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BETWEEN DENMARK AND DETROIT

Ford Motor Company A/S and the Transformation of Fordism 1919–1966

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Introduction

This is the story about one of the first ever factories in Europe, making cars by modern methods of mass production, including the assembly line. The factory was located in Copenhagen, Denmark, and its name was Ford Motor Company A/S.

Not many foreign observers in general, or historians of business, labour, or technology in particular, would associate Denmark with any type of car industry. To Danes of the present generation, cars are something that we import from Asia or from much larger European countries, not least neighbouring Germany—or even from our close cousins in Sweden. But there was in fact a time, when a rudimentary German auto industry looked with envy upon the state of affairs in Denmark, and when Sweden was flooded with cars from Copenhagen.

To be honest, the golden age of our car industry cannot entirely be attributed to Danish ingenuity and resourcefulness. On the contrary, as the name Ford Motor Company suggests, it was brought to the country from outside, as the then-largest manufacturer of cars in the world decided to establish an assembly plant in Denmark in 1919. The immediate success of Ford attracted other foreign operators, most notably General Motors and Citroën, and for a period in the interwar years, Copenhagen was a Detroit in miniature.

Having passed through the Copenhagen South port area several times, noticing the iconic building that once housed the Ford assembly plant, I became interested in knowing more about its history. I was also vaguely aware that it had been the site of conflict between Fordist principles of management and Danish trade unions.

Then I became involved in setting up an exhibition on industrial culture at the National Museum of Denmark. I suggested that we

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should exhibit a Ford Model T, assembled in Copenhagen, to represent this almost forgotten history. After some research I was able to obtain a car for the museum, which had papers to prove beyond reasonable doubt that it had been assembled in Denmark in 1924.

This was what prompted me to dig more deeply into the history of Ford Motor Company A/S. As I found more and more source material, the story unfolded, expanded, and became increasingly fascinating. Sadly, the remains of the Copenhagen Ford plant have since been demolished, despite attempts to have it listed as an industrial landmark. The National Museum has abandoned its commitment to industrial heritage and removed the Danish Ford T from its exhibitions. But at least the history of the company, which brought mass-produced automobiles to Denmark, the people who assembled them, and the impact it made may now be read on the following pages.

As the subtitle implies, this is a book not just about the Danish Ford factory, but also about the transformation of Fordism from Detroit to Denmark. It has the ambition of bringing the Danish experience into the international history of Fordism, and of using it as a case for better understanding that history. For that, and in order to be able to see the changes that took place over time and space, it starts out with a chapter on the historical creation of Fordism, starting with Detroit in the early 20th century. In this chapter, I also present my understanding of Fordism as made up of three aspects: as a form of production, as a regime of industrial relations between workers and management, and finally as a social vision.

The following five chapters, which form the main part of the book, present the history of Ford Motor Company A/S. To help the reader getting an overview of the narrative, it has been broken up into five chronological periods. Within each period, it is structured under five recurring themes: Production, Markets and models, Management, Industrial relations, and Presence. The reasons for choosing these themes and what they imply will be explained in more detail at the end of the first chapter.

Fordism may be seen as a special case of Americanism and its transfer to Europe as a form of Americanisation. In public debate, Americanism has often been understood as a one-way process, in which

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American cultural, political, or economic power has simply been conquering other nations. But this simplistic picture has been challenged by research. Today, according to the prevailing notion, it is an active process, in which the nations, cultures, and economies being Americanised play an active role themselves, ranging from resistance to embrace—and that which is transferred from America to the receiving nations is also transformed, as part of this active process.[1]

It is this process I refer to as the transformation of Fordism. Through the empirical narrative of the history of Ford Motor Company A/S, this process may be traced through time. Consequently, a prevailing theme throughout the narrative is how the orders, expectations, and impulses coming from Detroit were implemented, adapted, or ignored in Copenhagen.

The last part of the book ties together a theoretical understanding of Fordism with the previous narrative of the history of Ford in Denmark and tries to point out what we might learn from this narrative about the actual transformation of Fordism from its origin in Detroit in the early 20th century to post-war Europe.

