Chapter X.5
The Deskilling and Upskilling Debate

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1 Introduction

There are two opposite perspectives on the future of capitalist societies: a positive one and a negative one. Both perspectives of the future are associated with a corresponding—but opposing—positive or negative picture of the past concerning skills. Whereas the proponents of a deskilled and degraded future of work start with the image of skilled handicraft work as typical for the early stages of capitalism, the advocates of the upskilling thesis see uneducated and unskilled rural workers as the starting point of skill development under the capitalist mode of production. Both perspectives are legitimate and can refer to supportive evidence. No matter what position one holds, it cannot be denied, however, that literacy and the general educational level of the population of industrialized countries have risen and that growing proportions of the population (including women) have become integrated into employment. This means that, by and large, the educational and skill levels that can be made use of within the labour process have risen; this does not mean, however, that the skills offered are adequately exploited.

2 A Period of Expansion

The period that immediately followed the Second World War in most Western industrialized countries displayed positive developments generated by economic growth, growing mass consumption, increasing employment and positive future expectations. At that time, it was widely believed that pluralistic industrialism had replaced the old conflicting forms of capitalism. The overall positive view of the future was reinforced by a strong belief in the positive consequences of technical change. In the field of work, the old trades began in fact to disintegrate, but on the other side modern technologies emerged that led to a variety of new jobs that generally required rising skill levels and responsibility on the part of workers. It was expected that training for the newly created jobs would in general *upskill* and *upgrade* most of the workers. With the coming of post-industrial society (Daniel Bell) and the requirement that most jobs would require third-level education, the number of low-skilled production jobs was expected to diminish. Unskilled, repetitive work and restrictive

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working conditions would eventually vanish and skilled work would become typical of the new emerging service society.

The upskilling process was expected to be additionally accelerated by a strong increase of technological and managerial personnel. This would lead to the transformation of the old 'antagonistic' class relations within production to more co-operative production relations. The process of social change would become supported by a concurrent advancement of academically educated and well-trained experts into relevant positions within firms and an increasing professionalization of management. Together they would soften conflicts. Technological and social progress would irresistibly lead to an increasing demand for a skilled workforce and a chronic shortage of skilled labour (see, for example, Kerr et al., 1960).[1]

Contrary to these expectations, the 1950s and 1960s were evidently a period in which mass production techniques spread within firms and, additionally, were developed to perfection. This process was particularly relevant in Europe where Fordist mass production generally did not gain ground until the mid-1950s (Womack et al., 1990). Also contrary to the upskilling expectations, a strict division of labour and repetitive, unskilled work were still expanding for some time yet in industrialized countries of the West. In some cases the relative shortage of domestic skilled labour led, as in the former West Germany, to the recruitment of a lot of immigrants and unskilled foreign workers (*Gastarbeiter*) with low-level skills and poor linguistic abilities. The fast integration of these unskilled workers into the capitalist labour process in the 1960s and early 1970s obviously provoked a further increase in the internal division of labour and deskilling. The main reason for deskilling in this case was not an explicit management strategy but the shortage of domestic skilled labour. As the real development of skills largely contradicted the forecasts of the upskilling thesis, the positive prophecies of the upskilling protagonists were eventually called into question.

The overall optimistic approach concerning skill development and antagonistic class relations was relieved in the 1970s when a deskilling perspective quite quickly displaced the upskilling approach. This change in perspective is strongly connected with the publication of Harry Braverman's book *Labour and monopoly capital* in 1974. In this book Braverman used the concept of deskilling to analyse and describe the *degradation of work* under capitalist relations of production. Braverman started his analysis by establishing that the reality of work in the 1960s and early 1970s had contradicted the positive expectations of the upskilling prognosis and indicated that there were many signs documenting that workers were unsatisfied with their working conditions and their work—hence, absenteeism, sabotage, protests and strikes.

