich to Deputy Minister of the Aviation Industry M. M. Lukin and B. Rzhanov, 23 November 1949; RGAĖ, f. 8044, op. 1, d. 6441, l. 35-36.

[36] MICK, Forschen für Stalin, p. 240-242.

[37] German specialists of NII-160, Friazino, to the chairman of the VCSPS, V. V. Kuznetsov, 18 June 1948; GARF, f. 5451, op. 43, d. 669, l. 39-40ob.

impossibility of vacations in Germany, the lack of rights and inadequate social security.[38] The experts turned to their professional superiors as representatives of their interests. Their isolated and uncertain situation produced a sense of common fate, which overlaid the differences between scientists, engineers and workers.

The self-organization of the Germans was born out of necessity. They created committees which represented their interests in negotiations with the Soviet management.[39] In factory no. 2, they elected a *Vertrauensrat* (council of trust) – following practice in the Third Reich – in May 1947, which the Soviet trade union representative described as an 'organization of openly fascist character'. The MGB instructed the factory management to dissolve the council. However, it continued to exist as the 'Society for the Defence of German Interests'.[40]

The creation of councils of trust was an expression of – *horribile dictu* in the Soviet Union – uncontrolled self-organization, and could not be tolerated by those Soviet organizations responsible for political control. The Germans were finally forced to dissolve this body. On Gorodomlia, the Germans had to surrender even their typewriters to prevent them from duplicating leaflets and electoral slips.[41] However, the councils of trust are only one example of the organizational repertoire available to the Germans. More important and more persistent were the funds for mutual help. Their administration lay in the hands of the leading specialists – fascists in the view of the trade unions.[42] The trade unions later forced the collectives to accept new statutes which placed such funds under the control of the trade union committee.

In factory no. 2, the positions of 'former Nazis' continued to be strong – at least in the opinion of the management – even after the fund for mutual help was reorganized. The new statute had brought no fundamental changes, and in 1949 such organs of self-government still functioned ac-

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[38] Murashev (factory no. 1) to Afanas'ev, 5 December 1949; RGAË, f. 8044, op. 1, d. 6440, l. 38-55.

[39] Report of Osadchii on the situation in factories no. 96, 326 and 127, 14 April 1949; GARF, f. 5451, op. 43, d. 767, l. 157-166.

[40] Report Gusinskii on German specialists in factory no. 2 of the MAP, May 1948; Russian State Archive for Social-Political History [Rossiiskii Gosudarstvennyi Arkhiv Sotsial'no-Politicheskoi istorii (RGASPI)], f. 17, op. 132, d. 4, l. 40-48 (quoted in KNYSHEVSKII, p. 67-76). See also the statute of the funds for mutual help of factory no. 2; GARF, f. 5451, op. l 43, d. 668, l. 269-287.

[41] KURT MAGNUS, Raketensklaven. Deutsche Forscher hinter rotem Stacheldraht, Stuttgart 1993, p. 187.

[42] Osadchii to Rzhanov, 20 October 1949; GARF, f. 5451, op. 43, d. 768, l. 15-22.

cording to their own rules. The leaders of the German collectives controlled the funds and succeeded in preserving their authority.[43]

Teams which cooperated for a long time had often been deported together. They retained their corporate identity, even if their old company had ceased to exist.[44] Experts who joined these groups at a later date found it hard to integrate, especially if they breached the solidarity of the group in dealings with the authorities.[45] In factory no. 96 of the Ministry of Chemical Industry, a specialist was bullied by his colleagues because he was highly motivated and openly antifascist. On the 'initiative of the reactionary specialists' he was cut dead by most of the Germans, who stopped speaking to him or greeting him.[46] Kurt Berner reports from the Scientific Research Institute NII-1323 (Nauchno-Issledovatel'skii Institut – NII) that very few German specialists supported the Soviet Union unconditionally and that they were cut dead by all the others.[47]

To a certain extent, representatives from the trade unions did manage to penetrate the German collectives, but they were unable to disband the old structures completely. Such infiltration succeeded when existing collectives and work groups were split up and the German experts worked in predominantly Soviet teams. It was only then that leaders of German teams lost their influence. These teams, however, were only dissolved when the managers expected that this would improve productivity and increase the likelihood of meeting the targets. No team was reorganized for political reasons. In factory no. 393, the German collective was only reorganized when the management was dissatisfied with the results of their work. The director thought that the influence 'of reactionary elements' had had a negative impact on the productivity of the whole group.[48]

Their shared fortunes strengthened the cohesion of the German collectives in dealing with the authorities. This does not mean that there were no

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[43] Service Department in factory no. 2 (Kolychenkov) to Afanas'ev, 18 November 1949; RGAĖ, f. 8044, op. 1, d. 6441, l. 30-34. Olekhnovich to Lukin and Rzhanov, 23 November 1949; ibid., l. 35-36.