When discussing this last topic, special attention will be given to the Social Democratic Party and the labour movement. The reason for this is that the social democrats became the leading political party and rose to power during the period in which Ford established itself in Denmark. At the same time, the party started on the political path which would lead to the welfare state. During the post-war years, when Denmark became firmly included in the "western camp", the social democrats were also a leading political force. The Social Democratic Party was heading the government in roughly 35 out of the 47 years covered in this book. It is therefore of interest, if any influence or inspiration from Fordism can be identified in relation to this party.

My own academic background is in labour history, especially that of labour unions in industry, which has gradually expanded over the years, into the social and cultural history of industrial society in general. To write the story of Ford Motor Company A/S, I have had to reach out into disciplines with which I am not totally unfamiliar but in no way an expert, most notably business history and economic his-

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tory. Grazing beyond one's usual academic pastures may enhance the risk of misstatement, but compared to the safe but tedious results of confining oneself to the same, small plot, it is a risk worth taking.

In a study like this, many topics arise, and many questions pose themselves, which may not always be answered. Just one example: a systematic comparison between Ford Motor Company A/S and one or more of Ford's other European assembly plants, especially in regard to management and industrial relations, would have been beneficial to our understanding of what was specific and what was general to the history of Ford in Denmark. Unfortunately, this would require work beyond the resources available. I have tried to strike a balance, which includes both relevant theoretical discussion of Fordism as well as parts of its European context, where it is needed most—but still allows for a detailed and vivid presentation of the actual history of Ford Motor Company A/S.

The text is generally British English. But several terms related to cars, such as specific parts and types are different in American English. And since the American terms of course are used by Ford, the same will be the case in this book to avoid confusion. For example, the cover of the engine is called the hood (not the bonnet), while conversely the part that can be raised to cover an open body is called the top (not the hood). Chassis can refer to the frame on which a car is built, as well as a complete car just without a body mounted. Similarly, a load-carrying motor vehicle is called a truck. If necessary, the meaning is specified in the text.

Inside the auto-industry, cars that are delivered for sales as pre-assembled, as opposed to being assembled locally, are known as built-ups. Pre-assembled and built-up are used interchangeably in the following.

Ford Motor Company A/S is always a reference to the Danish company. When only the name Ford or Ford Motor Company is used, it might be a reference to the global enterprise or to a specific, national subsidiary. If the meaning is not clear from the context, national subsidiaries will be identified with the name or abbreviation of the country in question, for instance Ford UK.

In colloquial Danish, the term for union might be used for both local branches as well as national associations. To avoid misunder-

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standings, the term association is used in the following, when referring specifically to the national level of union organisations. An agreement is to be understood as the written result of collective bargaining between unions and employers, roughly similar to what is sometimes called a union contract in English. A shop steward is a union representative, elected by and among workers at shop floor level. A leading shop steward is the elected spokesperson of all workers at an enterprise. Further details about concepts and institutions in the Danish system of industrial relations are given at relevant points in the text.

The distinction between skilled and unskilled labour is important for understanding the conflicts caused by the transformation of Fordist industrial relations into a Danish context. In the following, a craftsman means a skilled worker, who has completed an apprenticeship, while a workman is a worker with no formal training.

Dates are generally given in the order of day, month, and year, except in quotations where the original format is retained. Danish quotations have been translated by the author, unless otherwise noted.

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Henry Ford had
no ideas on mass production

Charles Sorensen

The Creation of Fordism

What is Fordism? Unfortunately, there is no simple answer to that. In contemporary public debate, Fordism is often used to label a certain period in the history of the western economy, a period characterised by mass production, high productivity, and a social compromise between organised labour and capital, as well as a period of rising consumption and the establishment of some variation of welfare state in large parts of Western Europe. Fordism in this sense is an era of the post-war period, reaching its apex in the 1950s and 1960s, before it was challenged and maybe even defeated by other regimes of accumulation by the end of the 20th century.

But we may trace the historic roots of Fordism to a time long before that: the very beginning of the 20th century. It was then that Henry Ford entered onto a path towards a novel form of industrial mass production, based on the assembly line, taking place in a factory regime where intensive labour and strict discipline are remunerated by high wages. Fordism in this sense reached its apex around 1920, when Ford Motor Company had become the world's largest manufacturer of mass-produced automobiles. This was also the Fordism that was popularised, envied, but also criticised by many in Europe during the period between the two world wars.