3 Deskilling

Deskilling is conceived by Braverman as a process of reducing the skill level of jobs through a detailed division of labour and the application of new technology in order to enhance *managerial control* over the work process. Whereas the social

division of labour had created skilled occupations, the subsequent internal division of work within the labour process destroyed just such occupations. Under the capitalist system of production, deskilling immediately aims at weakening the position of workers by:

1. Eliminating the need for skilled labour by simplifying individual tasks to make the workers interchangeable with other workers or replaceable by machines;
2. Making their work easier; and
3. Downgrading a job or occupation from a skilled to a semi-skilled or unskilled position in order to decrease the total wage cost associated with the employment of skilled labour.

The central instruments of deskilling for Braverman were developed by Frederick W. Taylor (1856–1915), who stands for a change in early management strategies. He developed methods such as time-and-motion studies in order to observe workers' working behaviour and find out the best way of organizing their work. His concept of *scientific management* was characterized by three distinct principles:

- the dissociation of the labour process from the skills of the workers;
- the separation of conception from execution; and
- the concentration of knowledge in the hands of management.

The central idea of Taylorism, according to Braverman, is to extract the explicit and implicit knowledge of the workers and to use it in order to simplify work performance by increasing the division of labour. This strategy allows the amount of skill and training time to be reduced and facilitates the use of a variety of specific control mechanisms (incentive payment, monitoring systems, standard operating procedures, etc.). The basis of Taylorism is investigation and re-design of an already existing labour process which is modified and redesigned by separating manual from mental work and by concentrating all relevant knowledge and know-how in the planning and engineering departments. This has far-reaching consequences for the career perspectives of manual workers: whereas '[in] the early days of industrialization skill development was an important source of social integration and the most-skilled workers were often promoted to management ranks' (Zuboff, 1988, p. 50), the transformation of the knowledge base through scientific management led to the abandonment of the upward mobility of skilled manual workers and imprisoned them in the lower ranks of the firm.

Braverman's conception of deskilling and degradation of work proves to be at least partly right for the early phases of capitalism and, moreover, provides evidence even for trends in the organization of industrial work until the 1970s or early 1980s. In the early phases of capitalism in the nineteenth and early twentieth centuries management strategies obviously proved to be inadequate to displace the skilled craft worker as the primary manager of production. It was the specialized knowledge that the craftsmen possessed that enabled them to preserve some discretion and control over their choice of methods, their efforts and their time. Skilled craft workers were able to—and did—resist attempts to alter the speed and nature of production through slowdowns, strikes, sabotage and the like quite successfully. In

this respect, deskilling was a strategy of early modern management in the first place to overcome the resistance of workers

4 Objections to Braverman

There are two widespread objections against Braverman's view of the labour process. The first one is that low-skilled work in many cases is not the immediate result of the further division of already existing more comprehensive tasks. In many cases, work processes and jobs from the outset have been constructed on the basis of scientific or formal knowledge without reference to previous forms of work organization. With the growing complexity and size of factories, expanding markets that exerted strong demand for an increase in the volume of production and a rising engineering profession, there emerged a new and pressing concern to systematize the administration, control, co-ordination and planning of factory work. With these changes the basis of the organization of production processes and labour could no longer be based on handicraft production because its productivity as a matter of principle was limited.

The second objection is that Braverman simply over-romanticized traditional craft work because he needed an erstwhile positive point of reference. Even today, idealized craftsmanship is still used as a preliminary baseline in a comparative way. Craft work has value primarily as the semiotic opposite of mass production and is often used as a counter image to unskilled labour. This idealized critique of contemporary work in reality, however, is inadequate because the modern labour process is constructed not on handicrafts but on a scientific basis according to an engineering logic which has never been grounded in direct work experience.[2]

We can sum up that Harry Braverman's neo-Marxist view of deskilling is rather outdated simply because the proportion of manual workers in general is shrinking. At the same time, a great number of simple clerical jobs have been made redundant by computers and information technology. Management strategies have also changed in many industries. Modern management is no longer primarily occupied with destroying the skills of workers in order to control their work behaviour. It is rather interested in exploiting the productive capabilities that result from high qualifications and knowledge by offering participation and co-operation in order to strengthen competitiveness within the global economy.