[44] BURKHARD CIESLA, Die Transferfalle. Zum DDR-Flugzeugbau in den fünfziger Jahren, in: Naturwissenschaft und Technik in der DDR, ed. by DIETER HOFFMAN/ KRISTIE MACRAKIS, Berlin 1997, p. 193-211, p. 205-206.

[45] Lübke to the director of the branch of NII-400 Maksimov, 25 April 1949; RGAĖ, f. 8899, op. 1, d. 1271, l. 101-105.

[46] Report of Osadchii on the situation in factories no. 96, 197 and 326. 14 April 1949; GARF, f. 5451, op. 43, d. 767, l. 157-166.

[47] KURT BERNER, Spezialisten hinter Stacheldraht. Ein ostdeutscher Physiker enthüllt die Wahrheit, Berlin 1990, p. 184-185.

[48] Gusinskii and Osadchii on the situation in factory no. 393, April 1948; RGASPI, f. 17, op. 125, d. 591, l. 146-152.

differences and disagreements. However, the conflicts were not between antifascists and 'fascists', but over other contentious issues. The Germans primarily quarrelled about the best strategy to return to Germany as quickly as possible. Other conflicts involved salaries and different standards of living, stemmed from the quarrelsome disposition of some of the members of the group or arose in connection with family disputes.

To a certain degree, German experts were able to resist the impositions of the Stalinist regime.[49] They quickly learned how to play the system, drawing on their experiences in the Third Reich. Both totalitarian systems were polycratic. The experts appealed to Stalin or other party and state leaders if the factory management or the industrial ministries ignored their protests. These complaints forced the factories and ministries to justify their measures.[50]

The specialists could afford to be more critical than Soviet citizens. They even quarrelled with cadres of the security organs.[51] In the end, only a few dozen German experts were arrested, although the party committees and the security organs had informers within the German groups who reported countless anti-Soviet conversations. Actions which would have resulted in Soviet citizens being deported to Kolyma (in the *Gulag*) for years usually did not lead to arrests. However, the return of the most outspoken critics to Germany was delayed. The Ministry of State Security (MGB) forced such persons to stay in the Soviet Union for up to two years longer. The security organs thought that this would be punishment enough, and the experts did indeed perceive it as a heavy punishment.[52]

If work discipline was violated, the Germans were given a warning or had to pay fines. However, there were also serious cases in which the Soviet courts imposed tough sentences. The ringleaders of acts of insubordination could expect to be particularly severely punished unless they were indispensable experts whose professional knowledge was essential for the success of their projects. Two specialists were arrested in 1950 in factory no. 108 and in Obninsk as 'ringleaders' of a half-day strike and both were

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[49] TRISCHLER, Self-Mobilization, p. 72-73.

[50] The German specialist Heinz Lübke to Iosif V. Stalin, 10 October 1949; RGAĖ, f. 8899, op. 1, d. 1271, l. 100. Minister of the Ship-building Industry Aleksei A. Goregliad to Deputy Chairman of the Council of Ministers Ivan F. Tevosian, 9 January 1950; ibid., l. 98. G. Aleksenko (MPSS) to Minister of Foreign Affairs (MID) Andrei Ia. Vyshinskii, 19 May 1948; Archive of Foreign Policy of the Russian Federation [Arkhiv Vneshnei Politiki Rossiiskoi Federatsii (AVP RF)], f. 82, op. 35, d. 61, l. 42.

[51] BARWICH/ BARWICH, Das rote Atom, p. 47-48, 119-120, 137.