Not only does the conceptual understanding of Fordism, prevalent today, focuses on a period several decades later than that in which Fordism came into being as an empirical reality. In fact, a strict interpretation of contemporary concepts will also lead to the paradoxical conclusion that what Henry Ford practised in Detroit in the 1920s was not really Fordism, the most obvious out of several reasons being that there was no welfare state in the USA in the 1920s and certainly no organised labour at Ford Motor Company in Detroit.

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Fordism Made in Detroit

The historical development of Fordism is inseparably bound to the creation and success of the Ford Model T. Charles Sorensen was a Danish immigrant who started working for Ford in Detroit as a pattern maker and ended up being vice president of the company. Sorensen was deeply involved in the design and development of the Model T, and he would later claim that:

> Henry Ford had no ideas on mass production. He wanted to build a lot of autos. He was determined but, like everyone else at that time, he didn't know how. In later years he was glorified as the originator of the mass production idea. Far from it; he just grew into it, like the rest of us.[1]

While it might not be quite fair to say about a man who worked with Fords determination that he "just grew into it", Sorensen's claim is to the point in the sense that the development of the Fordist Model of production did not follow a previously thought-out masterplan. It was a step-by-step process, based to a great extent on trial and error.[2]

Since the marketing of the first commercially available petrol-driven automobile by Carl Benz in 1886, most cars had been produced in limited quantities at high prices. Around the turn of the century serial production had gradually been introduced, especially in the USA, but the car was still considered a luxury product. It was Henry Ford's vision to make "a motor car for the great multitude", built by "the simplest designs that modern engineering can devise" and, consequently, "so low in price that no man making a good salary will be unable to own one".[3]

Ford Motor Company had already introduced serial production with the Model N, the predecessor to the Model T. For the Model N, Ford had applied the use of special purpose machines, jigs, and fixtures, making it possible to produce completely interchangeable parts, and thereby eliminating the time-consuming process of fitting by hand during final assembly. Already in the period of the Model N, Ford Motor Company proudly declared: "We are making 40,000

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cylinders, 10,000 engines, 40,000 wheels, 20,000 axles, 10,000 bodies, 10,000 of every part that goes into the car … all *exactly alike*".[4]

With the Model T, Ford added to this a number of novel design ideas, resulting in a car that was at the same time lighter than most, but strong and durable—ideal for use on the bumpy, unpaved roads of rural America. But the design choices were also made to cut down on production costs, meaning it could be sold at a lower price than any competing model at the time.

The Model T was introduced in 1908, and within a year Ford decided to stop the simultaneous production of Model N and concentrate all the company's efforts on this new model only. It was to be produced in a handful of different body-variants, but all based on the same engine, chassis, and drivetrain.[5] The use of colours was also gradually limited, and from early 1915 the Model T was available to customers in one colour only: black.[6] By such radical standardisation, Ford Motor Company now committed itself fully to a strategy of producing and selling by volume.[7]

Development of the Model T had taken place at Ford's original Piquette Avenue plant in Detroit, but in 1910 a completely new factory was opened in Highland Park, also in Detroit. Following the decision to concentrate on the Model T only, this new facility had been planned in detail for the most optimal production of this specific model. Machines were installed in a sequence determined by when they were needed in the production process. Several new special-purpose machines were designed for mass production, such as a drill that would simultaneously drill forty-five holes in four sides of an engine block or a milling machine that would accurately machine fifteen engine blocks at a time.[8]

In 1909, the first full year of Model T production at the Piquette Plant, 13,840 cars had been produced. In 1912, the year before the assembly line was even introduced, 82,388 units were produced at Highland Park. Even more importantly, however, the sales price of each car had dropped from US$950 to 600, testament to a substantial decrease in unit production cost.[9]

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The assembly line

Despite all the advancements in production, the final assembly of the Ford Model T at Highland Park in 1912 was done in basically the same way as the Model N had been assembled at the Piquette Plant, and as cars were generally assembled throughout the industry: each car was built up from the ground at a fixed place, by teams of assembly workers moving from car to car, with the parts and tools necessary to do their job.