5 McDonaldization

There is, however, something like a modern form of deskilling which is called the McDonaldization of work (and society as a whole). McDonaldization is a term used by George Ritzer to describe a mode of work organization which has been developed in the fast-food industry by McDonalds. In Ritzert's view, Taylorism and the

rationalization of production work are no longer the reference points for the evaluation of trends in skill development. In McDonaldized work settings the job of the average male or female worker is unskilled from the beginning; skilled alternative forms of work organization never existed. McDonaldization is seen by Ritzer primarily as the continuation of Max Weber's idea of bureaucracy and to a much lesser degree that of Taylorism. 'Most workplaces are bureaucracies that can be seen as large-scale non-human technologies. Their innumerable rules, regulations, guidelines, positions, lines of command and hierarchies dictate what people do within the system and how they do it' (Ritzer, 2004, p. 112). The goal of this bureaucratic arrangement of jobs is simply to employ human beings who need minimal skills and training with minimal intelligence and ability.

In bureaucratically structured work organizations 'employees are controlled by the division of labour, which allocates to each office a limited number of well-defined tasks. Incumbents must do those tasks, and no others, in the manner prescribed by the organization' (Ritzer, 2004, p. 27). In such a context human judgement is replaced by rules, regulations and structures. Workers are assigned to the predesigned work process in order to work efficiently. They are expected to do a lot of work very quickly, for low pay. The McDonaldization of an organization enables managers to define and enforce rigid performance standards and allows work to be intensified. Workers are trained to do only a limited number of things in precisely the way they are told to do them and they are forced to behave in predictable ways. The 'emphasis on quantification often leads to large amounts of poor-quality work' (Ritzer, 2004, p. 27). 'The result is a high level of resentment, job dissatisfaction, alienation, absenteeism and turnover' (p. 148).

Although the McDonaldization is primarily an organizational concept for the organization of low-skilled work in fast-food chains and service industries where comparable standardized products and services are provided, it is not limited to these areas. As a concept for streamlining and simplifying products, McDonaldization can be used as a means for the deskilling of high-quality service work in professional fields like education, science or medicine, if only the sheer quantity of such work is measured in the same way as, for instance, the number of citations in scientific work or counting the number of patients or the number of visits in medical work. In such cases, McDonaldization is like Taylorization primarily used as a means of deskilling and control.

The main counter-argument to Braverman's deskilling thesis and to the assumption of a complete McDonaldization of society and work is that scientific management as well as McDonaldization are limited approaches and that both concepts cannot be simply applied to all kinds of work. This is true especially for high-level service work that is carried out mostly by formally well-educated experts whose work processes do not lead to predictable definitive results that can be reached by following highly standardized routine tracks. The object of the high-quality work of experts or professionals is problem-solving and innovation, the discovery of new ways to cope with (old) problems and other creative activities.

6 Responsible Autonomy

To demonstrate the limits of Braverman's concept of deskilling and the degradation of (manual) work and of McDonaldization, it is helpful to revert to one of the early contributions to the labour process debate by Andrew Friedman (1977).

In his book *Industry and labour*, Friedman argues that two major types of strategies for exercising authority over labour power co-exist. The first management strategy is called *responsible autonomy;* the second one, which looks very much like Taylorism, is called *direct control*. Responsible autonomy means giving workers 'leeway' and encouraging 'them to adapt to changing situations in a manner beneficial to the firm. To do so, top managers give workers status, authority and responsibility. Top managers try to win their loyalty, and co-opt their organization to the firm's ideals (that is, the competitive struggle) ideologically' (Friedman, 1977, p. 78). Direct control, on the contrary, is based on coercive threats, close supervision and limiting the scope of labour power by minimizing individual worker responsibility. Although he is very reluctant in his argument, Friedman expects a rise in the relative importance of responsible autonomy, because in the long run a huge rise in white-collar personnel, professionals and engineers, accountants, human resource specialists, middle managers and supervisors can be expected. (These groups were explicitly outside the scope of Braverman's view because they did not belong to the traditional working class.) As these occupational groups contribute to the labour process with their specialized knowledge, there is a growing need for co-operative production relations and responsible autonomy strategies for work organization.

