

SURVEY

Fordism and Unfree Labour: Aspects of the Work Deployment of Concentration Camp Prisoners in German Industry between 1941 and 1944^{*}

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SUMMARY: This article examines the relationship between Fordism and unfree labour in Nazi Germany. Fordism is understood here as a form of workplace rationalization (especially assembly-line production), but also as a “technology of domination” and an “exploitation innovation”. In contrast to the Weimar Republic, Fordism was established in broad sectors of German industry under Nazi rule in the form of “war Fordism”. In order to examine the connections between the specific historical variants of these two apparently contradictory production regimes – Fordism and forced labour – the article focuses on the “labour deployment” of the most severely terrorized and brutalized group of labourers in Nazi Germany: concentration camp prisoners. Surveying the existing literature, it explores the compatibilities and tensions between Fordism and the deployments of concentration camp prisoners in German industry. In closing, several theses are presented on how Fordism between 1941 and 1944 can be classified within an entire history of Fordism in Germany.

“Fordism” advanced to a distinctive feature of the past century. Not least in Germany the innovations in work organization and production technology tied to the names of Henry Ford and Frederick W. Taylor, as well as the social visions especially of the United States automobile king decisively influenced the short twentieth century.¹ During the golden

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1. The term “Fordism” can be traced back to Friedrich von Gottl-Ottlilienfeld, a German professor of political economy (at the University of Kiel and after 1926 at the University of Berlin) and Ford enthusiast. See his lecture of May 1924, “Fordismus? Von Frederick Winslow Taylor zu Henry Ford”, at the Institut für Weltwirtschaft [Institute for the World Economy] of

1920s in Germany – which began after the currency stabilization of 1923–1924 and ended (at the latest) with Black Friday, 25 October 1929 – Fordism was debated intensely everywhere. These discussions were triggered by Henry Ford’s autobiography, which had been translated into German in 1922, but only became a big seller at bookstands beginning in the autumn of 1923.² Broad segments of German society far beyond managers and ergonomists read and discussed Ford’s *My Life and Work*, translated into German as *Leben und Werk*. In contrast, assembly lines were rarely established in factories themselves, and when they were then only as assembly islands. The Reichsausschuss für Arbeitszeitstudien (REFA) [Reich Committee for Labour Time Studies], which had been founded in 1924 and sought to establish in German manufacturing industry the Taylorist principles of a rigorous division of complex work stages into innumerable small steps with few, repetitive hand movements, had only limited effect prior to 1933.³ This changed fundamentally with the Nazi assumption of power. Fordism in German factories did not first become a mass phenomenon during the “Wirtschaftswunder” of the Federal Republic of Germany; it had already begun to be established on a broad basis in manufacturing industry during the Third Reich.

As is well known, the term Fordism is open to interpretation. The connotations associated with it can apply far beyond the sphere of the workplace into other social domains or even suggest a specifically conservative variant of the social-economic absence of crises in a utopian sense for society as a whole.⁴ This issue will not be addressed here. The focus rather is the workplace rationalization movement connected to the

the University of Kiel, and his lecture – also from 1924 – entitled “Industrie im Geiste Henry Fords” at the Hamburger Überseeclub (in which he claimed for himself the birthright for coining the term “Fordism”) as well as his articles “Fordismus” and “Fordisation”, written in the spring of 1925 for the second volume of *Handwörterbuch des Kaufmanns. Lexikon für Handel und Industrie*. Gottl-Ottlilienfeld combined these separate publications and three further articles into a book entitled *Fordismus. Über Industrie und Technische Vernunft*, the third edition of which appeared already in the summer of 1926. Around 1930 and independent of Gottl-Ottlilienfeld, Antonio Gramsci also identified the great significance of Americanism and Fordism for European societies at the time. See Antonio Gramsci, “Americanism and Fordism”, in *Selections from the Prison Notebooks*, Q. Hoare and G. Nowell Smith (transl. and eds), (New York, 1971), pp. 277–318.

2. On Henry Ford, his autobiography, his political-ideological attitudes, and his social “visions”, see the recent summary by Christiane Eifert, “Antisemit und Autokönig. Henry Fords Autobiographie und ihre deutsche Rezeption in den 1920er Jahren”, in *Studies in Contemporary History/Zeithistorische Forschungen*, 6 (2009), pp. 209–229.

3. At the height of its influence in 1929, the REFA trained 1,650 time-study engineers. In the prewar years, this figure rose to 6,000 and in 1943 finally to 12,000.

4. On the “Fordist century” and the different levels of meaning of the term “Fordism”, see Rüdiger Hachtmann and Adelheid v. Saldern, “‘Gesellschaft am Fließband.’ Fordistische Produktion und Herrschaftspraxis in Deutschland”, in *Studies in Contemporary History/Zeithistorische Forschungen*,

slogan “Fordism”: the introduction of systems of assembly-line production (mostly on conveyor belts, upon which in the ideal case a product is transported from an unprocessed state to completion from workstation to workstation); the segmentation of originally complex work procedures and their reduction to a few, repetitive hand movements (for jobs that even after 1945 were carried out primarily by women and by immigrants⁵ of both sexes); as well as the corresponding changes to the general organization of work.

The term “war Fordism” – as a special form of Fordism – will thus be used here for the years starting in 1933, in the first place because the economy of the Third Reich stood under a bellicose sign from the very beginning and made rearmament a top priority, and second because prior to 1939–1945 certain social conceptions often associated with the slogan “Fordism” – in particular the establishment of a mass consumer society – were not central goals or were implemented only rudimentarily and in a specifically refashioned form.⁶ At the latest beginning in 1934 the motto “guns instead of

6 (2009), pp. 186–208, as well as *idem*, “Das fordistische Jahrhundert. Eine Einleitung”, in *ibid.*, pp. 174–185 (and the older literature identified there).

5. In 1970 in the Federal Republic of Germany around 60 per cent of unskilled labourers – a significant percentage of them employed on assembly lines – were women and foreigners. In the final third of the twentieth century the Fordist rationalization proletariat in Germany was primarily female, which is also evident from the fact that more than half of German female workers performed unskilled jobs, whereas this was the case for only one-fifth of German male workers. See Josef Mooser, *Arbeiterleben in Deutschland 1900–1970. Klassenlagen, Kultur und Politik* (Frankfurt, 1984), p. 59.

6. Contrary to the dictum, for instance, of Shelley Baranowski, the Nazis took quite seriously the establishment of a mass consumer society – albeit a mass consumer society on a racist foundation intended solely for the benefit of the “Aryan master race” and “racially related” peoples. This objective was to be actively pursued on a broad basis following the Nazi’s “final victory”. Hasso Spode has convincingly argued that certain elements of Nazi social policies prior to 1939, especially the DAF sub-organization, the “NS-Gemeinschaft ‘Kraft durch Freude’” (KdF) [The National Socialist Community “Strength through Joy”] and KdF social tourism, had at least a partially Fordist character. See Hasso Spode, “Ein Seebad für zwanzigttausend Volksgenossen. Zur Grammatik und Geschichte des fordistischen Urlaubs”, in Peter J. Brenner (ed.), *Reisekultur in Deutschland: Von der Weimarer Republik zum ‘Dritten Reich’* (Tübingen, 1997), pp. 7–47; *idem*, “Mass Tourism and the Third Reich: The ‘Strength through Joy’ Seaside as an Index Fossil”, *Journal of Social History*, 38 (2004), pp. 127–155; see also Rüdiger Hachtmann, *Tourismus-Geschichte* (Göttingen, 2007), pp. 160ff., 173ff. For an opposing position, see in particular Shelley Baranowski, *Strength through Joy: Consumerism and Mass Tourism in the Third Reich* (Cambridge [etc.], 2004), for example, pp. 8f. Baranowski employs exclusively normative arguments in denying that the Third Reich had any affinities to Fordism. On the Fordist quality of mass production, tourism, and the intended Nazi mass consumer society, see also Wolfgang König, *Volkswagen, Volksempfänger, Volksgemeinschaft. ‘Volksprodukte’ im Dritten Reich. Vom Scheitern einer nationalsozialistischen Konsumgesellschaft* (Paderborn, 2004), pp. 130ff., 157ff., 236ff., 206f., 210–215, 257. The normative rejection of Fordism in Nazi Germany is not limited to Baranowski and the field of tourism. Occasionally normative arguments are even used to deny that the assembly-line production

butter” became decisive. Third, the introduction of concepts such as “war Fordism” and also “war Taylorism” as specific categories makes sense because the labour force subjected to these production regimes was increasingly recruited, above all from 1941 onward, as a kind of war booty from those territories of Europe occupied by the German military and was no longer protected by the usual labour laws of ‘civil’-capitalist societies.

The Nazi regime knew innumerable degrees of unfreedom, also and especially in the domain of “work deployment”, as the developments on the labour market were designated with explicitly military connotations beginning in 1934 – terminologically quite correct given the growing restrictions on the free of movement of workers.⁷ Since we are interested above all in the question of how these specific historical variants of two apparently contrary production regimes – one that remained fundamentally grounded in the economy and one that was based upon extra-economic force – were connected, our primary empirical focus here is the industrial labour performed by concentration camp prisoners. During World War II concentration camp prisoners (who were subject themselves to an internal hierarchy) stood at the lower end of the numerous discriminated employee groups in Nazi Germany.

The term “slave labour” in this context has been largely avoided in the present article. The reason for this is that the term is loaded with various connotations in historical research – including in contemporary history since 1933.⁸ As a conceptual makeshift construct encompassing diverse

system had a Fordist character when coupled with unfree labour. See, for example, Oliver Rathkolb, “NS-Zwangsarbeit in der Industrie im Vergleich. Am Beispiel der Betriebe der Reichswerke Hermann Göring in Linz”, in Gabrielle Hauch (ed.), *Industrie und Zwangsarbeit im Nationalsozialismus. Mercedes Benz – VW – Reichswerke Hermann Göring in Linz und Salzgitter* (Innsbruck [etc.], 2003), pp. 67–84, 70f., who rejects the use of the term “Fordism” for the Nazi production regime beginning in 1940 with the argument that the Nazi war economy was, “much in contrast to the US American system without forced labour and radical repression”, an “inhuman exploitation regime”; for this reason, Rathkolb concludes, the terms “Americanization” and “Fordism” should not be used here.

7. On this transformation and militarization of language under the Nazi regime, see Rüdiger Hachtmann, “Vom ‘Geist der Volksgemeinschaft durchpult’ – Arbeit, Arbeiter und die Sprachpolitik der Nationalsozialisten”, *Zeitgeschichte Online* (ZOL), January 2010.

