Chapter 15 Al for good work

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1. Introduction. Facing transitions

We are in the middle of major discussions about the opportunities and threats of artificial intelligence. Besides economic benefits and prosperity we want good jobs. Research indicates that AI does not automatically lead to good jobs nor to the disappearance of bad jobs: the outcome depends on organisational design and management regimes on the one hand and employee participation in decision-making on the other. This is the struggle for organisational control.

The concept of good jobs means more than wages and permanent contracts; it's also about work content and labour relations. Theory-based criteria and design approaches for good work are available, and policies ought to be following the European Pillar of Social Rights Action Plan, in which the European Commission encourages national authorities and the social partners to foster workplace innovation.

Europe is engaged in a digital transition, increasingly connected to the green transition. The ambition is that, in addition to economic and climate goals, these transitions also generate good jobs and that no-one is left behind. This is neatly formulated by the European Commission in its statement on Industry 5.0:

Industry 5.0 is characterised by going beyond producing goods and services for profit. It shifts the focus from the shareholder value to stakeholder value and reinforces the role and the contribution of industry to society. It places the wellbeing of the worker at the centre of the production process and uses new technologies to provide prosperity beyond jobs and growth while respecting the production limits of the planet. (European Commission 2021a)

However, the market mechanism does not provide good jobs by itself. Rodrik and Sabel (2019) describe a 'massive market failure' to create 'a good jobs economy', one example being that the number of workers with monotonous repetitive tasks did not decrease between 2005 and 2015.

Table 1	Does your job involve short repetitive tasks of less than 1 minute?
	Does your job involve short repetitive tasks of less than 10 minutes?

European Working Conditions Surveys	No short repetitive tasks	Between 1 and 10 minutes	Less than 1 minute	Total
2005	54.4%	25.3%	20.2%	100.0%
2010	51.2%	25.5%	23.4%	100.0%
2015	53.8%	24.6%	21.6%	100.0%

Source: Eurofound, European Working Conditions Surveys (in Pot 2022).

Of course, some routine tasks have been replaced by automation, robots or AI, but German research shows that new repetitive tasks have emerged in their place (Ittermann and Virgillito 2019; Lager 2019; Lager et al. 2021). One example is the expansion of the number of warehouses and new technologies such as headphones (audio picking) and Google Glass (vision picking) that lead to higher productivity but also shorter tasks and task intensification; another is Amazon Mechanical Turk that offers workers the freedom to complete very short menial tasks such as recognising and labelling images, paid as little as \$0.01 each. Ironically these tasks are called 'human intelligence tasks' because machines cannot do them. The data produced as a result of this activity is necessary to feed, or train, AI systems. The estimated number of workers involved in this in 2013 was 580,000 (Kuek et al. 2015: 19); because these online workers are invisible, their activities are sometimes called 'ghost work' (Casilli 2016).

To manage the consequences of the digital transition, we need to have a good understanding of the technical and organisational alternatives and the balance of power involved in organisational design.

2. Balance of power and organisational control

The employment relationship is not just the legal link between employers and employees regarding work or services carried out in return for remuneration and the presence of reciprocal rights and obligations between the employee and the employer. Marx has extensively theoretically explained that technology and organisation play an important role in the struggle over the combination of working time (hours, minutes, breaks) and the intensity of work (effort per hour) in relation to labour productivity and pay (Marx 1887: Chapter 15).

We see this reflected in F.W. Taylor's design theory called 'scientific management' which was supposed to lead to the optimum performance of man and machine, maximising prosperity for the employer and the workers. The new organisation was characterised by a separation of mental and manual labour, the introduction of a managerial system and the splitting of tasks alongside further mechanisation and piecerate wages (Taylor 1911). For this purpose, time studies were used and, later, also motion studies (Gilbreth and Gilbreth 1917) in what we would now call a data-driven approach. In this way, every worker could perform and earn to the maximum without excessive effort.