In 1913, the first assembly line was introduced in Highland Park. The first line was manual, and the chassis had to be pushed forward on its own wheels from station to station along the line. Then in early 1914, the assembly line was motorised.[10]

With the introduction of the line, the whole logic of assembly was changed: instead of workers coming to the job, the job was coming to the workers. And regulation of the speed of work was now—at least in principle – a simple matter of adjusting the speed at which the line was moving forward[11]. Specialised tools could be installed, and parts could be stored along the line, at the exact places and in the quantities needed. Furthermore, the assembly line was combined with a system of conveyors and slides for moving parts and partly assembled cars around.

The line became the proverbial backbone in the production system developed at the Ford Motor Company. Before the assembly line, it would take an average of 12 hours 28 minutes to assemble one Model T chassis. In early 1914, when the assembly line had been developed into its mature form, this took just 1 hour 33 minutes.[12] The assembly line became the apex of the gradual development of the original Fordist productive model, a model characterised by the manufacturing of one single, standard model, in a highly centralised and rationalised production process.[13]

Fordism is sometimes conflated with the "scientific management" of F.W. Taylor. Both were part of a general effort in the USA in the early 20th century to increase industrial output by applying rational, so-called scientific methods. But they are also different in a fundamental sense. Broadly speaking, Taylor's aim was to teach workers

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how to use the existing production apparatus as rationally and efficiently as possible. Ford's approach was to change the whole production process.[14]

In this sense, Fordism was a radical new step in the history of division of labour. It was made possible only by a rigorous separation of design and execution in the work process.[15] The result was a strict hierarchy among workers. At the top was a small group of highly qualified skilled workers and engineers, with their ability to construct specialised tools and to plan the optimal production process.[16] The rest of the workforce, on the other hand, those who operated the machines or manned the assembly line, only needed minimal training.

In the words of Henry Ford himself:

> While [...] we have skilled mechanics in plenty, they do not produce automobiles—they make it easy for others to produce them. Our skilled men are the tool makers, the experimental workmen, the machinists, and the pattern makers. They are as good as any men in the world—so good, indeed, that they should not be wasted in doing that which the machines they contrive can do better. The rank and file of men come to us unskilled; they learn their jobs within a few hours or a few days.[17]

This was also reflected in how the workers were looked upon from above. When explaining how moulding-machines in the foundry made it possible to reduce skilled moulders to only five percent of the workforce, while the remaining 95 percent of the workers could be unskilled, Henry Ford adds: "Or to put it more accurately, must be skilled in exactly one operation which the most stupid man can learn within two days."[18]

Industrial relations

Substitution of skilled labour with unskilled was a general development in the industrial labour market in USA in the early 20th century. The rapidly growing mass-producing industries found themselves unable to satisfy the need for labour power from the limited number of skilled workers alone, and therefore had to find ways to tap into the much larger resource of unskilled labour power. Ford Motor Com-

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pany may have been at the forefront, but they were not alone. In 1923, a survey of the auto industry found that only nine percent of the workers were skilled craftsmen, such as machinists, while another nine percent were unskilled, common labourers. The great majority consisted of unskilled workers, trained either for work at the assembly line (18 percent) or as machine tenders (47 percent).[19]

For the skilled worker, this might have been a negative development. But for the unskilled worker, things looked different; it was a step up from being a common labourer outside the industry and would often lead to a higher paycheck.[20] But from a perspective above that of the individual worker, the "dilution of skills" was part and parcel of the transfer of control over the labour process, away from the workers and into the hands of supervisors and management. Apart from making a much larger potential workforce available to industry, it also had the effect of undermining labour unions, as these were traditionally craft based.

Instead of certain skills, what was demanded more than anything else from the Fordist worker was, in the words of a contemporary observer:

> The ability to meet ('to hit') and maintain a constant pace, to be able to eliminate all waste and false motions; to follow without wavering printed instructions emanating from an unseen lodge in some far off planning department—these constitute the requirements of a successful machine tender.[21]

The constant pace was secured by the assembly line, and the workers were now in principle no longer in control of the labour process but controlled by it.[22]

But the human spirit is, after all, not that easily broken. Workers at Ford Motor Company reacted in increasing numbers to what they saw as a boring, repetitive, and fast-paced job by simply quitting, often from day to day and without notice. During 1913, the first year of the assembly line at Highland Park, the rate of people leaving the factory reached a staggering 370 percent of the total workforce.[23] Furthermore, there were massive problems with absenteeism and lack of work discipline.