8. Works by Wolfgang Sofsky are especially stimulating here; see *Die Ordnung des Terrors. Das Konzentrationslager* (Frankfurt, 1993), pp. 198f., as well as Marc Buggeln, “Were Concentration Camp Prisoners Slaves? The Possibilities and Limits of Comparative History and Global Historical Perspectives”, *International Review of Social History*, 53 (2008), pp. 101–129. Buggeln compares the work deployment of concentration camp prisoners with slave-holding society in the southern states of the US prior to the American Civil War (*ibid.*, pp. 108ff.) in order to examine the heuristic value of the term “slave labour” for the diverse forms of unfree labour relations marked by extra-economic compulsion employed in Germany beginning in 1939 (with a good overview of the scholarly discussion of the issue). See also Claus Füllberg-Stolberg “Zwangsarbeit in der Moderne – vergleichende Überlegungen”, *Zeitschrift für Weltgeschichte*, 3:2 (2002), pp. 71–88, who takes the narrowing of the term “slave labour” by the

forms of unfree labour, the term cannot as a category really do justice to the specific forms of discrimination that the various groups of labourers compelled to unfree work deployments in German industry were subject to during World War II. In addition to racially stigmatized civilian foreign labourers and prisoners of war, these included especially concentration camp prisoners, a group particularly interesting for the present examination.⁹

Given the diversity of both historical and contemporary “slave labour” and the absence of transhistorical typologies (which would have to incorporate not only ancient, but also medieval and early modern slavery), the concept can at best be used metaphorically. The objections to applying the term “slaves” to concentration camp prisoners are well known. Perhaps the most significant is the fact that these prisoners did not possess the status of “slaves” in the classical sense, since slave owners usually had (and have) an interest in maintaining the labour power of the people under their control. Even from 1942–1943 onward, when the attempt was made to use the labour power of prisoners productively for the German war economy, the SS had such an interest only to a limited degree at best.¹⁰ Less significant in comparison is the question of whether

Federal German Compensation Fund “Erinnerung, Verantwortung und Zukunft” (responsible for symbolic compensation payments to foreign labourers forced to perform unfree industrial labour in Germany) beginning in 2000 as the occasion to introduce into a diachronic comparison of “slave labour” the gulags of the Stalinist Soviet Union alongside the Nazi dictatorship and the southern states of the US. A review of Anglo-American research on the subject also makes clear the difficulty of such comparisons and defining systematic categories overall. See, for instance, Suzanne Miers, *Slavery in the Twentieth Century: The Evolution of a Global Problem* (Walnut Creek, CA [etc.], 2003); Kevin Bales, *Disposable People: New Slavery in the Global Economy* (Berkeley, CA [etc.], 2004), or the classic study, first published in 1944, by Eric Williams, *Capitalism & Slavery* (Chapel Hill, NC [etc.], 1994).

9. The relative diffuseness of the terms “slave labour” and “forced labour” has frequently been emphasized. Exemplary here is Ulrich Herbert’s article (published in numerous places), “Zwangsarbeit im ‘Dritten Reich’. Kenntnisstand, offene Frage, Forschungsprobleme”, in Hauch, *Industrie und Zwangsarbeit*, pp. 11–36, 11ff., or Bertrand Perz, “Zwangsarbeit von KZ-Häftlingen der Reichswerke ‘Hermann Göring’ in Österreich, ‘Deutschland und Polen. Vergleichende Perspektiven”, in *ibid.*, pp. 85–100, 85.

10. This is emphasized above all by Sofsky, *Ordnung des Terrors*, pp. 198f., who, however, allows the work deployment of concentration camp prisoners to congeal into a kind of ideal type, thereby robbing it of its historical dimensions, and to this extent does not do justice to the complexity of the forced labour relations of prisoners. Similar to Sofsky is also Füllberg-Stolberg, “Zwangsarbeit in der Moderne”, pp. 74, 78, 87f. Buggeln, “Were Concentration Camp Prisoners Slaves?”, summarizing pp. 125, 128, also concedes that, despite all efforts from 1942 onwards, the labour of concentration camp prisoners could only be utilized to a limited extent in German industry. Although Buggeln clearly identifies the differences between the slavery system in the US, on the one hand, and the work deployment of concentration camp prisoners in Germany beginning in 1942–1943 on the other, he nevertheless designates the work deployment of concentration camp prisoners as slavery. For Buggeln, the term “slavery” becomes the umbrella concept that subsumes numerous forms of unfree labour. See summary, *ibid.*, p. 127. This is in principle legitimate because the issue is ultimately one of definition.

slaves were privately owned or (as was the case for concentration camp prisoners) were state property or quasi-state property (in the case of the SS). In older history as well, “state” ownership of slaves (for example, Venetian galley slaves) was an established phenomenon. In order to prevent misunderstandings and avoid the possibility of problematic analogies, this article uses the less loaded terms “unfree labour” and “forced labour”.

DIMENSIONS AND LIMITS OF THE FORDIST MODE OF PRODUCTION BEGINNING IN 1933

As the focus of the present reflections is “Fordism and unfree labor” under Nazi rule, it should be emphasized initially that at the latest beginning in 1936 – and in marked contrast to the Weimar Republic – the Fordist production regime rapidly gained in significance in ever broader sectors of industry in the German Reich under conditions of still largely (doubly) *free labour*.¹¹ This raises the question of why factory Fordism was introduced into numerous sectors of manufacturing industry in Germany following the Nazi seizure of power. Fordism presupposes mass production, which in turn presumes mass sales. Mass sales imply mass consumption.¹² However, mass sales can also mean military mass “consumption”, that is, aiming at the mass production of weapons (and their ultimate “use”). This was the case above all in Nazi Germany. As is well known, beginning in 1934 the economic depression in Germany gave way to an armaments boom. When this began, the barriers that had previously impeded a broad introduction of assembly-line production fell by the wayside.

The state also consciously pushed the mass production (in particular) of armaments through initiatives that accelerated the standardization of production parts as well as the reduction in the diversity of production

However, it does nothing to address the problem of possible misunderstandings of the term, which is frequently used in everyday language, often only metaphorically.

11. However, in addition to crushing trade unions and intra-company codetermination bodies, the Nazis also successively narrowed all other employment law “freedoms” for German workers also, in particular the possibilities for unrestricted job movement (not to mention eliminating the possibility of articulating autonomous and unrestricted employee interests). See Rüdiger Hachtmann, *Industriearbeit im Dritten Reich. Untersuchungen zu den Lohn- und Arbeitsbedingungen 1933 bis 1945* (Göttingen, 1989), pp. 42ff., 46ff.; *idem*, “Die rechtliche Regelung der Arbeitsbeziehungen im Dritten Reich”, in Wolfram Fischer and Dieter Gosewinkel (eds), *Wirtschaftskontrolle und Recht im Nationalsozialismus – zwischen Entrechtlichung und Modernisierung. Bilanz und Perspektiven der Forschung* (Baden-Baden, 2004), pp. 123–139.

12. To this extent Ford can also be regarded as the “inventor” of modern mass consumer society. See the corresponding passages in his autobiography *My Life and Work* (the German translation *Mein Leben und Werk* was published in several high print runs also during the Nazi era; after 1945 the German title of the book was changed to *Erfolg im Leben. Mein Leben und Werk*).

types, thereby creating the essential conditions for the rationalization of production technology and work organization on a large scale. Not least through the appointment of a whole series of special commissioners the Hitler regime was able to score significant successes in this domain beginning in 1938, as well as once again more emphatically under armaments ministers Fritz Todt (1940–1941) and Albert Speer (1942–1945). Fundamental impediments to an even more powerful expansion of the assembly-line system remained, however: the rapidly changing armaments programmes, not fully matured armaments technologies, the frequent lack of coordination among the fragmented military and economic planning offices, and the resulting limited reorganization of individual factory production processes in rapid succession, which made mass production significantly more difficult.

Consequently the successes in rationalization that had already been initiated by companies on their own as well by the massive expansion of umbrella institutions such as the Reichskuratorium für Wirtschaftlichkeit [Reich Productivity Board] or the REFA were unable to approach the American model. Nevertheless, in international comparison they were quite respectable. Especially in the factories of major companies, “assembly islands”, which had been largely sporadic prior to 1933, were expanded and the different divisions often tightly integrated through the use of fully automated conveyor belts. At the forefront here were aircraft construction, a comparatively young industrial branch, and the automobile industry – above all the Opel Company, which had been owned by General Motors since 1929–1931 and opened the first factory in Germany based completely on the principle of assembly-line production in the city of Brandenburg in 1936.¹³ Beginning in 1936–1937, other automobile makers followed suit.

Forms of Fordism were also rapidly introduced to the electrical engineering industry and certain sectors of the chemical industry. Growing segments of the consumer goods industry, namely bicycle construction, many shoe factories (oriented on the model of the famous Czechoslovakian

13. See Michael Stahlmann, *Die Erste Revolution in der Autoindustrie. Management und Arbeitspolitik von 1900–1940* (Frankfurt [etc.], 1993), p. 88. On the introduction of assembly-line production in Daimler-Benz (which was more hesitant than Opel), see *ibid.*, pp. 178 ff., as well as Neil Gregor, *Stern und Hakenkreuz. Daimler-Benz im Dritten Reich* (Berlin, 1997), pp. 38–44, 104, 158f., 169f. The “Managing Director” of the Opel plant in Brandenburg was Heinrich Nordhoff, who advanced to General Director of the Volkswagen plant in Wolfsburg in 1948, and served for twenty years at the head of the automobile company, which became, through the production of millions of VW Bugs, the embodiment of early Fordism in the Federal Republic of Germany. On the Opel plant in Brandenburg (without a detailed examination of the Fordist production regime implemented there), see Bernd Krause, “Der ‘Blitz’ aus Brandenburg – die Opel-Werke”, in Gerd Heinrich, Klaus Heß, Winfried Schich, and Wolfgang Schößler (eds), *Stahl und Brennbabor. Die Stadt Brandenburg im 19. und 20. Jahrhundert* (Potsdam, 1998), pp. 447–449.

company, Bata), and numerous companies in the food industry converted to mass production and introduced Fordist production models. In contrast, machine and apparatus construction, still based on individual production, continued to oppose the introduction of Fordist production forms.¹⁴ The fabrication of machine tools, as the technological centre of all branches of industry, constituted in yet another regard a structural impediment to the expansion or perfection of Fordist structures: long into the war special machine tools suited for mass production played only a peripheral role in German industry, while classical universal machine tools continued to have great significance. Even after 1936 the broad midfield of tool machines that sought to combine the functions of these two basic types was not eliminated in favour of single-purpose machines really adequate for mass production, but was instead in part expanded. Universal machine tools actually intended for individual or small-series production were simply modified for mass production, without being able to attain the capacity of single-purpose machines.¹⁵

Furthermore machine-tool builders were surprised by the rationalization advances during the Third Reich and were not set up for an increased demand for single-purpose machines. Beginning in 1937–1938 and the again at the turn to 1942, the discrepancy between the supply and demand of special machines increased dramatically. Nevertheless, the existing special machine tools as well as the rapidly increasing number of machine tools equipped with single-purpose “ingredients” and converted to mass production made it possible to place a significant portion of foreign forced labourers on the assembly line. Before turning to this issue in more detail, however, it is important to address an aspect that is easily overlooked when discussing assembly-line production.

ASSEMBLY-LINE PRODUCTION AS AN EXPLOITATION INNOVATION

Intra-company Taylorist and Fordist rationalization aimed not only at increasing productivity and sinking production costs. It was also intended to contribute to disciplining and thereby pacifying employees. Not just in 1933 but from the very beginning the workplace rationalization policies connected to the names Frederick Winslow Taylor and Henry Ford were

14. See Thomas von Freyberg, *Industrielle Rationalisierung in der Weimarer Republik. Untersucht an Beispielen aus dem Maschinenbau und der Elektroindustrie* (Frankfurt, 1989), and Thomas von Freyberg and Tilla Siegel, *Industrielle Rationalisierung unter dem Nationalsozialismus* (Frankfurt [etc.], 1991), pp. 267ff., as well as, above all, Michael C. Schneider, *Unternehmensstrategien zwischen Weltwirtschaftskrise und Kriegswirtschaft. Chemnitzer Maschinenbauindustrie in der NS-Zeit 1933–1945* (Essen, 2005), pp. 144ff.