Taylor recognised the struggle for organisational control. As a result of scientific management, workers' practice of 'going slow' (to prevent an increase in the pace and a reduction in the rate) would no longer be possible and trade unions would become superfluous (Taylor 1911). Taylor only saw opportunities. However, the theory failed in practice to fulfil all the promises. Negative consequences included de-skilling and intensification, as well as risks to health and safety. Trade unions became important, while employers also recognised the usefulness of collective agreements and governments introduced laws on labour and social protection.

Organisational control on the part of management can take different forms: 'command and control', or 'participation and trust'. A control regime that seems to be somewhere in between is what Doorewaard calls 'management by seduction', a hegemonic form of control embedded in the rules and structure of modern factories and offices which, broadly speaking, are accepted by all the parties. In a self-evident way, they bring about a social practice in which an unequal chance of realising interests and/or wishes arises and is maintained (Doorewaard 1989). Informal behaviours can differ as well, for example respect or intimidation. Management, based on algorithms without human intervention, can also include automatic decisions about ratings, rewards and penalties, as we know from the Uber app, in a new form of social domination (Nicklich and Pfeiffer 2023).

Organisational control on the part of workers can also take different forms: task autonomy and skill discretion, autonomous teams and shopfloor consultancy, codetermination and collective bargaining or collective action such as strikes. Informal behaviour can either reflect a desire to follow the rules or to try to avoid them, to be proactive or to go slow, and sometimes sabotage. In the particular context of AI, this boils down to the question of how to fool the algorithm. One example is the 'timed collective logouts by couriers in the twenty-first century that are mirroring the stopping of machines in the twentieth century' (Vandaele 2021: 227). Chase Thiel and colleagues (2023) theorise that monitoring paradoxically creates the conditions for more (not less) deviance by diminishing employees' sense of agency, thereby facilitating moral disengagement via the displacement of responsibility.

Although the social context has changed considerably, the struggle for organisational control is still ongoing. Perhaps the application of AI will mark the beginning of a new phase of this struggle. The scope for action is vast: Katherine Kellogg and colleagues (2020) point out that employers can use algorithms to direct workers by restricting and recommending; evaluate them by recording and rating; and discipline them by rewarding and replacing.

3. Technological determinism or organisational choice

It is often thought that the appearance of jobs and tasks is determined by technology and by economic factors (efficiency, productivity). However, how work is organised also appears to depend on the chosen management style. This has recently been substantiated with research from the United States. Management practices have at least

as much impact on productivity as new technology (R&D and IT) (Bloom et al. 2019), but they are very different and such differences are difficult to explain. Management styles that are not economically optimal often lead a tough existence. The leadership can opt either for 'command and control' or 'participation and trust', and that choice is not primarily determined by technology or economics. In the organisational sciences, this relativisation of technological and economic determinism has led to the use of the term 'organisational choice'. In theory, this also gives room for employees to have a say in the organisation of work and technology. For example, research around 1990 showed that the robotisation of arc welding can lead to task splitting as well as task integration (Benders 1993). An even simpler example from the present day is that of the Koninklijke Gazelle (Royal Gazelle) bicycle factory in Dieren (in the Netherlands) which has organised assembly work in such a way that workers perform tasks of a maximum of 90 seconds, whereas at the Koga bicycle factory in Heerenveen an operator assembles the entire bicycle. In principle, both factories have the same technology at their disposal. Gazelle claims 'world class manufacturing' but has designed tasks that are an affront to human dignity and that do not comply with European and Dutch legislation on monotonous and timebound work (Pot 2016).