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High wages and strict discipline

Henry Ford's solution to this was the sudden rise of the daily wage to $5—roughly two times the payment for comparable jobs in other industries—in January 1914, and the simultaneous reduction of the daily working hours from 9 to 8. In line with Ford's ideological message of employer and employees being united by a common interest in production, this was presented as a profit-sharing program: the $5 was made up by a basic wage plus an extra bonus, supposed to be the workers' share of company profit.[24]

To receive the bonus, a worker initially had to live up to certain social and moral standards. A special department, the Ford Sociological Department, was set up to manage the program. Files were kept on each worker, and company investigators visited workers at home, checked their personal economy and even interviewed neighbours to learn about their "habits", to decide if they were eligible. However, after a few years these paternalistic elements were removed, and the bonus wage made dependent on seniority only.[25]

But the initiative had paid off: following the introduction of the $5 day, labour turnover at Highland Park was reduced to 16 percent in 1915, and there had been an overall rise in productivity.[26] Moreover, this widely published initiative gave Henry Ford an image as "the people's tycoon" and his company as a workplace where high wages were paid.

Henry Ford might have enjoyed this acclaim, but he nevertheless made it very clear that the $5 wage was not an act of philanthropy. There was:

> … no charity in any way involved […] We wanted to pay these wages, so that the business would be on a lasting foundation. We were building for the future. A low wage business is always insecure […] The payment of five dollars a day for an eight hour day was one of the finest cost cutting moves we ever made.[27]

As a side note, an inspiration for Henry Ford in this matter was Percival Perry, who was then manager of Ford's British operations in Manchester, but who would later come to play an important role

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in the history of the Danish Ford company too. In Manchester, Perry had gained a substantial productivity benefit from raising wages.[28]

It has been suggested that Henry Ford was an early proponent of what came later to be known as efficiency wages. According to the theory of efficiency wages, employers might benefit from paying wages higher than those determined purely by supply and demand of labour. The reason would be that a higher wage will diminish shirking and labour turnover and strengthen the workers' commitment and loyalty to the company, thereby leading to a higher productivity. If the result is an increase in revenue above the increased cost of higher wages, paying these higher wages is effective in relation to profitability.

Leaving the details of this discussion aside, the important point to make is that paying high wages was a rational choice in the eyes of Henry Ford. Not only that: the wage level could be discussed and determined, based on objective parameters, such as the cost of wages versus the costs of absenteeism and labour turnover. In this sense, Henry Ford was firmly seated within the broad spectrum of believers in scientific management.[29] He believed that wages were to be determined by management by rational calculation, not arbitrarily through negotiations with unions. He also believed that any sensible worker would accept such scientifically established wage levels.

In return for the high wages paid, Henry Ford expected loyalty to his company and to his ideas about industrial relations. These ideas were based on his conviction that the relationship between the employer and the worker was a purely personal one, and that both parties had a common interest in high productivity. Labour unions, according to this view, were a hindrance to achieving the highest productivity possible, and thereby working against this common interest.[30]

Henry Ford himself described his ideal of labour management as a "friendly autocracy".[31] His attitude towards workers' self-representation was aptly characterised by his own words:

> We expect the men to do what they are told. The organization is so highly specialized and one part is so dependent upon another that we could not for a moment consider allowing

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> men to have their own way. Without the most rigid discipline we would have the utmost confusion. [...] The men are there to get the greatest possible amount of work done and to receive the highest possible pay.[32]

In Henry Ford's own narrative, the production process at Highland Park and River Rouge is presented as a gradual but constant process towards technological and organisational perfection. But this picture of one great machine, in which every part ran smoothly and in total sync, is not necessarily true.