15. See Freyberg and Siegel, *Rationalisierung unter dem Nationalsozialismus*, pp. 243ff. However, see also note 39.

shaped by technologies of domination. With their assistance, personnel policies and “work execution” in companies were supposed to be decoupled from larger labour-market constellations.¹⁶ Much more important than separating employees from the outside world, which was only possible to a limited degree, was the controlling of individuals through a systematic segmentation of work processes into repetitive sub-steps, which tended to eliminate for the unskilled or semiskilled workforce all the discretionary leeway that skilled workers employed in (“pre-Fordist”) production had previously possessed.

Ford carried to the extreme Taylor’s reduction of human labour capacity to an appendage of machinery for broad segments of the workforce, as the assembly line seemingly objectivized the monotony and the primarily intense work tempo. Moreover, the segmentation of previously unified work procedures also had a political dimension in Germany. Beyond the aforementioned aspects, the Fordist “attack” by management on workers’ discretionary leeway on the job can also be interpreted as a reaction to the co-determination rights employees had gained through the introduction of shop councils on 18 January 1920.¹⁷ Against this backdrop, Jürgen Bönig has designated assembly-line production as a “technology of domination” and its introduction as an “exploitation innovation”.¹⁸ Contemporaries expressed themselves in a similar manner. The assembly line as an element for disciplining the workforce, Austrian Social Democrat Otto Bauer declared in 1931, is “more despotic than the whip of the slave overseer could be”.¹⁹ It was no coincidence that factory Taylorism and Fordism gained in significance as a technology of domination following the influx of many millions of foreign labourers into German industry beginning in 1939–1941.

Even prior to this, the situation in Germany had changed fundamentally in comparison to the Weimar Republic. In 1934–1935, the German economy had entered a phase of full employment due to the booming armaments industry. Skilled metalworkers in particular became a “scarce

16. Heidrun Homburg, *Rationalisierung und Industriearbeit: Arbeitsmarkt, Management, Arbeiterschaft im Siemens-Konzern Berlin 1900–1939* (Berlin, 1991), pp. 18, 252, for example, has shown this convincingly for Siemens, the largest German electrical engineering company and the second largest in the world at the time.

17. The shop councils in turn were a dull reflection of the revolutionary workers’ councils that arose in November and December of 1918. They were an attempt to pacify broad segments of revolutionary socialist workers through – seen in this light, rather limited – intra-shop code-termination rights.

18. Jürgen Bönig, *Einführung von Fließarbeit in Deutschland bis 1933. Zur Geschichte einer Sozialinnovation* (Munster [etc.], 1993), I, pp. 37f. See, above all, von Freyberg, *Rationalisierung in der Weimarer Republik*, pp. 166ff., 173, 195ff., 211, 214.

19. Cited in Lutz Budraß and Manfred Grieger, “Die Moral der Effizienz. Die Beschäftigung von KZ-Häftlingen am Beispiel des Volkswagenwerks und der Henschel Flugzeug-Werke”, *Jahrbuch für Wirtschaftsgeschichte*, 1993: 2, pp. 89–136, 130.

commodity” heavily recruited by businesses. Forms of work organization and production technology that promised to replace qualified workers with unqualified ones thus became increasingly attractive. During the final prewar years and then with the beginning of the war these constellations on the labour market intensified. As a result, especially those companies that had, so to speak, sprung up overnight during the final prewar years or during the war itself employed a far higher percentage of foreign – and also primarily unskilled – labourers than average.

At the same time, in terms of production technology and work organization these new companies had been conceived according to the most modern perspectives. Perhaps the most prominent example, the Volkswagen plant on the Mittellandkanal near the small city of Fallersleben in Lower Saxony owned by the Deutsche Arbeitsfront (DAF) [German Labor Front] until 1945, resembled, even in its exterior, the Ford Motor Company’s River Rouge plant in Dearborne near Detroit, the most modern factory in the world at the time. Volkswagen managers had studied the Detroit plant in great detail, recruited an entire series of relevant engineers from the United States, and ultimately even believed that they could surpass the American model. From the perspective of plant management, the disciplining of foreign labourers raised fewer problems than the deficits in technical equipment and the rapidly changing situation concerning orders.²⁰

Apart from such friction, does the “foreign-worker deployment”, organized above all according to racist criteria beginning in 1939–1941, fit more or less smoothly into the polymorphic movement for workplace rationalization during World War II only roughly outlined by the slogan “Fordism”? From the perspective of industrial enterprises that continued to operate according to the criterion of profitability, to what extent did it make sense in general to employ foreign workers on assembly lines instead of German male or female workers, who had constituted the core of the rationalization proletariat in large segments of manufacturing industry in Germany prior to 1941?²¹

There are several reasons why scepticism is justified regarding the presumption that unfree labour, racism, and the Fordist rationalization movement were compatible without complications and that company management only profited from this. Although the wages of foreign labourers – hierarchical according to national affiliation – were for the most part far below those of German labourers, employing foreign

20. On the implementation of American modes of production in the DAF automobile company and the friction (only implied here), see in detail Hans Mommsen and Manfred Grieger, *Das Volkswagenwerk und seine Arbeiter im Dritten Reich* (Dusseldorf, 1996), pp. 394, 396ff., 406ff, 426f., 644, 682ff.

21. See Rüdiger Hachtmann, “Frauen in der deutschen Kriegsindustrie 1936 bis 1945”, *Geschichte und Gesellschaft*, 19 (1993), pp. 332–366.

labourers was nevertheless often expensive from the perspective of businesses. Accommodation costs, for instance, were deducted from foreign labourers' wages and a series of supplemental "social contributions" were also imposed, so that their net earnings were mostly quite meagre. A further variety of administration and "social" costs often made the use of civilian foreign labourers considerably more expensive. It was no question for managers of the Siemens Company, for instance, "that foreigners result in many more costs for us than German workers". Thus the question for them even in 1942 was whether the "continued increase in the number of foreigners [...] [is] economically justifiable at all".²²

From the perspective of the regime as well as company management, however, not all foreigners were the same. On the one hand, companies followed the hierarchy of "races" prescribed by the Nazis, which ostensibly corresponded to the different work capacities of the labourers. On the other hand, certain aspects of workplace rationalization contributed to the fact that racism – brought into the work world by the Nazis from outside – was softened and carried out virtually *ad absurdum*.

This was particularly evident in the aptitude tests conducted by the Institut für Arbeitspsychologie und Arbeitspädagogik [Institute for Work Psychology and Work Pedagogy]. Starting in 1941–1942 this institution, subordinate to the DAF-Amt für Betriebsführung und Berufserziehung [DAF Office of Management and Occupational Education], developed tests for the "selection of foreigners" based on American intelligence tests in Germany from World War I (Army Alpha and Beta tests). In the largest industrial psychological testing operation ever at the time, almost 500,000 civilian foreign labourers in far more than 1,000 companies were examined in this way for their concrete capabilities; and in the final year of the war further activities were developed on a broad basis for the "rough selection of foreign labourers".²³ Beginning in the autumn of 1943 concentration camp prisoners were even tested for their individual capabilities, irrespective of their national ("racial") affiliation and other categories.²⁴

22. Cited in Freyberg and Siegel, *Rationalisierung unter dem Nationalsozialismus*, pp. 391f.

23. See Ulfried Geuter, *Die Professionalisierung der deutschen Psychologie im Nationalsozialismus* (Frankfurt, 1988), pp. 253f., 298; Ulfried Geuter, "Das Institut für Arbeitspsychologie und Arbeitspädagogik der Deutschen Arbeitsfront. Eine Forschungsnotiz", 1999. *Zeitschrift für Sozialgeschichte des 20. und 21. Jahrhunderts*, 2 (1987), pp. 87–95.

24. This can be demonstrated for the Siemens Bobrek sub-camp (and for prisoners working there as skilled labourers or engineers) as well as for unskilled female prisoners at the Siemens production sites in the Ravensbrück concentration camp. See Rolf Schmolling, "Häftlingszwangsarbeit für Siemens während der NS-Zeit", in Zwangsarbeit erinnern e.V. (ed.), "... warum es lebenswichtig ist, die Erinnerung wachzuhalten." *Zwangsarbeit für Siemens in Auschwitz und Berlin* (Berlin, 2006), pp. 63–81, 70; *idem*, "Zwangsarbeit von Konzentrationslager-Häftlingen in der letzten Phase des Zweiten Weltkrieges: Das Beispiel Siemens unter besonderer Berücksichtigung der Außenlager Siemens-Haselhorst und Siemenslager Ravensbrück" (master's thesis submitted to the Technical

However, the fact that grouping *Ostarbeiter* (eastern labourers) and ultimately even concentration camp prisoners according to individual work capacities tended to undermine the racist schema prescribed by the Nazi regime and that company management complained about the high costs ostensibly caused by foreign labourers says little about the core issue here of the relationship between factory Fordism and “foreign labour”. Was the employment of foreign labourers, the majority of whom were kept in unfree and miserable conditions as the war endured, really productive? Or was their work deployment merely a – provisional – “emergency solution” that can be explained solely through the dire scarcity of labourers? Were the extra-economic forms of compulsion that continued to predominate in the everyday workplaces of foreign labourers even after 1942 despite bonuses, vocational training programmes, etc., fundamentally compatible with the structure of modern, industrial-capitalist industries, or was this dysfunctional in the long run?

CONCENTRATION CAMP PRISONERS AND THE
ASSEMBLY LINE – THE FORDIST PRODUCTION REGIME
AS A PRODUCTIVITY ENHANCING TECHNOLOGY OF
DOMINATION IN ITS MOST EXTREME FORM

An answer to these questions can be found most readily by turning our attention to the most severely terrorized and enslaved group of labourers: concentration camp prisoners.²⁵ Only a minority of all prisoners in Nazi concentration camps was used in industrial production, and this took place exclusively during the relatively short time span from late 1942 to mid-1944.²⁶ Most of these prisoners were used for extremely difficult and

University of Berlin, Berlin 1997), p. 104. It is possible that this kind of aptitude test was also later expanded to “simple” concentration camp prisoners working on assembly lines, and in other Siemens company units. See Karl-Heinz Roth, “Zwangsarbeit im Siemens-Konzern (1938–1945). Fakten – Kontroversen – Probleme”, in Kaienburg, *KZ und deutsche Wirtschaft*, pp. 149–168, 159.

25. Beginning in 1943, the work deployment of Jews designated for extermination cannot be addressed here. On this, see the overview by Herbert, “Zwangsarbeit im ‘Dritten Reich’”, pp. 29ff., and especially Wolf Gruner’s work. However, it should be pointed out that Nazi anti-Semitism, so to speak, de-territorialized Jews and classified their work deployment – as the group subject to the most extreme discrimination and condemned to death – as part of the deployment of (in general racially stigmatized) “foreigners” in the broadest sense of the term.