The same argument holds for the determination of skills. Steven Dhondt and his team investigated changes in technology, work organisation and skills over time. The results show technological change to have small effects on changing skills use in contrast to the larger effects stemming from changes in the organisation of work (Dhondt et al. 2022). This conclusion has also been drawn by David Autor and colleagues:

To make use of the strengths and limitations of machine learning, organizations will need to redesign workflow and rethink the division of tasks between workers and machines, akin to what occurred as Amazon deployed robotics in its warehouses. The resulting changes in work design will alter the nature of many jobs, in some cases profoundly. But the implications for specific skill groups are as yet uncertain and will in part depend on managerial and organizational choices, not on technologies alone. (Autor et al. 2019: 32)

4. Research on AI: mixed outcomes

Focusing on AI, the same conclusions (about organisational control and organisational choice) can be drawn. Daron Acemoglu and Pascual Restrepo (2019) point out that artificial intelligence is now mainly used to automate labour, resulting in unemployment and little or no improvement in productivity; whereas it is also possible to use AI to create new highly productive forms of labour with a decent quality of work, which would be better for people and for the economy.

Empirical research confirms that the application of AI can have different effects on job quality. Danish research shows that AI may enhance or augment skills through, for example, the increased use of high-performance work practices, or it may raise the constraints on the pace of work and reduce employee autonomy, understood as the exercise of control over one's work methods and pace (Holm and Lorenz 2022). From

11 case studies across Europe on combined automation and AI systems, Eva Heinold and her team (2023) find, in most cases, work that is less dirty, dull and dangerous in terms of job content while embodying more creative, challenging and cognitive tasks.

According to Alex Wood (2021), the existing evidence suggests that algorithmic management may accelerate and expand precarious fissured employment relations (via outsourcing, franchising, temporary work agencies, labour brokers and digital labour platforms). It may also worsen working conditions by increasing standardisation and by reducing opportunities for discretion and intrinsic skill use. Evidence from platform work and logistics highlights the danger of algorithmic management in intensifying work effort, creating new sources of algorithmic insecurity but also fuelling workplace resistance. Indeed, there may be both positive and negative outcomes for workers, depending on management regime (Kellogg et al. 2020; Poba-Nzaou et al. 2021). Raquel Kessinger (2021) demonstrates how managers in a digital marketing agency softened the edges of algorithmic evaluation by engaging in relational work with employees who were subject to algorithmic recording, in the process reducing worker stress and encouraging learning. She calls this management regime 'orchestrating friendship' reflecting, as described in a previous paragraph, a hegemonic form of control or 'management by seduction'.

Pierre Bérastégui (2021) argues that algorithmic management leads to high job standardisation due to more predictive patterns in the delivery of work and permanent digital surveillance. Platforms are the primary beneficiaries of such practices as they are able to exercise greater control over the terms of the exchange. Platform workers, on the other hand, are left with very little discretion or latitude in the way they perform their duties. This entails, among other things, psychosocial risks. The case of Amazon shows that permanent surveillance not only controls the performance of workers but also their behaviours by countering their attempts at organisational control and curtailing their trade union activities (UNI Global Union 2021). Furthermore, we know that many recruitment algorithms unintentionally discriminate against particular groups (Burt 2020).

Another point of contention is the use of AI for increasing occupational safety, some examples of which are known as predictive-based safety, with applications growing in terms of detection and warnings in workplaces and of the use of big data in accidentology and epidemiology. For example, facial recognition may be used to check whether workers are wearing the correct safety equipment. But even then, it has been observed that this can lead to the assessment and disciplining of employees, resulting in workplace stress and mental health problems (Moore and Starren 2019; Zoomer et al. 2022; INRS 2023). It turns out to be difficult to experience the advantages of predictive-based safety without the disadvantages of digital control.

Quite a large body of research shows the potential for negative effects in the course of which it could almost be forgotten that AI may also bring about positive innovations in products, services and processes. The benefits for doctors, teachers and judges are also evident where AI supports them to work in a more precise and better informed way. At the same time, recent research shows that there are significant impacts and risks to the

teaching/educating profession such as the solving of tasks by students through various AI-based applications like ChatGPT (Ghita and Stan 2022). Teachers' professional organisations are already complaining of the effects on teachers of the increasingly opaque use of AI (Onderwijsraad 2022).