[52] See the letters of German experts and members of their families to Stalin, the Council of Ministers and other Soviet institutions, GARF, f. 5446, op. 59, d. 4830, l. 1-43.

sentenced to twenty-five years in prison.[53] In factory no. 1, an employee with a 'hostile attitude' was sentenced to ten years in prison.[54]

In other cases, even strikes were not penalized. The contracts of the experts in NII-380 ended in May 1949, but the director of the institute ignored the German demands to return home and was not willing to negotiate the terms of a new contract. For a period of one week, thirteen specialists did not come to work. Only when the Industrial Ministry intervened and the contracts were extended by one year did the Germans resume work again.[55] After the new contract had ended, the same situation recurred.[56]

Some of the more ambitious experts, conscientious engineers and skilled workers despaired of Soviet slovenliness. Another quite strong group did work to rule but no more. Already in 1947 and 1948, on Gorodomlia some experts started to control their creative output and reduced their efforts. The authorities interpreted this as a deliberate attempt to prevent the fulfilment of the plan. More intense controls and a strict work discipline defused this problem, although some Germans continued to show forms of passive resistance in 1949.[57]

During the first two years, the specialists had hoped to be able to earn the right to return home by dint of hard and successful work. When their old projects were finished, the experts received extra money, but they were still not allowed to return. Instead, new targets were set. The German collectives disagreed on how best to react. Some experts continued to hope that unconditional cooperation would give them a better life and a better chance of returning to Germany. Brandner introduced a strict working regime in his department to – as he put it – stave off the despair of the other members of his group. However, his measures elicited hatred and mistrust. Brandner believed that 'only our work, our technical achievement' would guarantee a return to Germany.[58] Some of the members of his group held different views. Protests by former colleagues who had moved

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[53] ANDREAS HEINEMANN-GRÜDER, Die sowjetische Atombombe, Berlin 1990, p. 111; BARWICH/ BARWICH, Das rote Atom, p. 52.

[54] Gribanov (MID) to the director of the Department for the Affairs of Prisoners of War and Internees of the Ministry of Internal Affairs (MVD), A. Z. Kabulov, 14 January 1953; AVP RF, f. 82, op. 41, d. 66, l. 13.

[55] Report on the German specialists in NII-380, 13 June 1949; GARF, f. 5451, op. 43, d. 767, l. 131-136.

[56] N. V. Popova (All-Union Central Council of the Trade Unions, VCSPS) to Nikolai A. Bulganin, 8 June 1950; GARF, f. 5451, op. 43, d. 855, l. 50-52.

[57] Report of Osadchii on NII-88, 14 June 1949; GARF, f. 5451, op. 43, d. 767, l. 167-172.

[58] BRANDNER, Ein Leben zwischen den Fronten, p. 202.

to the Federal Republic of Germany were later to prevent Brandner from being appointed to a top position in the company Humboldt-Deutz in the 1950s.[59]

Brandner and other specialists who continued to work hard to realize their projects were despised by other experts because it was felt that they created a rift in the group's solidarity against the Soviet authorities. In the first two to three years, a commonly held view among many of the experts was that the earlier they fulfilled the plan, the earlier they could return home.[60] In 1950, the rocket specialists were therefore doubly frustrated. On the one hand, their plans were delayed and insufficient resources were provided, and on the other their contribution to the reconstruction of the A-4 (V-2) and their new ideas had not been rewarded with the permission to return home.[61]

The uncertainty of their situation affected the mood in the groups.[62] In spite of their similar fate, the specialists reacted differently to their enforced stay in the Soviet Union. Some came to terms with their situation, others were depressed or bitter. For Kurt Magnus from the rocket team, these years were not, actually, a time of need, but of tantalizing insecurity and fear.[63] He saw himself as living in a 'Gulag-de-luxe'.[64] Even the lively cultural life on Gorodomlia became a contentious issue. Not all Germans enjoyed the sport events, the amateur theatricals and concerts. They feared the Russians would believe that the Germans were now reconciled with their fate and no longer wanted to return to Germany.[65]

The German experts developed effective strategies to convince the authorities that it would be better to let them return to Germany. Being creative – this was clear to many, but by no means to all Germans – meant extending their stay in the Soviet Union. Over the years, dissatisfaction grew and the work ethic sank. After 1949, many leading scientists did not take on new responsibilities. Like their subordinates, they wrote letters of protest to the authorities and did everything they could to become a liability for the factories and ministries. Most experts worked with little enthusiasm. They did what was required, but stopped coming up with new ideas.

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[59] Ibid., p. 180-181, 188, 234-235.

[60] GRÖTTRUP, Die Besessenen und die Mächtigen, p. 128.

[61] Ibid., p. 178-179; MAGNUS, Raketensklaven, p. 198, 222; ALBRING, Gorodomlija, p. 208-210.

[62] MAGNUS, Raketensklaven, p. 62-64.