26. Marc Buggeln has recently pointed out quite correctly that only at a comparatively late point in time were concentration camp prisoners forced to participate in work deployments in the weapons industrial complex of the Nazi dictatorship, and has dated the “time-frame” for this between late 1942 and the spring of 1944; see Marc Buggeln, *Arbeit & Gewalt. Das Außenlagersystem des KZ Neuengamme* (Göttingen, 2009), pp. 38ff., 102. The deployment of prisoners in manufacturing industries was initially delayed by the insistence of Himmler and the SS that the corresponding production be located within concentration camps (which would have

strenuous construction work, during the final months of the war for the relocation of industrial facilities underground, etc. The total number of concentration camp prisoners used in the industrial work deployment even in 1944, including the construction work for underground relocation, was limited to a few hundred thousand.²⁷ This, however, does not alter the fact that the basic tendencies of the rationalization movement specific to the Nazis was, so to speak, expressed in its “most pure” form (formulated cynically and in ideal-typically abstract terms) in the typical working conditions and production structures of concentration camp prisoners, also classified internally according to a racist hierarchy – precisely because this group of labourers was subject to the highest conceivable degree of unfreedom and to extreme extra-economic force.

Historians are divided as to how functional and “modern” the “German path”, beginning in 1942–1943, of a Fordist-influenced industrial prisoner deployment was. Two mutually exclusive extreme positions mark the parameters of this discussion. Karl-Heinz Roth occupies one extreme with his claim that “slave labour can be used profitably even under the conditions of the most modern capitalist large-scale technology if it is incorporated solely into a workforce-pyramid racially organized in degrees of unfreedom”. According to Roth, the labour relations created in German industry beginning in 1941, not least those of prisoner deployments, “were not part of a period of decline of the capitalist global system”.²⁸ Wolfgang Sofsky has formulated the counter-position. According to Sofsky, the labour performed by concentration camp prisoners up to the end of the war was aimed at “damaging the people, breaking their resistance”. The industrial deployment of concentration camp prisoners was, Sofsky argues, “not a means

massively increased the economic power of the SS). Only in the course of Hitler’s fundamental decision of September 1942 were satellite or sub-camps (*Außenlager*) erected near the relevant armaments companies and the SS degraded to a “junior partner”. See *ibid.*, as well as Jan-Erik Schulte, *Zwangsarbeit und Vernichtung. Das Wirtschaftsimperium der SS. Oswald Pohl und das SS-Wirtschaftsverwaltungshauptamt* (Paderborn, 2001), pp. 218–221; Ulrich Herbert, “Arbeit und Vernichtung. Ökonomisches Interesse und Primat der ‘Weltanschauung’ im Nationalsozialismus”, in Dan Diner (ed.), *Ist der Nationalsozialismus Geschichte? Zu Historisierung und Historikerstreit* (Frankfurt, 1987), pp. 198–240, 220f.; Jens-Christian Wagner, *Ellrich 1944/45. Konzentrationslager und Zwangsarbeit in einer deutschen Kleinstadt* (Göttingen, 2009), p. 32.

27. The quantitative dimensions of the prisoner deployment are, according to Herbert, “almost impossible to estimate seriously”. With all reservations he puts the number of concentration camp prisoners working in the underground relocations in late 1944 at approximately 240,000, and the number of prisoners working in private industry at around 230,000. See Herbert, “Zwangsarbeit im ‘Dritten Reich’”, pp. 14f.

28. Karl-Heinz Roth, “I.G. Auschwitz. Normalität oder Anormalität eines kapitalistischen Entwicklungssprungs?”, in Hamburger Stiftung zur Förderung von Wissenschaft und Kultur (ed.), “*Deutsche Wirtschaft.*” *Zwangsarbeit von KZ-Häftlingen für Industrie und Behörden* (Hamburg, 1991), pp. 79–95, 90, or 1999. *Zeitschrift für Sozialgeschichte des 20. und 21. Jahrhunderts*, 4 (1990), pp. 11–28, 27. See also *idem*, “Zwangsarbeit im Siemens-Konzern (1938–1945)”, pp. 165–168.

of survival, but rather [a means] of absolute power and terror”, and it remained so until the very end. The limited economization of prisoners’ labour by the Wirtschaftsverwaltungshauptamt [Economic Administration Main Office] of the SS beginning in 1942 did not fundamentally change this. “An abolition of terrorist practices”, Sofsky maintains, did not subsequently emerge.²⁹

Both positions are exaggerated. Despite the independent spiral of violence emphasized by Sofsky, the work deployment of concentration camp prisoners in industrial fabrication was, from the perspective of those companies using it, also quite functional economically, at least from 1942–1943 onward.³⁰ The issue of whether prisoners were used in industrial production was crucially dependent on the situation of the labour market. Concentration camp prisoners were forced to work above all in those segments of industry in the German Reich that expanded rapidly during the conversion to an extended war of attrition and that possessed no reservoir of long-established qualified workers. This included tank production, rocket construction (beginning in 1943 in underground tunnels and caves),³¹ munitions production,³² textile

29. Sofsky, *Ordnung des Terrors*, pp. 193–225, 193, 196, 198f.

30. This has recently been emphasized by Adam Tooze in *The Wages of Destruction: The Making and Breaking of the Nazi Economy* (London, 2006), esp. pp. 513–538; Buggeln, *Arbeit & Gewalt*, pp. 41f.; Ulrich Herbert, “Arbeit und Vernichtung”, pp. 204ff., 219, 233ff.; *idem*, *Geschichte der Ausländerpolitik in Deutschland. Saisonarbeiter, Zwangsarbeiter, Gastarbeiter, Flüchtlinge* (Munich, 2001), pp. 177f. is also balanced; Lutz Raphael, “Krieg, Diktatur und imperiale Erschließung. Arbeitszwang und Zwangsarbeit 1880 bis 1960”, in Elisabeth Herrmann-Otto (ed.), *Unfreie Arbeits- und Lebensverhältnisse von der Antike bis in die Gegenwart* (Hildesheim [etc.], 2005), pp. 258–280, 277f.; Hermann Kaienburg, “Vernichtung durch Arbeit.” *Der Fall Neuengamme. Die Wirtschaftsbestrebungen der SS und ihre Auswirkungen auf die Existenzbedingungen der Häftlinge* (Bonn, 1990), p. 288; *idem*, *Die Wirtschaft der SS* (Berlin, 2003), pp. 435ff.; Walter Naasner, *Neue Machtzentren in der deutschen Kriegswirtschaft 1942–1945* (Boppard, 1994), pp. 44of.; Mark Spoerer, *Zwangsarbeit unter dem Hakenkreuz. Ausländische Zivilarbeiter, Kriegsgefangene und Häftlinge im Deutschen Reich und im besetzten Europa, 1939–1945* (Stuttgart [etc.], 2001), pp. 32f. addresses this issue only peripherally and very generally in his overview. As Dietrich Eichholtz, *Geschichte der deutschen Kriegswirtschaft 1939–1945*, II: 1941–1943 (Berlin, 1985), p. 223, has pointed out, the structural restrictions of the concentration camp system made “all attempts by the cognizant SS representatives and the monopoly of its economization” into “an irresolvable task”.

31. On assembly line production in the underground rocket industry (only partially planned), see Bertrand Perz and Florian Freund, *Das KZ in der Serbenhalle. Zur Kriegsindustrie in Wiener Neustadt* (Vienna, 1987), p. 82 (and the older literature mentioned there); Jens-Christian Wagner, *Produktion des Todes. Das KZ Mittelbau-Dora* (Göttingen, 2001), pp. 12f., 392f.; Florian Freund, “Die Entscheidung zum Einsatz von KZ-Häftlingen in der Raketenrüstung”, in Kaienburg, *KZ und deutsche Wirtschaft*, pp. 61–74, 72f.; Manfred Grieger, “‘Vernichtung durch Arbeit’ in der deutschen Rüstungswirtschaft”, in Torsten Hess and Thomas A. Seidel (eds), *Vernichtung durch Fortschritt am Beispiel der Raketenproduktion im Konzentrationslager Mittelbau* (Bad Münstereifel, 1995), pp. 43–60, 52.

32. See Gerd Wysocki, *Arbeit für den Krieg. Herrschaftsmechanismen in der Rüstungsindustrie des “Dritten Reiches.” Arbeitseinsatz, Sozialpolitik und staatspolizeiliche Repression bei den*

production,³³ the chemical industry,³⁴ the electrical engineering industry,³⁵ the automobile industry,³⁶ as well as aircraft construction. As a rule,

Reichswerken "Hermann Göring" im Salzgitter-Gebiet 1937/38 bis 1945 (Braunschweig, 1992), pp. 179f.; *idem*, "Häftlingsarbeit und Rüstungsproduktion. Das Konzentrationslager Drütte bei den Hermann-Göring-Werken in Watenstedt-Salzgitter", *Dachauer Hefte* (1986), pp. 35–67, 56; *idem*, "Arbeit, Sozialpolitik und staatspolizeilich Repression bei den Reichswerke 'Hermann Göring' in Salzgitter. Forschungsergebnisse des Projektes 'Arbeit für den Krieg'", in Kaienburg, *KZ und deutsche Wirtschaft*, pp. 112–125, 125; Friedrich Stamp, *Zwangsarbeit in der Metallindustrie 1939–1945* (Berlin, 2001), p. 34, as well as summarizing Buggeln, *Arbeit & Gewalt*, pp. 299f.

33. See Sofsky, *Ordnung des Terrors*, pp. 205, 211; Sigrid Jacobeit, "Zur Arbeit weiblicher Häftlinge im Frauen-KZ Ravensbrück", in Kaienburg, *KZ und deutsche Wirtschaft*, pp. 199–210, 204.

34. See Claus Füllberg-Stolberg, "Frauen im Konzentrationslager: Langehagen und Limmer", in Rainer Fröbe *et al.*, *Konzentrationslager in Hannover. KZ-Arbeit und Rüstungsindustrie in der Spätphase des Zweiten Weltkriegs* (Hildesheim, 1985), pp. 277–329, 324f., examines the case of a subsidiary plant of the Continental AG/Hannover in which gas-masks were produced; Buggeln, *Arbeit & Gewalt*, pp. 318ff.

35. See Rolf Schmolling, "'Pfleghchistes Aufforsten'. Zur Bedeutung der Häftlingszwangsarbeit für die Produktion bei Siemens und Osram", in Petra Haustein, Rolf Schmolling, and Jörg Skriebeleit (eds), *Konzentrationslager. Geschichte und Erinnerung. Neue Studien zur Lagergeschichte und Gedenkkultur* (Ulm, 2001), pp. 115–130, 116; Rolf Schmolling, "Häftlingszwangsarbeit für Siemens"; *idem*, "Beispiel Siemens", pp. 107f.; Carola Sachse, "Zwangsarbeit jüdischer und nicht-jüdischer Frauen und Männer bei der Firma Siemens 1940 bis 1945", *IWK*, 27 (1991), pp. 1–12, 7f., Roth, "Zwangsarbeit im Siemens-Konzern", pp. 150, 158ff. The articles by Schmolling are based on his excellent master's thesis: Schmolling, "Beispiel Siemens". A dissertation project by Schmolling planned for the Siemens' sub-camps of concentration camps could not be conducted because he was denied access to the relevant files in the company archive. See (among others) Thomas Irmer, "Siemens und die Erinnerung – Zur Auseinandersetzung um Siemens in der NS-Zeit nach 1945", in Haustein *et al.*, *Konzentrationslager. Geschichte und Erinnerung*, pp. 82–107. The semi-official depiction of the history of the Siemens Company by Siemens archivist Winfried Feldenkirchen, *Siemens 1918–1945* (Munich, 1995) dedicates only three pages (pp. 330–333) to the Nazi era, is highly apologetic, and is worthless as scholarship. In comparison to Siemens, the Allgemeine Elektrizitäts-Gesellschaft (AEG), the second largest electrical engineering company in the German Reich, used concentration camp prisoners significantly later, beginning in the late summer of 1944, in its Berlin factories in Schöneeweide and Hennigsdorf. It is unclear whether these prisoners were used within the scope of Fordist or at least Taylorist production processes. See Thomas Irmer, "'... eine Art Sklavenhandel ...' Konturen der Zwangsarbeit beim Elektrokonzern AEG/Telefunken in Berlin-Wedding", in Arbeitskreis Berliner Regionalmuseen (ed.), *Zwangsarbeit in Berlin 1938–1945* (Berlin, 2003), pp. 154–166, 162.

