Sociology of Work and Automation

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***Abstract*—The introduction of technology in the work force brought about a plethora of changes to the structure of work place as well as the society. We try to study contemporary literature (Early 2000s), conduct case studies (2021) and understand the concepts of Marx, Taylor, Braverman, Zuboff et al. within the context and build a correlation between their works and its significance in the present scenario.**

I. Introduction

Much of the contemporary discourse focuses on the impact of technology on jobs and the future of work. While policy conversations are focused on identifying relevant coping strategies, particularly through re-skilling, in other corners, a narrative of freedom and liberation is being articulated- while jobs will be lost, this will create more time for creativity and leisure- humans may finally have the freedom they desire.[8]

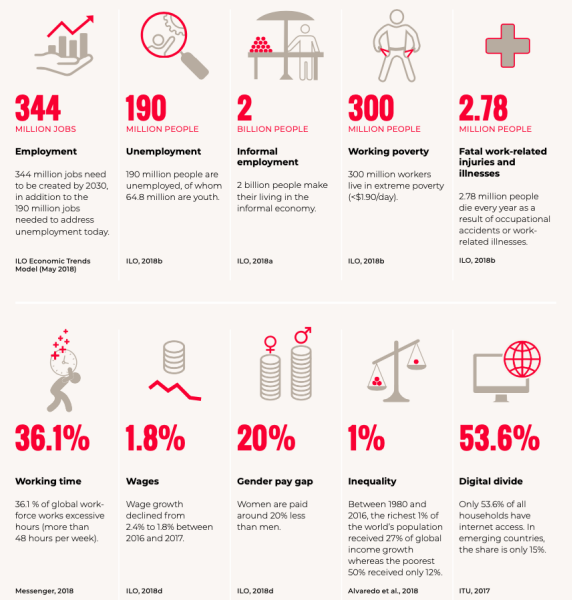

Image source: Mission on the Future of work, ILO 2019 [9] indicates a clear societal divide amongst classes that have differing levels of access to internet, which has created more jobs and left a lot of people unemployed simultaneously, whilst simultaneously overworking them without fair compensation

The use of new technologies in the workplace is changing not only the distribution of labour, but also profoundly impacting the nature of work that is performed itself. These technologies are having a profound impact on how work is found, the employer-employee relationship, as well as workplace conditions and employee organization.[6]

We explore the qualitative impact on jobs that technology has brought about in the past few decades.

II. Conceptual Trajectory

To understand the current literature and how work and labour has evolved in the past few decades, we would first need to start at the basics and answer the following questions:

1) What is labour?
2) How do we define skill of the labour?
3) What do we understand by deskilling of this labour?
4) How are labourers managed and what is the relationship between the managers and the labour power?
5) How has technology affected work and changed inter and intra-labour relationships

   And then finally

6) Talk about how technology and automation can be used to control the total freedom of an individual, starting from their work to their personal life.

A. *Labour*

Labour is, in the first place, a process in which both human brings and nature participate and in which the person, of their accord starts, regulates and controls the material reactions between themselves and nature. They oppose themselves to nature as one of her own forces, setting in motion arms and legs, head and hands, and the natural forces of their body, in order to appropriate nature's productions in a form adapted to their own wants. Thus, by acting on the external world and changing it, they at the same time change their own nature.

Marx talks about abstract labour, and how labour forms things around them and how humans view nature. We shape nature to our own wants. We look at things, see how they could be different and then shape and change that material into what we want and then repeat the cycle. Human beings truly believe that the dichotomy that exists between culture and nature is a product of their own evolution. To be a part of 'culture', i.e. by definition sophisticated, intellectual and managed, automatically puts them in a position above nature-

destructible when left to its own forces, and therefor makes the forerunners of culture the rightful architect of nature and its forces. However, "what distinguishes the worst architect from the best of bees is that the architect builds the cell in his mind before he constructs it in wax"[1] i.e. products of nature (here, bees) don't do labour against their own spaces of survival. They produce in the dominion of their physical needs and humans on the other hand produce even when that physical need doesn't exist.