Friedman's distinction between responsible autonomy and direct control is based on the assumption that a difference exists in the *nature of work* between that which is based upon formal knowledge and theoretical expertise and that which is based upon practical knowledge and empirical know-how. Whereas the latter can quite easily be fragmented, deskilled and substituted by technology, the former on the contrary is becoming differentiated and specialized, if it is divided by a division of labour into smaller parts. The specialization of knowledge work does not lead to fragmentation and deskilling, because the knowledge basis of that work remains intact. Shrinking task ranges are usually compensated by an increase of discretion on the basis of more elaborated and refined specialized knowledge and know-how.

The theoretical knowledge of the knowledge worker is not arbitrarily available in the labour market and cannot be easily substituted by superior knowledge, as in the case of manual production work. Therefore, the deskilling of handicraft work cannot simply be duplicated at the level of knowledge work. There is no point in deskilling knowledge work, because this kind of knowledge is generally needed for finding new ways of problem-solving, developing new products and (manufacturing) processes. Such knowledge is the precondition for flexibility and the continuous adaptation to changing market conditions.

The argument of Andrew Friedman is supported more recently by Eliot Freidson (2001), who in his 'sociology of professions' develops the concept of professionalism as a third logic of work organization which is different from the control of work through markets or bureaucracy. In sectors of employment in which work is

predominately based on theoretical knowledge professions, the respective occupations are able to control specific *areas of uncertainty*. As the theoretical knowledge and know-how of knowledge workers cannot be extracted from this specific kind of work as easily as the practical knowledge of craftsmen, professionals and knowledge workers have an opportunity to organize their work independently on the basis of their theoretical knowledge and their specific skills.

In Freidson's third logic, the contested subject is, as in Braverman's case, again the control of work and working conditions. This time the skilled knowledge workers dispose of knowledge of a different kind, which cannot be siphoned off as easily as the practical knowledge of the manual handicraft workers. In sectors of employment where the organization of work is based on the formal knowledge of highly skilled professional workers, these groups are in general able to defend their jurisdictional claims (Abbott) against management control and externally initiated re-designs.

7 New Technologies

Meanwhile, one can find another line of argument against the assumption of the unilinear deskilling and degradation of work. The argument of this approach is that working conditions have changed fundamentally since the 1980s because of the introduction of computers into the labour processes of both blue-collar and white-collar workers. In her book *In the age of the smart machine*, Shoshana Zuboff (1988) describes the changes that were happening in the 1980s with the introduction of information technologies and the coherent reconfiguration of work processes as *abstraction of work*. With the introduction of computers into production and office work, physical and action-centred skills become displaced by intellective skills. 'Immediate physical responses must be replaced by an abstract thought process in which options are considered, and choices are made and then translated into the terms of the information system' (Zuboff, 1988, p. 71). Whereas in traditional work contexts action was the source of top-down processing, theoretical understanding becomes a principal source of top-down perception in the computerized environment. In the age of smart machines, work increasingly consists of thinking about, making sense of and responding to fast-changing situations.

By this process the nature of relevant skills has changed dramatically. The intellective skill base becomes 'the organization's most precious resource' (Zuboff, 1988, p. 396). Productivity and the innovative ability of firms and whole economies more and more depend on the quality of understanding and the ability to decide when and how to use a theoretical model in order to make sense and to explain situations. If in such a context technology is used in a traditional way to intensify work, skill levels can be reduced and the urge toward more participatory and decentralized forms of management can be dampened.

Such a restricted approach, however, gives away chances for productivity and quality improvement: it 'cannot exploit the unique power of an informating

technology' (Zuboff, 1988, p. 243). Therefore, Zuboff recommends a different approach to technology deployment. She pleads for a use of technology that emphasizes the computerizing capacity of new technologies in order to 'increase the intellectual content of work at virtually every organizational level, as the ability to decipher explicit information and make decisions informed by that understanding becomes broadly distributed among organizational members' (Zuboff, 1988, p. 243). In this visionary view, the computerizing power of the new information technology creates a strong pressure for a profound *reskilling* of the labour force.