36. On the automobile industry and this relevant thematic complex in general, see among others the pioneering studies by Rainer Fröbe, "Der Arbeitseinsatz von KZ-Häftlingen und die Perspektive der Industrie, 1943–1945", in *"Deutsche Wirtschaft"*, pp. 33–78, 38, 44; *idem*, "'Wie bei den alten Ägyptern'. Die Verlegung des Daimler-Benz Flugmotorenwerkes Genshagen nach Obrigheim am Neckar 1944/45", in Hamburger Stiftung für Sozialgeschichte des 20. Jahrhunderts (ed.), *Das Daimler-Benz Buch. Ein Rüstungskonzern im "Tausendjährigen Reich"* (Nördlingen, 1987), pp. 400f.; Peter Koppenhöfer, "KZ-Arbeit und Gruppenakkord bei Daimler-Benz Mannheim", 1999. *Zeitschrift für Sozialgeschichte des 20. und 21. Jahrhunderts*, 2 (1994), pp. 11–45, 12–16, as well as Gregor, *Stern und Hakenkreuz*, pp. 182–184, 199, 208f., 288,

the companies active in these branches had the best access to key military and state authorities and could employ political means to push through the allocation of forced labourers recruited from concentration camps.

Prisoners from concentrations camps were used for the first time in “regular” industrial mass production starting in August 1942 at the Heinkel aircraft plant in Oranienburg near the Sachsenhausen concentration camp. In mid-1943 almost 4,000 prisoners from the neighbouring concentration camp worked in the plant under a partially Fordist and partially “merely” Taylorist production regime; a year later 6,000 prisoners were forced to work there as well. Another private enterprise, the Junkers Company, used 1,300 prisoners as labourers in the autumn of 1943; Messerschmidt had between 3,500 and 3,600 prisoners at the same time. The aircraft factories established beginning in 1942, such as the Weiner Neustadt aircraft factory, the Flugmotoren Ostwerke in Vienna,³⁷ BMW in Munich-Allach, and Klöckner in Gurein (now Kurim) used prisoners in similar numbers. In early 1944, approximately 36,000 concentration camp prisoners worked in numerous factories of the aircraft industry.³⁸

314ff., and elsewhere. Hardly any concentration camp prisoners were used on assembly lines in Volkswagen plants, although larger numbers of military penal prisoners and prisoners of war were. See Mommsen/Grieger, *Volkswagenwerk*, pp. 429–432, 559, 561, 883, 894, 897ff., as well as Lutz Budraß and Manfred Grieger, “Die Moral der Effizienz. Die Beschäftigung von KZ-Häftlingen am Beispiel des Volkswagenwerks und der Henschel Flugzeug-Werke”, *Jahrbuch für Wirtschaftsgeschichte*, 1993:2, pp. 89–136, 98, 107. For empirical studies, see also Constanze Werner, *Kriegswirtschaft und Zwangsarbeit bei BMW* (Munich, 2006), pp. 146, 150ff. 157–163, 167, 169, 171f., and elsewhere; Barbara Hopmann et al., *Zwangsarbeit bei Daimler-Benz* (Stuttgart, 1994), pp. 52f., 358, 387; Bernard P. Bellon, *Mercedes in Peace and War. German Automobile Workers, 1903–1945* (New York, 1990), pp. 238–253; Birgit Weitz, “Der Einsatz von KZ-Häftlingen und jüdischen Zwangsarbeitern bei der Daimler-Benz AG (1941–1945). Ein Überblick”, in Kaienburg, *KZ und die deutsche Wirtschaft*, pp. 169–195, 174f., as well as summarizing Herbert, *Arbeit und Vernichtung*, p. 229.

37. Daimler-Benz had taken over the management of the newly erected Flugmotoren Ostmark GmbH in Wiener Neudorf in 1941. Through this and the assumption of a capital interest, the Stuttgart company headquarters secured “practical control over probably the most significant armaments project in the domain of airplane motor production”; Weitz, “Einsatz von KZ-Häftlingen”, p. 169.

38. See Falk Pingel, *Häftlinge unter SS-Herrschaft. Widerstand, Selbstbehauptung und Vernichtung im Konzentrationslager* (Hamburg, 1978), p. 279; Buggeln, *Arbeit & Gewalt*, p. 46; Ulrich Herbert, *Geschichte der Ausländerpolitik in Deutschland. Saisonarbeiter, Zwangsarbeiter, Gastarbeiter, Flüchtlinge* (Munich, 2001), p. 178. On the deployment of concentration camp prisoners on assembly lines in the aircraft industry, see above all Lutz Budraß, *Flugzeugindustrie und Luftfrüstung in Deutschland 1918–1945* (Düsseldorf, 1998), pp. 775–800; *idem*, “Der Schritt über die Schwelle. Ernst Heinkel, das Werk Oranienburg und der Einstieg in die Beschäftigung von KZ-Häftlingen”, in Winfried Meyer and Klaus Neitmann (eds), *Zwangsarbeit während der NS-Zeit in Berlin und Brandenburg. Formen, Funktion, Rezeption* (Potsdam, 2001), pp. 129–162, 150, 155, 158; Budraß and Grieger, “Moral der Effizienz”, pp. 114, 117, 122 and elsewhere; Eichholtz, *Deutsche Kriegswirtschaft*, III: 1943–1945, pp. 285ff., 292f., 300f.; Grieger, ““Vernichtung durch Arbeit””, pp. 50f.; further Naasner, *Neue*

All of these factories operated according to the most modern production methods. Fabrication based on assembly-line production as well as often partially automated production and the prior dissection of more complex work processes into a few monotonous and repetitive movements were supposed to allow for the use of briefly trained labourers in an economically efficient and profitable way. Thus, the production lines in the new plants and divisions of the plants of the Austrian Daimler-Steyr-Puch AG, where prisoners from the Melk concentration camp had to work, were “equipped from the very beginning with special machine tools suited for mass production with semiskilled workers”.³⁹ Bernard P. Bellon has summarized this phenomenon, taking developments at Daimler Benz as exemplary:

The move from skilled metalworkers to concentration camp inmates for fitting together the components of Daimler-Benz motors is symbolic of the changes in the labor process in the German motor building industry during a half-century which was marked in production technology by the accomplishments of men like Taylor and Ford.⁴⁰

This was indeed the case. The deployment of prisoners virtually compelled the expansion of assembly-line production, if we follow the utterances of contemporary industrial managers of the Großdeutscher Reich [Greater German Empire].

Revealing in this context are statements by the influential manager and aircraft engine expert William Werner of the Auto Union AG, who, due to

Machtzentren, p. 19; Tooze, *Ökonomie der Zerstörung*, pp. 612, 663ff., 667; Karin Orth, *Das System der nationalsozialistischen Konzentrationslager* (Hamburg, 1999), pp. 176f.; Hans Brenner, “Der ‘Arbeitseinsatz’ der KZ-Häftlinge in den Außenlagern des Konzentrationslagers Flossenbürg – ein Überblick”, in Ulrich Herbert, Karin Orth, and Christoph Dieckmann (eds) *Die nationalsozialistischen Konzentrationslager – Entwicklung und Struktur*, II (Göttingen, 1998), pp. 682–706, 690f., 693.

39. According to Bertrand Perz in his study of Daimler-Steyr-Puch and the Melk concentration camp: *Projekt Quarz. Steyr-Daimler-Puch und das Konzentrationslager Melk* (Vienna, 1991), p. 61. On the history of this Austrian company (founded in 1934), which produced bicycles, motorcycles, automobiles, trucks, and guns, and whose ownership was transferred to the Hermann Göring Werke or the Bank der Deutschen Luftwaffe closely tied with it, see also Bertrand Perz, “Politisches Management im Wirtschaftskonzern. Georg Meindl und die Rolle des Staatskonzerns Steyr-Daimler-Puch bei der Verwirklichung der NS-Wirtschaftsziele in Österreich”, in Kaienburg, *KZ und deutsche Wirtschaft*, pp. 95–112. Beginning in 1940, the Daimler-Benz factory in Genshagen was also equipped with “thousands of the most modern metal-working machines”, and “new special machines” for the “slaves” from the concentration camps; Bellon, *Mercedes in Peace and War*, p. 240. Budraß, *Flugindustrie und Luftrüstung*, p. 831, emphasizes that in addition to Daimler-Benz and other companies of the automobile and the electrical engineering industries (Schmolling, “Beispiel Siemens”, p. 43), the aircraft industry – from the very beginning equipped with the most modern production plants – also converted its production apparatus during the war to single-purpose machines better suited for assembly line production. See also Fröbe, “Arbeitseinsatz von KZ-Häftlingen”, p. 44f.

40. Bellon, *Mercedes in Peace and War*, p. 243.

extended visits to the United States, had acquired the reputation as *the* assembly-line expert in Germany and who, within the scope of the war-industrial “self-management” established beginning in 1941–1942, was appointed head of the “ring” for aircraft engines.⁴¹ Werner presented the following argument to Göring in mid-October 1943: with regard to the assembly of motors “the current production process is still strongly marked by craftsmanship, which results in a great loss of labour time through unauthorized pauses, brief absences at the workplace, etc”. Werner continued that according to his experiences this “unproductive time” would increase “with the number of foreigners”, if no counter-measures were taken.