According to the OECD, artificial intelligence has made significant progress in areas like information ordering, memorisation, perceptual speed and deductive reasoning – all of which are related to non-routine, cognitive tasks. As a result, the occupations that have been most exposed to advances of AI are mostly those in which computer use is high, such as in highly skilled, white collar areas including amongst business professionals, managers, science and engineering professionals, and legal, social and cultural professionals (OECD 2021). The latest variants of AI are generative pre-trained transformer (GPT) models the introduction of which may see approximately 80% of the US workforce having at least 10% of their work tasks affected while around 19% of workers may see an impact on at least 50% of their tasks (Eloundou et al. 2023). The influence of these models spans all wage levels, with higher-income jobs potentially facing greater exposure. Further research will be necessary to explore the broader implications of GPT advances, including their potential to augment or displace human labour as well as their various impacts on job quality, inequality, skills development and numerous other outcomes.

5. Criteria for good work

If we want high quality jobs based on the 'human-in-control' principle, what kind of criteria can be used? Above all, they should refer to the objective characteristics of work tasks. Subjective measurements (job satisfaction, meaningful work, etc.) are important but not sufficiently so to ensure decent work that is compliant with the law. After all, we know that how people evaluate their work partly reflects their socioeconomic position, their work history and the opportunities they see, or do not see, in the future (Both-Nwabuwe et al. 2017). Furthermore, the criteria for job quality should be distinguished from the consequences of job quality such as learning, stress, wellbeing and innovative behaviour.

In debates on transition and good work, the emphasis is on terms of employment (wages, contracts) and occupational safety and health; work content and labour relations receive rather less attention. That is why the focus in the criteria set out in Box 1 below is mainly on the latter issues.

These criteria are drawn from legislation as well as scientific theories and research. Theories about the quality of work tasks are: job demands-control-support (Karasek and Theorell 1990); the job demands-resources model (Bakker and Demerouti 2007); action regulation theory on complete jobs (Hacker 1986, 2003); conditions for wellbeing at work (Pot et al. 1994; Pot 2017); and self-determination theory (Deci et al. 2017). A number have already been included in guidelines on psychosocial risks, for example the Psychosocial Risk Management Excellence Framework (EU PRIMA-EF) in which national institutes, as well as the International Labour Office and the World Health

Organisation, have been involved (Leka and Cox 2008). Job content criteria are also covered in ISO 45003 'Occupational health and safety management' (2021). Many of the criteria mentioned in these guidelines are regular items in surveys such as the European Working Conditions Survey.

Box 1 There is good work if

Terms of employment:

- the contract offers job security
- the work provides a living wage
- the pay system is transparent and fair
- workers have decision-making authority regarding working times and taking leave and holidays
- workers have the opportunity to receive extra training and education

Job content:

- the job consists not only of executive tasks but also of preparation and support tasks.
 If that is the case it is called a 'complete job' (supporting tasks could be maintenance or quality control)
- difficult and easy tasks are balanced in the job
- there is autonomy regarding work pace, the order of work and the way of working
- the work is not monotonous or repetitive
- enough and timely information and feedback is given about one's own (team) work
- the support of colleagues and line management can be asked for easily
- workers have insight into the algorithms used

Working environment:

- preventive measures and where necessary protective measures have been implemented so that workers may work safely and in a healthy way
- the workplace of individual workers is not isolated and there are opportunities for contact

Internal labour relations:

- enough and timely information is given about the strategy and the results of the entire organisation
- workers in shopfloor consultation can participate in decisions regarding (new) processes and the division of tasks and targets 'organisational tasks'
- there is legal employee representation
- measures have been taken to prevent bullying, sexual harassment, discrimination and violence from colleagues/customers/clients
- the treatment is respectful
- there is no 'real-time' (digital) control of performance and movements
- agreements have been made about the collection and protection of worker data (GDPR)
- workers do not have to respond to messages outside working hours (there is a right to disconnect)