If we follow Zuboff's diagnosis concerning the consequences of the introduction of computers into work, we can establish that during the past two decades a substantial proportion of jobs have become more technical and varied. As a result of the introduction of computers, many workers today perform ambitious tasks and solve problems which formerly were done by highly qualified specialists and experts. The introduction of computers allows many ordinary workers today to take on tasks like word-processing, work design or financial analysis that were once performed by experts and specialists. This is also made possible by a higher general educational level and higher skill levels among many workers. Because of this trend, employees today on average can pick up tasks with far less training. This becomes a relevant general ability today, if working conditions and skill demands change over ever shorter periods of time without permitting enough time for extensive training for reskilling.

International comparisons of production concepts and strategies of firms have shown that the skills of the nationally available labour force play an important role in production strategies and organizational concepts that can be chosen by firms within existing national contexts. It has been demonstrated that the supply of skill plays an important role in the selection of production and organization concepts.

8 Varieties of Capitalism

Whereas in former times it was assumed that capitalism in all different countries would follow the same model and would eventually select the one best way of work organization, empirical studies have shown that the social and internal division of labour is reconstructed on an international level. Different nations pursue different strategies of skill utilization and skill development in order to strengthen their own position in the international economic contest. In such a global competitive context a general deskilling of the workforce would be—as evidence shows—a disastrous strategy. In advanced economies rather the *adequate use o*f the existing *skills* of the labour force and the development of these skills are the prerequisite for the selection of adequate production strategies by employers.

Such a comparative view is chosen by the 'varieties of capitalism' approach (Hall & Soskice, 2001). According to this approach, each form of national capitalism is characterized by a very specific mix of institutional attributes. And one of the

institutions that is central for the specific outlook of national capitalism is the sphere of vocational training and education.

In liberal market economies, like the United States and the United Kingdom, firms as well as employees are both orientated toward general skills. This is connected with a short time perspective of employment. Here, the education and training systems are complementary to highly fluid labour markets. The overall emphasis is laid on formal education that focuses on general skills and certification. In liberal market economies, the acquisition of more specialized company-specific skills is too risky and will not pay.

In co-ordinated market economies, like for example Germany, production strategies that rely on a highly skilled labour force that is given substantial work autonomy are employed. The main objective is to generate continuous improvement in product lines and production processes; the emphasis is on diversified quality production. The German strategy is characterized by a specific combination of high-quality products, flexible automation, intelligent work organization and consensual regulation. The adaptability of the German model is ensured at the level of human resources by high qualifications that are bound to specialized occupational profiles and stable vertical and horizontal demarcation between occupationally defined activities. And there is a strong orientation of work organization to the occupational model. This is complemented by thinking in positions, jurisdiction and demarcation between occupational claims.[3]

It would seem worthwhile to take a more detailed look at the German system of skill development in recent decades, because the German case is very suitable for demonstrating changes in the valuation, use and treatment of skill (Littek & Heisig, 1991). On several occasions it has been demonstrated that in Germany the system of apprenticeship and occupational education has at least prevented deskilling to a certain extent. In order to make use of the skills of the highly qualified blue- and white-collar workers (*Facharbeiter/Sachbearbeiter*), management had to consider and at least meet some of their job-related aspirations and expectations. In their book entitled *The end of the division of labour*, Horst Kern and Michael Schumann (1984) came to the conclusion that the substitution of human labour by new technologies and the economization of the remaining work processes are entwined. In the new production concepts of the early 1980s, they discovered that the Taylorist combination of deskilling and degrading workers was suspended and substituted by a more holistic approach for the exploitation of labour power. Efficiency from now on was increased with the support of workers and not to their disadvantage. To reach this stage, a bargain was made which aimed at making the workers an active element of the restructuring process. Such participative management acts on the assumption of *shared interest*.

The system of apprenticeship and vocational training in Germany has ensured that employees were equipped with a high degree of technical and social skills. For a long time this justified and guaranteed a certain level of discretion and work autonomy on the part of the workers. Employers who were interested in qualified, loyal and motivated personnel provided appropriate working conditions for skilled workers in order to recruit and bind skilled employees to the company. The German

system of apprenticeship and vocational training thus proved to be at least partly resistant to *dequalification* (the German term for deskilling).