For this reason he called not only for the most brutal possible extra-economic force. In addition, Fordism had to be employed in a concerted manner as a technology of domination. “The pressing command of the hour is thus the introduction of assembly-line production according to the American model”, Werner said. In contrast to the incomplete and thus “unfinished” form of assembly-line production still frequently practised in Germany, “American fabrication” encompassing the entire factory as with Ford had the benefit, Werner continued, that “when someone leaves, the entire work comes to a standstill. With such a system I can really compel the foreigners to 100 per cent work.” Not least of the advantages, according to Werner, was that with production stoppages the “culprit” could be easily identified and – as a concentration camp prisoner – harshly punished. In light of these “advantages”, the head manager of another aircraft factory had already noted a year earlier: “It is no longer a question for us of whether we want to employ assembly line work somewhere or not. [...] The question for us is only: at what point have we made *everything* flow and how we can make it flow even *better*.”⁴²

Thus, with regard to prisoners, the assembly line was especially attractive as an “exploitation innovation”: it reduced the manoeuvring room of individual labourers (prisoners); labourers used on the assembly lines could be monitored and disciplined more easily than the workforce

41. For William Werner’s biography, see Budraß, *Flugzeugindustrie und Luftrüstung*, pp. 709f.

42. Fröbe, “Arbeitseinsatz von KZ-Häftlingen”, pp. 37, 44f. See e.g., Zdenek Zofka, “Allach – Sklaven für BMW. Zur Geschichte eines Außenlagers des KZ Dachau”, *Dachauer Hefte*, 2 (1986), pp. 68–78; 72; Falk Pingel, “Häftlingszwangsarbeit. Zum Verhältnis von Profit, Produktion und Rassenideologie in der nationalsozialistischen Wirtschaft”, in *Deutsche Wirtschaft*, pp. 141–152, 148; Buggeln, *Arbeit & Gewalt*, p. 283. Especially with the rocket production at the Mittelbau-Dora concentration camp, assembly lines were not used much initially: “Many components of the V2 rockets were not transported by machine [i.e. on conveyor belts], but rather by manpower to the installation site in the tunnel [...] a task that was often too much for the already weakened prisoners.” This admittedly did not prevent the SS and the armaments staff from fantasizing “in regard to underground factories such as the Mittelwerk [Dora concentration camp] about ‘the ultimate high performance plant’, in which group piece-rate work would be performed by means of assembly line production and forced labour”; Wagner, *Produktion des Todes*, pp. 369, 392f.

in individual and serial production still strongly marked by craftsmanship. This calculation proved successful. The male and female labourers on the assembly line – in a whole series of companies female prisoners from the Ravensbrück concentration camp were placed on assembly lines running at a merciless rhythm and pace – complained that due to the great line speed their “arms [became] tired”, that they could hardly still lift the parts involved, and that the product and the assembly line ultimately became for them “insatiable gods that loved human sacrifice”.⁴³ The fact that the prisoners’ workstations had been set up according to the latest ergonomic criteria⁴⁴ changed nothing in this regard.

The dominance of surveillance and terror, however, did not exclude the introduction of a perfidious system of performance incentives for prisoners. Beginning in the spring of 1943 Himmler and the SS pushed efforts to increase prisoners’ production through an incentive system.⁴⁵ In the Ebersee concentration camp, for example, starting in November 1943, prisoners who distinguished themselves through “industriousness, consideration, good behaviour, and special performance” were issued reward certificates. They were permitted to use these “rewards” – camp money that could be spent only within the closed concentration camp system and had no value in the outside world – to “purchase” in the camp cafeteria cigarettes and additional food often necessary for survival. Similar “bonus certificates” had already been issued earlier at the Heinkel plant in Oranienburg to prisoners of the Sachsenhausen concentration camp working there.⁴⁶ This kind of incentive system was also introduced at Siemens and numerous other companies.⁴⁷

43. Prisoner’s report, cited in Buggeln, *Arbeit & Gewalt*, p. 319.

44. See, for example, Jacobeit, “Arbeit weiblicher Häftlinge”, p. 206 (and the author’s reference to interviews in which former female prisoners from Ravensbrück reported their surprise at the “light, well-equipped, and well-heated spotlessly clean factory halls”, including “adjustable work chairs with back and arm rests”, as well as a workplace organized according to the most modern ergonomic standards of the time).

45. See Orth, *System*, pp. 195ff.; Buggeln, *Arbeit & Gewalt*, p. 73 (and the older literature cited there).

46. See Florian Freund, *Arbeitslager Zement. Das Konzentrationslager Ebensee und die Raketenrüstung* (Vienna, 1989), pp. 44, 236, 253; Orth, *System*, pp. 195f.; Wysocki, *Arbeit für den Krieg*, p. 212; *idem*, “Häftlingsarbeit und Rüstungsproduktion. Das Konzentrationslager Drütte”, pp. 52, 58; Hermann Kaienburg, “Vernichtung durch Arbeit” – *Der Fall Neuengamme*, pp. 300ff., 408ff.; *idem*, “Zwangsarbeit für das ‘deutsche Rohstoffwunder’. Das Phrix-Werk Wittenberge im Zweiten Weltkrieg”, 1999. *Zeitschrift für Sozialgeschichte des 20. und 21. Jahrhunderts*, 4 (1993), pp. 37–61, 33.

47. See Schmolling, “Häftlingszwangsarbeit für Siemens”, p. 68; *idem*, “Beispiel Siemens”, pp. 111ff.; Roth, “Zwangsarbeit im Siemens-Konzern”, p. 161. For further examples, see Buggeln, *Arbeit & Gewalt*, p. 314. Beginning in February 1944, with the start-up of the assembly-line production of fighter-bombers in the tunnels of the Mittelwerk of the Dora-Mittelbau concentration camp, reward certificates were ultimately introduced as well as

Given the actual and legal situation of the prisoners these rewards and other forms of incentive-oriented “wages” were, however, little more than cynicism.⁴⁸ Toward the end of the war “negative rewards” predominated, namely the deprivation of food for “poor performance”.⁴⁹ Independent of this, violence and the threat of terror had been the central “incentive system” for concentration camp prisoners who worked on assembly lines since the beginning of the prisoner deployment.⁵⁰ The intensity of the terror aimed at increasing work performance does seem to have varied appreciably according to different phases.⁵¹ This, however, did not alter the fact that for the war-Fordist forced labour system erected by the Nazi regime in the course of the prisoner deployment, financial bonuses and other “incentives” for “Kapos”⁵² were much more significant than the material rewards for prisoners. Within the scope of assembly-line production as well, Kapos and other supervisory staff retained their central role in overseeing and punishing concentration camp prisoners and could

incentives. See Jens-Christian Wagner, “Noch einmal: Arbeit und Vernichtung. Häftlingseinsatz im KL Mittelbau-Dora 1943–1945”, in Norbert Frei, Sybille Steinbacher, and Bernd C. Wagner (eds), *Ausbeutung, Vernichtung, Öffentlichkeit. Neue Studien zur nationalsozialistischen Lagerpolitik* (Munich, 2000), pp. 11–42, 19f.

48. It is remarkable that individual groups of female prisoners, who came originally from the Ravensbrück Concentration Camp and were accommodated in a sub-camp of the Neuengamme Concentration Camp, uniformly rejected a bonus system introduced by the SS. They simply refused to redeem the bonuses issued to them. See Füllberg-Stolberg, “Frauen im Konzentrationslager”, pp. 314ff.; Buggeln, *Arbeit & Gewalt*, pp. 320f.

49. See, for example, Rathkolb, “NS-Zwangsarbeit”, p. 72; Schmolling, “Beispiel Siemens”, p. 110. Exhaustion and malnourishment also characterized the prisoner deployment at Fordist workplaces from the beginning. For example, in early March 1942 the management of the Heinkel factory in Oranienburg, that is, the pioneer in prisoner deployment, planned the work deployment of concentration camp prisoners from nearby Sachsenhausen, but then distanced itself from this because the prisoners were so weakened that they were incapable of work and had to be withdrawn after a single day. Only following a six-month delay did the exploitation of prisoners’ labour begin. See Budraß, *Flugzeugindustrie und Luftrüstung*, pp. 775f.

50. This was not as clearly established in the case of civilian foreign labourers. Nevertheless, for them as well, especially the stigmatized “East labourers”, the threat of restrictions and terror became one of the central “incentives”, and the longer the war lasted the stronger it became. In addition, forced labourers of other categories who had at least visual contact with concentration camp prisoners may have been especially intimidated by the extreme chicanery and agonies that the latter suffered. See Wagner, *Produktion des Todes*, p. 503.

51. The relevant literature gives the impression that between the spring of 1943 and the early summer of 1944 physical violence declined against prisoners used at Fordist workplaces or performing other kinds of “piecework”. After the Allies’ invasion in Normandy and the advance of the fronts, probably also in part on orders “from above”, the tendency of Kapos and the other supervisory staff to engage in physical assaults increased, as prisoners’ inclination to work for the German war machine decreased in light of the imminent collapse of the Nazi system and as their readiness to engage in sabotage grew.

52. From the Italian, *il capo* (the boss). Kapos were functionary prisoners who exercised supervisory and disciplinary functions within the scope of the work deployment.

pocket significant bonuses when the prisoner group they supervised met or exceeded the prescribed piecework quotas.⁵³

In the eyes of some entrepreneurs, prisoner deployment based on racism may also have been functional in immediate industrial production because it divided workers into hierarchical groups more sharply than before.⁵⁴ Another enormous advantage from the perspective of plant management was that, because prisoners were directly subject to the compulsory system of the SS and to factory discipline, fluctuation was minimal, in contrast to civilian foreign labourers. Finally, the issue of industrial safety could simply be ignored with the work deployment of concentration camp prisoners. For instance, the danger of lead poisoning in the production of batteries, the inhalation of toxic gasoline and rubber fumes in the production of gas-masks, or lifting three pieces of heavy cast iron forms (each weighing 7.5 pounds) every minute “in the rhythm of a rolling belt” were part of the everyday lives of female prisoners – and part of the calculations of the respective company management,⁵⁵ especially after 17 May 1942, when heightened maternity protection, issued for racist-eugenic reasons, made it more difficult to employ German women at such hazardous work sites.⁵⁶

From the perspective of entrepreneurs, a fundamental problem with the deployment of concentration camp prisoners in industrial production remained, however, the fact that direct surveillance and other forms of extra-economic force played a more significant role than with foreign *civilian* labourers or with German employees. Moreover, prisoners not only had to be monitored internally; they also had to be strictly separated from the outside world as political or “racial aliens to the community (*rassisch Gemeinschaftsfremde*)”. All of this could result in significant costs. Thus, with the deployment of prisoners at BMW, for example, “the

53. See Buggeln, *Arbeit & Gewalt*, p. 302; Koppenhöfer, “KZ-Arbeit und Gruppenakkord”, p. 29; Miroslav Kárny, “‘Vernichtung durch Arbeit’ in Leitmeritz. Die SS-Führungsstäbe in der deutschen Kriegswirtschaft”, 1999. *Zeitschrift für Sozialgeschichte des 20. und 21. Jahrhunderts*, 4 (1993), pp. 37–62, 44.

54. On the other hand, the deployment of civilian foreign labourers as well as concentration camp prisoners and prisoners of war, often with different and diverse national affiliations, frequently led to significant communication problems, not least with the German-speaking supervisory staff, and as a result – from the perspective of the companies – to unnecessary, counterproductive friction. See Josef Moser, “Aus ökonomischer Sicht: Die Bedeutung des Einsatzes ausländischer Arbeitskräfte, ZwangsarbeiterInnen, Kriegsgefangener und KZ-Häftlinge in den Linzer Eisen- und Stahlwerken”, in Christan Gonsa *et al.*, *Zwangsarbeit – Sklavenarbeit: Politik-, sozial- und wirtschaftshistorische Studien* (Vienna [etc.], 2001), pp. 323–354, 345; Hauch, *Industrie und Zwangsarbeit*, pp. 169–190, 181.

55. See Füllberg-Stolberg, “Frauen im Konzentrationslager”, pp. 324f., 342, citation: p. 324; Herbert Obenaus, “Die Außenkommandos des Konzentrationslagers Neuengamme in Hannover”, in Kaienburg, *KZ und deutsche Wirtschaft*, pp. 211–226, 221.