[63] Ibid., p. 12-13; BARWICH/ BARWICH, Das rote Atom, p. 154.

[64] MAGNUS, Raketensklaven, p. 166.

[65] ALBRING, Gorodomlija, p. 177-179.

With this canny form of resistance, they wanted to demonstrate that great achievements could no longer be expected from them.[66]

Hence, Gröttrup was joined by most members of the German group when he refused to participate in the development of a new anti-aircraft system. Other specialists who were willing to participate were brought to another laboratory and only returned home several years after the last of the less motivated experts had left the Soviet Union.[67] In factory no. 2, the director N. M. Olekhnovich noted in December 1949 that the key experts were no longer doing any creative work or making new suggestions.[68] A significant number of German specialists in the system of the Ministry of Armaments was disinclined to stay in the Soviet Union and wanted to return to Germany. These experts did not show any initiative and were no longer interested in fulfilling plan targets.[69] During the final phase of his stay, Nikolaus Riehl, who worked on the atomic project, refused to accept new scientific tasks and influenced his colleagues to act in a similar manner.[70]

This behaviour can be interpreted as a form of passive resistance. The Ministry of Internal Affairs (MVD) intervened only if the experts switched to open confrontation. Resistance was only possible in the professional arena. The question arises here whether such resistance would not also have been possible in the Third Reich, and whether this does not undermine the argument that the experts had no alternative to mobilizing their creativity for the Nazis. Even totalitarian dictatorships cannot simply force experts to be creative. It is impossible to know whether a scientist does not want to be creative or whether he simply cannot. The Soviet leadership was not blind to this fact. The best incentives for increasing creativity were not fear and threats, but positive sanctions, high salaries and privileges.

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[66] Murashev (factory no. 1) to Afanas'ev, 5 December 1949; RGAĖ, f. 8044, op. 1, d. 6440, l. 38-55.

[67] Ibid., p. 178-179; MAGNUS, Raketensklaven, p. 198, 222; ALBRING, Gorodomlija, p. 208-210.

[68] Osadchii to Rzhanov (VCSPS), 20 October 1949; GARF, f. 5451, op. 43, d. 768, l. 15-22.

[69] Ustinov to Bulganin, 3 February 1950; RGAĖ, f. 8157, op. 1, d. 1379, l. 25-28.

[70] Report on Nikolaus Riehl, 7 April 1955; Stiftung Archiv Parteien und Massenorganisationen der DDR im Bundesarchiv (SAPMO), NL Ulbricht, NY 4182/978.

4. Conclusion

The Allies differentiated between science and technology on the one hand and the consequences of their use on the other. Like their new employers, the German specialists perceived scientific activity as apolitical. This made the experts useful for the respective political systems and allowed them to pass easily through the denazification procedures. Their research results were transferred to the victorious Allies, and their knowledge and creativity exploited. For these scientists and engineers, the end of the war did not interrupt their professional activities. They continued to work on their old projects, now no longer for the Third Reich, but instead for the former enemies of Germany, which in their turn rewarded them for their services with high salaries, favourable accommodation and food parcels.

Respect for their abilities absolved the specialists from reflecting on their work for the Third Reich, but for some these privileges were bought at a high price – the loss of their personal freedom. Most experts had voluntarily joined the research laboratories in the SOZ, but they did not intend to work in the Soviet Union. They were brought there by force and now had to work for a state which was not willing to integrate them. They could not change their jobs or leave the country. Their main interest lay in effecting a rapid return to Germany. Hence, it is not possible to speak of an 'easy integration of the German specialists in the Soviet Union', either personally or professionally – not because of individual scruples, but because of the unfavourable conditions under which they operated.[71] Soviet research organization differed considerably from what the German experts were used to in Germany, and the adaptation to the new research culture proved to be slow and difficult. Furthermore, the German experts were sequestered away from Soviet research and their knowledge gradually became outdated. This process of dequalification made them less and less valuable for the industrial ministries in whose systems they were working. Their high salaries and the enormous costs of isolating them from Soviet society made them too expensive. The ministries wanted to get rid of them as quickly as possible, but particularly the leading scientists knew too much about recent Soviet scientific developments and were thus obliged to spend between one and five years in the Soviet Union, even after their original research projects had been completed.[72]

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[71] HEINEMANN-GRÜDER, 'Keinerlei Untergang', p. 49.

[72] MICK, Forschen für Stalin, p. 286-288.