It is one of the fundamental findings of Kern and Schumann (1984) that the new production concepts abandon the Taylorist concept of separation of conception and execution. Managers have begun with a re-integration of formerly widely separated simple manual and more ambitious conceptual tasks. Kern and Schumann in this context speak of a *re-professionalization* of the production worker as a new norm of job redesign. The task integration they discovered aims at reducing the overall number of workers by using flexible, multi-skilled workers. This also means that the least-skilled workers are sorted out and find themselves dismissed. The reorganization process thus finally leads to an automation of simple functions and tasks with the effect that poorly educated and low-skilled workers do not find jobs anymore.

This trend in rationalization strategies seems to be a consequence of management's target to reduce lower skilled personnel by upskilling the already better skilled workers in order to make them more flexible at work. Thus, the *upskilling* of the most efficient workers leads to the consequence that the lower-skilled workers are replaced. In this way, the process of upskilling workers results in an increase in the unemployment of unskilled workers.

In Kern and Schumann's words, the unskilled workers are the *rationalization losers* (*Rationalisierungsverlierer*). They are *deskilled by unemployment* or at least are permanently excluded from ambitious tasks, high income and status in attractive companies. They have to accept marginal 'McJobs' in McDonaldized work settings. By this reorientation of management strategies, *deskilling* within an existing labour process is substituted by exclusion of low-skilled workers from seminal developmental jobs. As a consequence we can find increasing *labour market segmentation* between members of the well-educated and highly skilled members of professional groups and knowledge occupations, and a majority of comparatively low skilled employees with ordinary everyday qualifications.

Inasmuch as the average educational and skill level is rising, the average level of skill is devaluated. This explains the fact that in Germany young persons with low levels of formal education do not find training places in the system of apprenticeship training, let alone entry into the labour market for skilled jobs. The skill requirements for an average blue-collar or white-collar job obviously are too high for youngsters without the minimum level of general education. The level of minimal skill requirement is permanently rising if the supply of skilled persons is rising.

9 Flexibility and Adaptability

Since the 1980s management seems to be more and more convinced that greater efficiency can only be achieved if the division of labour is reduced. There is a general trend in all advanced capitalist societies from Fordist mass production, to diversified mass production and moreover to diversified high-quality production (if the preconditions are met). Until then, rationalization of work in a pure Taylorist mode

is outdated, because market conditions and production requirements have changed fundamentally. This has led to new ways of using labour power.

The remodelling of management strategies was enabled or at least facilitated by changes in the beliefs and behaviour of production workers. Workers no longer called into question management's prerogatives and demands of performance. Therefore, trust could be offered by management to production workers, inasmuch as it had formerly only been offered to white-collar employees. As workers largely accepted the conditions under which they were working, power and authority no longer had to be enforced by bribery or coercion. Therefore production concepts could conceptualize working conditions that allowed the competence, autonomy and responsibility of the workers to be exploited. These changes at the same time increased the motivation of the workers who enjoyed greater recognition and acceptance.

This skill-based organization of work, which seems to be typical, especially of co-ordinated market economies, has come under pressure only recently as central *institutional preconditions* of the system of employment security and unemployment security rules are going to be suspended or have at least already been revised.

As employment security is decreasing the employing firm is no longer the reference point for skill development and career (even in co-ordinated market economies). In order to secure their employability, workers have to develop more and more *transferable skills*. As a consequence, one can find a growing interest in ambitious work and challenging working conditions on the part of the workers: performing skilled work implies the possibility of developing new qualifications while working. To do ambitious work becomes a precondition for selling one's own labour power. Thus, the acceptance of unskilled work and deskilling becomes limited because of a decrease in job security and the loss of long-time employment perspectives within a stable bureaucratic company environment.

The present workplace and the immediate development of skill demands in the current workplace are no longer the most important point of reference for the evaluation of skill development by incumbents. They can no longer be sure that the employment contract with the current employer will last for a very long time. The formerly accepted compensation for unsatisfactory unskilled work by relatively high wages and job security is losing importance as a foundation of acceptance. Today, there is no commitment on the part of employers and employees and there are no long-term considerations.