56. See Hachtmann, “Frauen in der deutschen Kriegsindustrie”, pp. 351–355.

number of people working for the plant-internal security apparatus increased by one third".⁵⁷ In rocket production (V1/V2), where many prisoners were also used, the unproductive surveillance apparatus ballooned; here authorities envisaged a relationship of one guard to five prisoners.⁵⁸ However, given the general scarcity of workers, frequently "guard units could not be assembled, despite all efforts".⁵⁹ For many, if not the vast majority of German industrial managers and business owners, the expansion of the terror and surveillance system within factories did not pose a problem because they found it morally objectionable. Rather it could become a problem because it required a huge surveillance apparatus that could be enormously costly. The implementation of the Fordist production regime did attenuate expenses for unproductive (German) surveillance and disciplinary staff; it did not, however, make them superfluous.

It was thus advantageous for companies that a portion of the additional costs arising from the work deployment of concentration camp prisoners could be shifted to the SS. The SS assumed the costs for the transportation of prisoners to the respective (satellite) camps and also organized accommodations, clothing, food, and medical care as well as surveillance. Beginning in October 1942, companies paid the Treasury 6 Reichsmarks per day for skilled prisoners and 4 Reichsmarks for unqualified male and female prisoners.⁶⁰ The fact that the SS assumed the "unproductive" surveillance and other "social costs" of the work deployment of prisoners may have reduced the inhibitions that companies had about resorting to the most unfree form of forced labour. Nevertheless, the exploitation of prisoners was hardly "cheaper" than other forms of forced labour in the Third Reich. From the standpoint of businesses, the deployment of concentration camp prisoners, most of whom were in very poor health and thus could work only at a limited capacity, made sense above all when it was impossible to obtain labourers elsewhere.

In a whole series of cases, however, the issue of the immediate "economic functionality" of prisoner deployments in the narrower sense did not play a crucial role. An "attractive argument" for the work deployment

57. According to Fröbe, "Arbeitseinsatz von KZ-Häftlingen", pp. 45f. On the economic ambivalence of the prisoner deployment, see *idem*, "KZ-Häftlinge als Reserve qualifizierter Arbeitskraft. Eine späte Entdeckung der deutschen Industrie und ihre Folgen", in Ulrich Herbert, Karin Orth, and Christoph Dieckmann (eds), *Die nationalsozialistischen Konzentrationslager – Entwicklung und Struktur*, II (Göttingen, 1998), pp. 636–681, 663f., 666ff.

58. Buggeln, "Concentration Camp Prisoners", p. 110; Bertrand Perz and Florian Freund, *Das KZ in der Serbenhalle. Zur Kriegsindustrie in Wiener Neustadt* (Vienna, 1987), p. 73.

59. Fröbe, "Arbeitseinsatz von KZ-Häftlingen", p. 51. Similar also, for example, is Peter Hayes, "Die IG Farben und die Zwangsarbeit von KZ-Häftlingen im Werk Auschwitz", in Kaienburg, *KZ und deutsche Wirtschaft*, pp. 129–148, 143.

60. See Johannes Tuchel, *Die Inspektion der Konzentrationslager 1938–1945. Das System des Terrors* (Berlin, 1994), p. 142; Kaienburg, *Wirtschaft der SS*; Orth, *System*, p. 181.

of concentration camp prisoners was that they “offered greater security in maintaining secrecy”;⁶¹ here the cynically brutal slogan “extermination through labor” [*Vernichtung durch Arbeit*] was directly applicable. Especially in the domains of advanced armaments the criterion of profitability played at best a subordinate role.

The empirical constellations from 1942 onward do not allow for an unambiguous judgment about the economic functionality or dysfunctionality of Fordist production regimes in the context of prisoner deployments (or about other forms of forced labour). The picture that emerges from the subjective perspectives is comparatively unambiguous, that is, those of entrepreneurs but also of the central functionaries of the Nazi regime. Hitler and his henchmen were avid supporters of the “American” mode of production propagated by United States automobile king (and prominent anti-Semite) Henry Ford and implemented in his Detroit factories. The “Führer” had made no secret of this already in the 1920s, and his enthusiasm for Ford and the Fordist production regime continued to the end of World War II.⁶² When Nazi functionaries responsible for the war economy sought to build from scratch huge business complexes oriented around the “American” production model and to gain Hitler’s support for their plans, the name “Ford” sufficed as a reference.⁶³

Besides the Volkswagen plant near Fallersleben, in architectural terms largely a somewhat oversized copy of the Ford Company River Rouge factory (the most modern automobile factory in the world at the time), another manifest example of this was the plan by the Inspector General of the Luftwaffe, Erhard Milch, to construct a huge aircraft factory in Silesia or the “General Government” in 1942–1943 with the revealing code name “Ultra”. Milch, one of the enthusiastic “protagonists of converting [the German war economy] to the American mode of production” (Lutz Budraß), needed only to mention the name “Ford” when meeting with

61. Aktennotiz der Heeresanstalt Peenemünde vom 16. April 1943; Freund, “Entscheidung zum Einsatz von KZ-Häftlingen”, p. 66. See also, e.g., Perz and Freund, *KZ in der Serbenhalle*, p. 80, or Grieger, “‘Vernichtung durch Arbeit’”, p. 51.

62. See Rüdiger Hachtmann, “‘Die Begründer der amerikanischen Technik sind fast lauter schwäbisch-alemannische Menschen’: Nazi-Deutschland, der Blick auf die USA und die ‘Amerikanisierung’ der industriellen Produktionsstrukturen im ‘Dritten Reich’”, in Alf Lüdtke, Inge Marbolek and Adelheid von Saldern (eds), *Amerikanisierung. Traum und Alptraum im Deutschland des 20. Jahrhunderts* (Stuttgart, 1996), pp. 37–66; Philipp Gassert, *Amerika im Dritten Reich. Ideologie, Propaganda und Volksmeinung* (Stuttgart, 1997), pp. 148–163. The initially discredited “rationalization” concept was also re-established, beginning in 1936. See *ibid.*; Thomas von Freyberg and Tilla Siegel, *Industrielle Rationalisierung unter dem Nationalsozialismus* (Frankfurt [etc.], 1991), pp. 77ff., 319ff.; Budraß, *Flugzeugindustrie und Luftrüstung*, pp. 518–526.

63. The following, including the citation, has been taken from Budraß, *Flugzeugindustrie und Luftrüstung*, pp. 789–795.

Hitler and Göring in order to receive their approval for the 1,000-bomber factory he had planned. The single-hall plant (*Einhallenanlage*) for Ultra (in contrast to the American model, without windows) was supposed to be constructed “similar to the way the Americans build their serial plants” (according to Milch in 1942), that is, following the model of the large-scale aircraft factory in Willow Run (a town near Detroit) built by Ford beginning in 1941.⁶⁴ Milch was so certain of the “magic of rationalization” that Ford’s name would have on Hitler, Göring, and others that he believed he could also use it to secure his own political power, that is, that the Fordist single-hall plant Ultra, erected on 150 acres (with several thousand workers), would allow him to revive or extend his own direct “bond with the Führer”, central for Milch’s position of power, which had been threatened beginning in 1942 by Minister of Armaments Albert Speer.

Given the general lack of labourers – and probably also the established routines with prisoner deployments in other aircraft companies – it would have been primarily concentration camp prisoners who were forced to work at the gigantic new aircraft factory, also and precisely in the fabrication of aeroplanes. Due to the enormous foreseeable construction costs of Ultra – which in turn allowed for the continued political rise of the Organization Todt (OT)⁶⁵ – as well as the growing range of the Allied bomber fleets, plans for Milch’s aircraft factory were ultimately dropped. It is no coincidence, however, that Ultra became the godfather of the gigantic and barbaric plans for “Dora”, the concentration camp network located in caves and tunnels, which was partially implemented beginning in 1943. In this new conception, the gigantic 150-acre complex planned for Ultra became 6 half-underground “cement mushrooms”, each encompassing 25 acres, with coordinated Fordist production facilities initially for aircraft and later for rocket production.⁶⁶

Given the predicted scarcity of labourers even after the Nazi’s “final victory”, certainly not all, but a remarkably large number of German

64. In March 1944 one B-24 Liberator heavy bomber was assembled from 1.25 million individual parts every hour at this Ford aircraft factory, which had begun production in April 1942. The 40,000 workers employed overall were initially accommodated in barracks, trailers, tents, and earthen huts.

65. Given the construction costs, only the OT would have been a position to carry out Ultra. Prior to the discussion of the implementation of Ultra, the OT had been limited to construction projects outside the borders of the “Großdeutsches Reich” [Great German Reich]. After the consultations about Ultra and its possible location in Silesia, the OT saw the opportunity to become active within the German Reich as well and to separate itself from the Speer construction empire, to which it had been subordinate. Thus, it was no coincidence that after the Ultra project had been shelved (according to the participants, temporarily), the head of the OT, Xaver Dorsch, came up with plans in October 1943 for the construction of an underground aircraft factory for the production of 500 fighter jets a month. Dorsch was successful here. The OT subsequently became independent of Speer, assumed the entire building industry for the Luftwaffe, and was now permitted to act within the “Altreich” as well.

66. See Budraß, *Flugzeugindustrie und Luftrüstung*, p. 795.

entrepreneurs and managers reckoned over the long term with war-Fordist mass production combined with concentration camp prisoners or members of “inferior slave races” with a virtually similar status. Thus Fordism (now no longer as a slogan, but as a social practice) remained a “magic formula” (Thomas von Freyberg) that fascinated the political and economic functional elite in Germany even during World War II. Moreover “Fordism” also served as the consensus formula capable of occluding some of the divergences of interests (most, however, not terribly profound) between representatives of the regime and industry.

The subjective perspective of ardent advocates of Fordism within the Nazi regime and private industry, on the one hand, and the actual – long-term economic – “probation” of prisoners’ labour within Fordist industrial factories, on the other, stand at odds with one another. To put this pointedly: the top echelon of the Hitler dictatorship was taken in by Fordist perspectives that turned out to be illusions, at least in the long run. The outline here of the empirical constellations from late 1942 onward makes clear that the deployment of prisoners in industrial enterprises organized according to Fordist production principles, particularly in terms of technical production, would ultimately have led nowhere.

The work deployment of concentration camp prisoners may indeed have been beneficial for the workplace rationality supported and promoted by the Nazi regime to the extent that it accelerated the establishment of robust variants of assembly-line production in new industries.⁶⁷ At the same time, however, it delayed the leap to (partial) automation as the next step in the rationalization of production technology, when it did not make this impossible. It is no coincidence that the decision by Opel, the leading German automobile company in terms of manufacturing technology after 1939, not to use concentration camp prisoners, despite all the labour-market bottlenecks, was based less on moral scruples than on the fear that the “efficiency of highly rationalized production” could suffer.⁶⁸ In retrospective reports and interviews, concentration camp

67. In this regard as well, however, it is important to differentiate according to branches. It is remarkable, for example, that the “veteran shipping industrialist”, Rudolf Blohm, as head of the *Hauptausschuss Schiffbau* [Main Committee Shipbuilding] at the Speer Ministry refused to enforce the accelerated implementation of Taylorist and Fordist production regimes pushed by the Nazi regime in the shipbuilding industry because he regarded it “as basically [...] completely devoid of culture”; Buggeln, *Arbeit & Gewalt*, p. 96; see also *ibid.*, p. 284. On Blohm, who was by no means an opponent of work deployments using concentration camp prisoners, see *ibid.*, pp. 95f. Otto Merker, Blohm’s successor as head of the *Hauptausschuss Schiffbau*, first established serial production in larger dimensions, above all in the construction of submarines, and (thereby) a partial Fordization of production methods in shipbuilding as well.