Deprived of organisation or other means of representation, workers at the assembly line devised their own ways of individual or collective regulation. One method was to "go into the hole", meaning gradually, almost imperceptibly, exceeding the time assigned for their task, thereby being forced to move slowly up the line, ultimately forcing collapse in production—and thereby a break. "The biggest trouble was the men," said one of Ford's foremen. "Everybody would get in everybody's way and they would all be in a bunch. Then they would have to stop the line whether they wanted to or not."[33]

It was the job of the foremen to enforce work discipline and factory rules, such as a complete ban on singing, whistling, and even talking during work hours. Interestingly, the ratio of foremen to workers grew steadily as the production process evolved; from one foreman per 60 workers in 1909, to one per 30 workers in 1913–1914, to one per 15 workers after the assembly line was fully introduced: a testament to the fact that technology alone was not enough to keep up work speed and discipline.[34]

A social vision

From being in the interest of the enterprise, Henry Ford would go on to argue that high wages were in the interest not only of industry as such, but of society in general. He was well aware that to secure a market for the mass-producing industry, its consumer base had to be widened. From a social point of view:

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> …the owner, the employees and the buying public are all one and the same, and unless an industry can so manage itself as to keep wages high and prices low, it destroys itself, for otherwise it limits the number of its customers.[35]

Henry Ford presented a vision, according to which a constant striving to lower the cost of production would make it possible for industry to mass-produce consumer goods for sale at low prices, and at the same time pay high wages. The high wages would ensure a mass-market for the goods produced. The result would be a positive spiral of growing production, cheaper prices, more consumption and so forth:

> Poverty can be done away with only by plenty, and we have now gone far enough along in the science of production to be able to see, as a natural development, the day when production and distribution will be so scientific that all may have according to ability and industry.[36]

Henry Ford's social vision falls under the broad term of productivism.[37] To him, there were no other agents for progress than industry. He made no secret of his distrust in anything or anyone not immediately associated with the production of material goods, including politicians and the political system. In fact, government in his view was "essentially negative": the best government could do was to facilitate industry by removing any obstacles to its progress and, apart from that, stay out of the way as much as possible. The only human agents capable of creating progress are those in command of industrial enterprise, who are moved by "intelligent individual leadership".[38]

Ford explicitly offered his own vision as an alternative to socialism. To him, society was divided not by class, but between productive and unproductive people. Employers and workers both belonged to the productive people, and therefore they had mutual interests. Politicians, academics, and even bankers and the whole financial sector were unproductive. This might also have been a cause for his fierce and well-known anti-Semitism, drawing upon common stereotypes of associating Jews with those groups he despised as not being productive.[39]

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Figure 1 Advertisement illustrating Henry Ford's social vision of an affluent consumer society, based on industrial mass production. Published in 1925 as part of a series in *The Saturday Evening Post,* one of the most widely read magazines by the American middle class. Painting by John Jay Baumgarten / BFRC, The Henry Ford

Henry Ford's ideas about the need for paying high wages did not, however, resonate well with his fellow American employers in the early 1920s. Without any resourceful agents with the power to push for higher wages across industries, individual employers had no incentive to raise wages. Labour unions would of course have been such an agent, but union organisation was very low in American industry in the 1920s, and employers were generally successful in keeping so-called "open shops", without any union agreements. And Henry Ford was among the employers who fought hardest against any union

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presence. The result was that the average real wages of industrial workers increased only marginally—and much less than the increase in productivity—meaning that Ford's vision of a generalised consumer society remained just a vision.[40]

Volume versus flexibility

Initially, the sales curve for the Model T had pointed only upwards, but from around 1923 it started to drop. Ford's difficulties were products of structural changes in the car market. It was the middle class who had bought the Model T in large quantities, but this market was now starting to become saturated. The industrial working class on the other hand, whom Henry Ford had hoped would become his customers, were not yet able to become mass consumers on the car market, even at its low end. At the other end of the market, part of the middle class had become more affluent and would start to demand more from a car than just four wheels at a low price.[41]

But Ford Motor Company had nothing to offer to this diversifying market. It kept churning out Model Ts, despite the fact that the once-revolutionary car appeared increasingly outdated.[42] In 1926 a "new" Model T was introduced, with a redesigned all-steel body, a choice of colour—between black, dark red and dark blue—and several smaller enhancements. But these changes were too late and too small to convince the public, and sales continued to drop.[43]

At the same time, General Motors (GM) was developing a productive model based on a combination of volume and diversity. It would offer separate brands and models for each market segment, distinguishable by differences in body, trimming and other visible parts. But different cars would at the same time share less visible parts, including engines and drivetrains, which could therefore be manufactured through centralised, high volume production.