As a consequence, the concept of skill has changed meanwhile. With the spread of new production structures, demands for skilled labour are created while at the same time the stability of any particular job is undermined. Under such circumstances workers must acquire specific skills. The focus of skills are no longer the immediate skill demands at the present work place, but flexibility and adaptability to changing working conditions and job demands, including the ability to co-operate in particular work settings in order to be employable. Under such conditions, *upskilling means* to improve workers' *employability*. Job security and long-time or even lifelong employment with one company are disappearing. Modern 'skills' are those necessary for job mobility and for coping with changing production processes.

Different from craft labour markets based on traditional connections to particular materials and processes, and the internal labour market of mass-production industries, workers today have to operate versatile capital equipment or maintain complex systems. For this purpose traditional technical skills are no longer sufficient. Today's work demands require more fundamental knowledge of a great variety of disciplines.

In the modern context, skill can be best seen as 'the ability to execute incomplete or indicative instructions' (Sabel, 1995, p. 84). The essence of skilled work is the ability to make intelligent decisions on the basis of formal knowledge and practical know-how. Workers who are performing 'discretionary work' have to make autonomous decisions on the basis of their knowledge while working. Modern skills are those necessary for job mobility and for coping with changing production processes. The preconditions are a high and rising level of general education and the ability to deal with instability and uncertainty.

Deskilling today, on the other hand, means complete exclusion from the labour market or to be dependent on the availability of marginal McJobs. Low-skilled workers are (if at all) employed in simple jobs in supermarkets, fast-food restaurants, etc., so-called McDonaldized service jobs, which from the beginning were conceptualized as simple, repetitive tasks without initiative. The fate of the unskilled is low paid, contingent and temporary work.

The employment situation for the highly skilled, however, is not unproblematic either. They are forced to permanently develop their skills in order to remain employable. The situation of skilled workers is expressed by the German theoretical concept of the manpower entrepreneur (*Arbeitskraftunternehmer*). This concept assumes that the modern worker is forced to behave like an entrepreneur of his/her own working power. Workers have to act rationally and to develop strategies for *skill development* and *lifelong learning* in order to secure the selling of their specific labour power over a longer period of time. In a learning economy the *substantial skill* is the *ability to acquire more and different skills*. This leads to a further segmentation of the labour force. The competence to adjust one's skills is in general unequally divided between the low or unskilled workers who cannot do so and the skilled employees who usually are highly educated, well-trained, flexible and adaptable to changing conditions and job demands.

There is a new and increasing segmentation of the labour market and polarization of the job structure: good work with chances for professional advancement and career—bad work without occupational perspectives and without chances for upward mobility.

The emergence of lean production in the 1990s has led to the end of mass production and at the same time has altered the trends in skill development. Firms increasingly automated and eliminated the routine tasks with the effect that in the twenty-first century the remaining staff mainly consists of highly qualified problem-solvers and 'symbolic analysts' (Robert Reich) whose task is to improve production systems and to find new and better solutions. Although even the employment security of the members of these qualified groups has dwindled in the past decades, capital nevertheless remains highly dependent on their active co-operation,

involvement and participation. This means that strategies of responsible autonomy and skill development will become more relevant and widespread. In the context of reduced hierarchies, teamwork and the delegation of responsibilities, the work situation of the members of knowledge occupations and professional groups has been revalorized. They become enabled to acquire more and better skills and can advance their employability.

Notes

1. This view of the future of capitalist societies is characterized by John Bellamy Foster in his introduction to the 1999 new edition of Harry Braverman's *Labour and monopoly capital* as the 'orthodox view' of work relations and skill development (Foster, 1994, 1999).
2. Peter Meiskins (1994) gives a well informed, short but comprehensive overview of the contemporary perception of Harry Braverman's work and an adequate synopsis of the up-to-now relevant disputes between the participants of the early 'labour process debate'.
3. This way of organizing and thinking becomes an obstacle if modern organizational concepts emerge which rely on technical co-operation over occupational and departmental boundaries, as Kern and Sabel (1974) have shown.

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