68. See Anita Kugler, “Die Behandlung feindlichen Vermögens in Deutschland und die ‘Selbstverantwortung’ der Rüstungsindustrie. Dargestellt am Beispiel der Adam Opel AG von 1941 bis Anfang 1943”, 1999. *Zeitschrift für Sozialgeschichte des 20. und 21. Jahrhunderts*,

prisoners repeatedly pointed to the diverse opportunities for sabotage in assembly-line production.⁶⁹ Considered in terms of modernization theory, the connection between Fordism and extreme forced labour, as performed by such prisoners, thus led to a dead end.

GERMAN WAR FORDISM FROM 1941 TO 1944 WITHIN THE LONG-TERM TREND

The preceding remarks are based on reflections that arose as part of a portrayal of German (factory) Fordism spanning the entire twentieth century. In closing here I thus offer several theses about how Fordism between 1941 and 1944 can be classified within an entire history of Fordism in Germany (the Weimar Republic, the Third Reich, the German Democratic Republic, and the “old” Federal Republic).

Fordism became socially acceptable in Germany not least through wars. World War I shattered traditional certainties and accustomed people to the arbitrary and quasi-mechanical displacement of hundreds of thousands, if not millions of soldiers degraded to the marionettes of imperialist politics and the canon fodder of inhuman general staffs. The transfer of these principles to the civilian world, especially in businesses often employing tens of thousands of people, was hardly surprising;⁷⁰ nor was the introduction of workplace rationalization as a technology of domination that promised to reign in a working class grown insubordinate.

3/1988, vol. 2, pp. 46–78, 67; Mark Spoerer, *Zwangsarbeit unter dem Hakenkreuz. Ausländische Zivilarbeiter, Kriegsgefangene und Häftlinge im Deutschen Reich und im besetzten Europa, 1939–1945* (Stuttgart [etc.], 2001), p. 239. There are only intimations in Henry Ashby Turner, *General Motors und die Nazis. Das Ringen um Opel* (Berlin, 2006), pp. 203–206, 205. In addition to Opel and several other companies, the management of the Dräger factory also appears to have hesitated in using concentration camp prisoners in gas-mask production. See Bernhard Lorenz, *Industrieelite und Wirtschaftspolitik 1928–1950. Heinrich Dräger und das Drägerwerk* (Paderborn [etc.], 2001), p. 334; more generally see, e.g., Lutz Budraß and Manfred Grieger, “Die Moral der Effizienz. Die Beschäftigung von KZ-Häftlingen am Beispiel des Volkswagenwerks und der Henschel Flugzeug-Werke”, *Jahrbuch für Wirtschaftsgeschichte*, 1993:2, pp. 89–136, 130f. Contrary to claims in the scholarly literature, several hundred female prisoners were used in the production of timed detonators, incendiary shrapnel, etc., in at least one subsidiary of the Zeiss-Ikon AG of Jena, the Goehle-Werk (established in 1941). See Ulrich Fritz, “Dresden (Goehle-Werk)”, in Wolfgang Benz and Angelika Königseder (eds), *Der Ort des Terrors. Geschichte der nationalsozialistischen Konzentrationslager*, IV: *Flossenbürg, Mauthausen, Ravensbrück* (Munich, 2006), pp. 88–91.

69. See the aforementioned studies by Füllberg-Stolberg, Jacobeit, Buggeln, and others.

70. Many contemporaries were well aware of this connection between modern mass warfare, on the one hand, and Fordism or Taylorism, on the other. For example, Fritz Schumacher, a professor of architecture and cofounder of the Deutscher Werkbund, declared in the 1920s that World War I had “transformed the masses in a human machine and accelerated the path to mechanization and rationalization”; Joan Campbell, *Der Deutsche Werkbund 1907–1934* (Munich, 1989), p. 132.

This explains above all the emphatic reception of Frederick W. Taylor's central work *The Principles of Scientific Management*, published in German in 1919 as *Die Grundsätze wissenschaftlicher Betriebsführung*, and Ford's autobiography several years later, far beyond entrepreneurial and managerial circles in Germany, for example, even among broader segments of trade unions – despite all the criticisms of workers.

The Nazi assumption of power and World War II once again significantly accelerated the implementation and expansion of Fordist production regimes and related rationalization systems. It is no coincidence in this context that the rationalization measures supplementing Fordism, for example, the job evaluation systems also developed in the United States (notably by Charles Bedaux) in the early 1920s found broad application in Germany in World War II. The Lohnkatalog Eisen und Metall (LKEM) [Wage Catalogue Iron and Metal], introduced in the metalworking industry throughout the German Reich, beginning in 1942, was employed extensively as a differentiated job evaluation system in the Federal Republic of Germany far into the 1960s and was also used in a modified form in the German Democratic Republic.⁷¹

In addition, World War II crucially changed mentalities within the German working class. After the Nazis crushed the organized labour movement in Germany in 1933, they subjected the working class to a drumfire based on terror and a constant stream of propaganda, as well as a complex system of enticement and force. Between 1939–1941 and 1945, the attitudes of younger generations of male German workers were fundamentally shaped by the fact that from 1941 onward the core of the Fordist rationalization proletariat in Germany was constituted first and

71. For details on the prehistory, structure, and implementation of the LKEM (which also used civilian foreign labourers, but not prisoners of war or concentration camp prisoners), see Marie-Luise Recker, *Nationalsozialistische Sozialpolitik im Zweiten Weltkrieg* (Munich, 1985), pp. 223–250; Hachtmann, *Industriearbeit*, pp. 210–223; Tilla Siegel, *Leistung und Lohn in der nationalsozialistischen Ordnung der Arbeit* (Opladen, 1989), pp. 257–264. On the expansion of the LKEM in the Federal Republic of Germany, see especially Günter Könke, “Die ‘Arbeitsbewertung’ in der Metallindustrie in der Kontinuität vom ‘Dritten Reich’ zur Bundesrepublik”, in Karl-Christian Führer (ed.), *Tarifbeziehungen und Tarifpolitik in Deutschland im historischen Wandel* (Bonn, 2004), pp. 141–174, 155ff., 162ff.; Günter Könke, *Arbeitsbeziehungen in der hamburgischen Metallindustrie 1918–1974* (Berlin, 2004), pp. 513ff., 519f., 523ff.; Siegel, *Leistung und Lohn*, pp. 263ff. It is remarkable that precisely the Industrial Union of Metalworkers in Germany (IG Metall), after initial reservations, pushed the introduction and expansion of the LKEM, pointing to the scholarly, and thus ostensibly correct, character of the evaluation and classification procedures prescribed in it. In the GDR in the 1950s the Technisch begründete Arbeitsnormen (TAN) [technically-based work norms] were connected rather directly to the LKEM, at least in terms of original or initial forms. On this, see the path-breaking study by Axel Bust-Bartels, *Herrschaft und Widerstand in DDR-Betrieben. Leistungsentlohnung, Arbeitsbedingungen, innerbetriebliche Konflikte und technologische Entwicklung* (Frankfurt [etc.], 1980), pp. 75ff.

foremost by foreign labourers, especially male and female “eastern labourers” from the Soviet Union (frequently replacing German women, whose portion of the overall workforce declined markedly, starting in 1942). In contrast, male German workers, insofar as they remained in enterprises, advanced to become racially privileged foremen and head workmen.

The hierarchically racist stigmatization of foreign labourers, pushed by the Nazi regime and at least tolerated by businesses, and even more powerfully the frequent deployment of prisoners of war and concentration camp prisoners on assembly lines had a significant impact on the basic attitudes of German contemporaries, leaving sustained traces and profound resentments. After 1945, the openly racist discrimination against foreign workers was no longer tolerated publicly in either of the two German states. The “guest workers”, who were brought to Germany, starting in the late 1950s and who along with (German) women became the core of the Fordist rationalization proletariat that powerfully expanded with the “*Wirtschaftswunder*”, continued to be regarded largely with contempt in the Federal Republic of Germany. A latent racism slumbered beneath the surface.⁷²

Overall three elements of latent discrimination established or intensified during World War II have influenced the mentalities of large segments of workers in the Federal Republic of Germany (and probably also partially workers in the German Democratic Republic). (1) Skilled workers – even those with social-democratic and communist leanings – and along with them the trade unions were traditionally proud of German workmanship;⁷³ from their occupationally privileged perspective, they looked down contemptuously on workers trapped in the principles propagated by Taylor and Ford and forced to perform machine-like motions. (2) The fact that the underclass of the proletariat in the German Reich came to consist of foreign labourers as well as prisoners of war and concentration camp prisoners abetted a mode of thought that made sweeping identifications between national affiliations, on the one hand,

72. Xenophobia and latent racism are admittedly a general phenomenon and can currently be observed in numerous industrial states, not least among the working class. They point to general, quite effective mechanisms of inclusion and exclusion in modern civil societies. In addition, the conservative-bourgeois media at times consciously mobilizes racist resentments, if this appears called for in order to divide workers and protest movements, as has been recently pointed out, for instance, by Birke in his groundbreaking study of wildcat strikes (using the example of the collective action carried out, especially by Turkish employees, at the Ford factory in Cologne in August 1973). See Peter Birke, *Wilde Streiks im Wirtschaftswunder. Arbeitskämpfe, Gewerkschaften und soziale Bewegung in der Bundesrepublik und Dänemark* (Frankfurt [etc.], 2007), p. 274.

73. On the high value placed on the notion of “German workmanship” (*Deutsche Qualitätsarbeit*) by German skilled workers, see above all Alf Lüdtke, *Eigen-Sinn. Fabrikalltag, Arbeitererfahrungen und Politik vom Kaiserreich bis in den Faschismus* (Hamburg, 1993).

and ostensibly higher or lower work capacities and/or motivations based on “race”, on the other. As a consequence of occupying the top tier of the employee hierarchy for years, many skilled workers in Germany (along with broad segments of the population at large) internalized racist principles. Simultaneously beginning in 1933 the Nazi regime and its apron organizations, especially the DAF, systematically eradicated the ethical norms of the traditional labour movement based on the principle of international solidarity among the proletariat, and was quite successful overall in this regard. (3) Finally, beginning in 1925 and then more intensely beginning in 1936 and during the war, Fordism divided the workforce along gender lines into repetitive and monotonous sub-operations on the assembly line, on the one hand, for which (according to the tenor of ergonomics) women were said to be particularly well-suited; and into a “new skilled work” performed above all by (German) men (the installation, repair, and inspection of ever more complex and automated production plants), the job profile of which increasingly approached the role of technical employees and fostered a corresponding form of status-oriented thinking.

These changes, which presupposed the stigmatization of ostensibly peripheral groups of workers, induced lasting transformations in proletariat mentalities. Moreover they contributed to a fundamental “modernization” of the social culture of the underclass, the most significant expression of which was the disappearance of classical working-class milieu. In this regard as well, a (war) Fordism – in Germany also embedded in a fateful social-political context – had sustained consequences beginning in 1933.