For the lower end of the market, and in direct competition with the Ford Model T, GM was offering the Chevrolet. It was assembled on a line, just like the Model T. But for producing the parts, GM would use less single-purpose machinery, and more standard equipment. This approach offered a greater degree of flexibility in production, which allowed GM to introduce something that would become commonplace in the automobile industry: the regular product upgrade.[44]

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The combination of diversity and volume allowed General Motors to expand its sales at the expense of Ford Motor Company, whose share of the market dropped from 55 percent in 1921 to only 30 percent in 1926, despite price reductions.[45]

Among the reasons Ford came to lag behind General Motors were the stubbornness and idiosyncrasies of Henry Ford himself. Several top managers either were sacked or chose to leave of their own accord. One of them was William S. Knudsen, who—as we shall see later—had been instrumental in setting up Ford in Denmark. In 1921 he felt so alienated by Henry Ford that he left the company to work for General Motors instead. At GM, Knudsen was a driving force behind the successful development of more flexible methods of mass production, and ended his career as president of the company.[46]

There was, however, also a more rational reason for clinging to the Model T, which had to do with the Fordist production model in itself: the highly specialised production apparatus, with its extensive use of purpose-built machines, made the changeover from one model to another very difficult and time-consuming. So, when Henry Ford finally gave in to the development of a new model, an erratic process began, in which a new car was developed and the production facilities were completely retooled, almost in parallel.[47] In May 1927, the last Model T rolled off the assembly line, but it was not before 1 December 1927 that a new Model A could be presented to the public. It took several more months before full production of the new model could be reached.

Ford Motor Company had learned a hard lesson. The Ford A was not to live nearly as long as the Model T. As soon as 1931, planning started for another new model, which would eventually take its name from its most distinguishing feature: a V8 engine. This time the changeover was not without difficulties either, but it took much less time and effort than the change for Model A.[48] Ford had now entered the path to what Henry Ford himself would call "flexible mass production",[49] and beginning with the Model A but further elaborated with the V8, regular upgrades now became the norm for Ford cars, just like those of GM.

Just as General Motors had originally copied elements of the Fordist model, not only Ford but all major car manufacturers copied back

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elements of GM's model of combining volume and diversity during the 1930s. Indeed, it was this model that spread from America to Western Europe with increasing strength in the aftermath of World War II. It has therefore been suggested that we should talk about a Sloanist rather than a Fordist production model, in reference to Alfred P. Sloan, president and CEO of GM from 1923.[50]

However, I would rather suggest that we see this process as an example of the dynamic character of Fordism, and part of the transformations it underwent from its birth in Detroit at the beginning of the 20th century, until it achieved its hegemonic character in western economies about half a century later.

The changing role of labour

During the 1920s, Ford's reputation for paying high wages became increasingly challenged by reality. The real value of the $5 daily wage introduced in 1914 had been cut almost in half by inflation as early as 1918. In 1919 the basic wage was raised from $5 to $6, but by the mid-1920s, wages at Ford in Detroit were no longer significantly higher than in other auto companies; in fact there were some areas where they were lower.[51]

Industrial relations at Ford Motor Company had always been based on a combination of the carrot and the stick. But during the 1920s, the carrot was shrinking, and the stick became longer. Henry Ford continued to maintain his ideological conviction of a common interest between employers and employees both vocally and in print. But his self-proclaimed "friendly autocracy" would turn more and more unfriendly. Under the leadership of the notorious Harry Bennet, the so-called Service Department would expand into a vast organisation for controlling and disciplining the workers, with methods ranging from a sophisticated system of surveillance to simple violence. Agents of the department patrolled the factory, both openly and undercover. Their job was not only to come down hard on any breach of discipline by the workers, but also to expose any foreman who was not severe enough in "pushing" the workers.[52]

Another important duty of the Service Department was of course to repress any attempt to "talk union" at the Ford Motor Company,

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even by means of physical violence. This was successful for a period, but soon pressure would amount on Ford from both below and above.

During the 1930s, workers in the American auto industry began to question the authority of their employers and demand the right to organize. The creation of the Congress for Industrial Organization (CIO) and its breakaway from the American Federation of Labor (AFL) to form a new federation for unions in mass production industries marked an upswing in labour militancy. In 1935 the United Auto Workers (UAW) had been formed inside the AFL, but it soon became a leading member of the CIO.