6. Beyond policies and regulations

Of course, new legislation on AI and labour law reform is necessary and several initiatives at European and national level are underway (Ponce Del Castillo and Naranjo 2022). However, for organisational control and organisational choice, hard regulation can be supportive but it is neither sufficient nor particularly effective. In some situations, the joint actions of the social partners and governments provide better opportunities including, for instance, in national research and implementation programmes on workplace development, employee-driven innovation and innovative work organisation (Alasoini 2016; Oeij et al. 2017; Pot et al. 2023). The European Commission refers to this area in the European Pillar of Social Rights Action Plan:

Social dialogue, information, consultation and participation of workers and their representatives at different levels (including company and sectoral level) play an important role in shaping economic transitions and fostering workplace innovation, in particular with a view to the ongoing twin transitions (digital and green) and the changes in the world of work. (European Commission 2021b: 16)

The European Workplace Innovation Network (EUWIN) (2021) describes workplace innovation as new and combined interventions in work organisation, human resource management, labour relations and supportive technologies. The term embodies a participatory process of innovation which leads to workplace practices that are empowering and which sustain continuing learning, reflection and innovation. This approach applies the good work criteria and leads to higher labour productivity and a stronger innovative capacity within the organisation. Recent empirical support can be found in the European Company Survey, based on interviews with managers, which shows that companies with high job quality and high employee involvement have the best scores on employee wellbeing as well as the best organisational performance (Eurofound and Cedefop 2020).

Another way of moving forward is agreements between the Social Partners on how to tackle the digital and green transitions. One example is the Joint Declaration on Artificial Intelligence of the Telecom Social Dialogue Committee of UNI Europa ICTS and ETNO (2020). Both parties favour a 'human-in-control' approach to AI, meaning that humans should remain in control. They also firmly support respect for human rights as a cornerstone value in the use of all AI technology. AI and other emerging technologies should indeed not hinder individual wellbeing but help build a sustainable and inclusive society. Another example is the European Social Partners Framework Agreement on Digitalisation (2020) which also covers work organisation, work content and skills, working conditions and work relations. These agreements reflect a positive approach to the struggle for organisational control.

Collective bargaining is certainly a promising way to regulate the labour market and terms of employment in those sectors where AI has become important (Vandaele 2021; Lamannis 2023). Where collective agreements can be reached, they must be applied in organisations through co-determination and direct participation. This presupposes a management regime based on participation and trust and an awareness of organisational choice.

Where the conditions for collective bargaining do not yet exist, two factors are considered to be key to understanding the mobilisation processes of, for instance, Amazon Mechanical Turk workers and food delivery couriers: the development of specific communities where these workers could meet and share similar concerns; and particular traditions of political activism on which they could draw to organise their collective action. These communities help build a sense of solidarity and identification while the local traditions provide political scripts and resources as well as the self-confidence needed to transform solidarity into action. Both factors together are facilitating the emergence of a new kind of 'associational power', as an alternative to traditional trade unions (Cini 2023).

Bernd Waas (2022: 202) concludes in his working paper on AI and labour law that 'It can be said that the idea of co-determination has not only lost none of its importance, but that securing sufficient co-determination in the era of AI and Big Data seems more urgent than ever.' For example, in Germany, recent amendments in the Betriebsverfassungsgesetz (Works Constitution Act) were accepted in 2022 in which co-determination on AI systems has been added.

7. Conclusion: the continued relevance of 'human-in-control'

The direct participation of workers in the processes of technological and organisational innovation is even more important for designing good work on the 'human-in-control' principle. Workplace innovation provides such an approach and so do several others: quick response manufacturing (Suri 2010), sociotechnical systems design (Mohr and Van Amelsvoort 2016), relational coordination (Hoffer Gittell 2016) and human-centred design (Parker and Grote 2019, 2022). However, not all approaches that promise good work can be trusted. For example, 'lean' has many variants, not all of which turn out to be good for the quality of work (Huo and Boxall 2018). A critical attitude remains necessary to continue the focus on 'human-in-control' and on placing 'the wellbeing of the worker at the centre of the production process'. Ultimately, however, the central concern around the implementation of AI systems in the workplace is the establishment and development of democracy at work.

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