At the same time, the political climate in the USA had changed drastically with Roosevelt's election and the New Deal. The National Industrial Recovery Act of 1933 specifically gave workers the right to join a union of their own choice and bargain collectively. This right was pursued by the UAW with great vigour and growing support, and in 1937 the union had a breakthrough, when both General Motors and Chrysler accepted collective bargaining after several sit-down strikes.[53]

Ford Motor Company, however, continued its resistance against trade unions. Despite several investigations by the National Labor Relations Board, all concluding that Ford's practices were in violation of workers' rights, the repression continued until 1941, when Ford finally gave in and accepted collective bargaining with the UAW. For the first time ever, workers at Ford now had the right to collective representation.

The Second World War was a time of profound change in industrial relations in the USA. Generally, concessions were given to those workers still left in the factories, to keep up production. On the other hand, even the more militant unions, such as the UAW, committed themselves to a national class-compromise, to support the war effort. A result of this extraordinary situation was a new political hegemony, based on forward-thinking industrialists, liberal politicians, and moderate union leaders.[54]

It was only under pressure that Ford Motor Company had accepted collective bargaining in 1941. But in 1945 a new leadership took over, headed by Henry Ford II, grandson of Henry Ford.[55] This new leader-

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ship was committed to collective bargaining to a much higher degree, and the following period has been described as a "social compact", based on cooperation between management and unions for mutual benefit.[56] Harry Bennet was ousted from the company, and with him the old practice of foremen constantly "driving" or "pushing" by means of threats. But that did not mean that Ford gave up the goal of high productivity. Instead, this had to be achieved by rational and "scientific" means, such as time studies.[57]

The UAW gained influence through collective agreements, while the same agreements were seen by management as a way to curb wildcat strikes and involve the unions in maintaining high productivity. The last was partly obtained by what were known as "speedups" among the autoworkers: the process of increasing the speed of the assembly line. The UAW was not against rationalisation as such. But they generally feared that the company would push too hard in their efforts, thereby putting too much strain on the workers. A wave of strikes against speedups swept through Ford plants in Detroit and elsewhere in the USA during 1949. The outcome of these strikes was a higher degree of union influence on assembly line speed. Nevertheless, spontaneous, unauthorised strikes against work pressure kept occurring throughout the 1950s.[58]

In this way, the "social compact" did not in any way imply that antagonism between workers and management disappeared altogether. But the day-to-day conflicts became subsumed under a consensus that both parties had a mutual interest in rising productivity. This was increasingly the case as the economic boom from the late 1950s onwards led to a general rise in living standards and a rapid increase in the demand for automobiles. It was in this period that the workers at Ford Motor Company, together with other autoworkers, became part of the most affluent and socially secure stratum of the American working class.

In summary, then, Fordism was in constant development from the beginning of the 20th century and well into the post-war period. This should be kept in mind, as we now turn away from empirical history towards Fordism as a concept.

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In 1919, the Ford Motor Company – the world's largest automobile manufacturer – decided to make a small Nordic country its bridgehead to continental Europe. Denmark was a good choice geographically and because of the country's favourable customs policy. During the 1920s, Ford's iconic Model T was assembled in Copenhagen, with large quantities exported from there to most of north-eastern Europe. The innovative manufacturing technology employed in Copenhagen was the same as that used in Ford's American assembly plants, and the Copenhagen plant was actually designed by Albert Kahn – the architect behind Ford's famous Highland Park factory in Detroit, Michigan.

The Danish Ford Motor Company successfully continued production throughout the recession of the 1930s, the German occupation of Denmark in 1940–1945 and the Cold War and economic boom of the 1950s. The Copenhagen factory closed in 1966, obliged to give way to Ford's larger operations elsewhere in Europe.

Henry Ford's pioneering principles of mass production went beyond mere technology. The large-scale serial manufacturing of uniform products was also a way of fulfilling his vision of an affluent consumer society. But as Fordism was relocated across the Atlantic, the rigorous discipline and fast-paced work routines applied in Detroit were challenged by local traditions, shifting market conditions and, most notably, a labour movement that was far more powerful than its American counterpart.

Between Denmark and Detroit offers a detailed history of the Danish Ford Motor Company, but the book also has a wider scope, elucidating the concept of Fordism and how it was transformed by its move across the Atlantic.

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