Labour has always existed in one form or other and present in all social relationships. Hence commodities gain their use values from their labour. Marx then goes on to define productive consumption, as that for the labour, the use of the commodity always remain for their individual consumption. Workers consume commodities in order to create their new use values. individual consumption is a result of productive consumption. He also brings back the relationship of the bourgeoisie with labour and means of production. The commodity of labour power is sold to the bourgeoisie and then no longer belongs to the worker. Since the product of their labour doesn't belong to them, they don't own either the means of production, by extension, or the commodity created either. As a result they become alienated from the product that they are creating. Workers in a lot of cases do not willingly perform their labour, rather, the labour is imposed on them and they are bound to perform in certain capacity. Other than unwillingly succumbing to exploitation, the workers are also segregated as parts of machines, used for maximum efficiency and therefore maximum profit.

1) ***Division of Labour****:* The phrase 'division of labour'[10] was first used by French scholar Emile Durkheim, to denote modes of sustenance in the primary societies of hunters and gatherers. First, it is important to understand what Durkheim meant by the division of labour. With the division of labour, workers specialise in one task each, and then culminate individual efforts for production of commodities. For example, in building chairs, one person would cut the wood, another person would put the pieces together, and another person would paint it. No one person is responsible for the final product; each simply does his own task. This is typically thought to be more efficient than to have each person make a whole product. This was considered to be an important aspect of the industrial revolution, and played a pivotal role in the introduction of the assembly line.

According to Marx[2], the impact of exploitation on the individual worker is quite devastating. Being forced to do the same repetitive task every day kills individual creativity. It makes the worker only little more than a machine. Marx gives a very harsh critique of the role of manufacture, and of the division of labour on the individual. However, he was far from alone in making such a critique. For example, Adam Smith[11], commonly thought of as the father of classical economics (and a major supporter of capitalism), was very concerned about the division of labour's detrimental effects on the worker. Smith's response was to encourage public support for education. Marx mentions Smith's observations, but he does not believe that education is a suitable solution. The concept of 'skill' and its various levels comes into great play when considering labour power and designation.

B. ***What is skill?***

In pure Marxist Terms, human skill is only perceived when it is being used to create some value, either for a bourgeois or for workers to sustain themselves. Although, human skill isn't just limited to the above two, since not every skill has to be churning out a value/surplus. The capitalist system forces us to look at the world through this lens where we perceive ourselves as money-making machines, and consider all our resources, including skill, as a commodity that we can capitalise on. There is no room left for creativity and personal fulfilment. The money that a person earns is partially proportional to the surplus value they create. It is partial because if the rate of surplus/exploitation is very high, it won't give an accurate description of value being generated by them when compared to a different worker.

C. ***Deskilling and Management***

a lot of service work is Taylorized- much of white collar work was subjected to the same routinisation, fragmentation and deskilling as blue-collar work. Taylorism contained the explicit principle of 'functional management'[3] that implied the standardisation and simplification were to be features of managerial as well as manual work- "all possible brain work should be removed from the shop and centred in the planning or laying out department"[3]. The 'science' of scientific management was not to be the possession of the generality of managers but only of a specialised core concerned with overall planning.

'Taylorian organisation' can be adapted not just to routine whit-collared work, but also to the work of many professionals and skilled technicians- old and new. The computer has been hailed by many as an instrument of liberation. It will automate the tedious and tiring work and free workers to engage in more creative and interesting tasks. The point of bringing Taylorism and its related nuances into this argument is to emphasise on the aspect of the information society- the application of which has led to the 'dynamic of de-skilling that is intrinsic to Taylorism. This was a concept further made possible by exertion of tighter technical control made possible but the moving assembly line of the Fordist factory. The coming of the information society also to a great extent caused a shift in functioning within demographic distinctions. Clerical work was initially considered largely to be a man's job involving certain degrees of skill and levels of discretion[4].

There was a ‘craft’ as well as a ‘quasi-managerial’ element involved. The advent of office machinery in the form of adding machines and the punched card processor began the process of de-skilling, symbolised by the ‘feminisation’ of the workforce.

In England 1911, 21 percent of the clerks were women but by 1966, it had gone up to 70 percent. Clerical worker claimed they had become ‘slaves to the computer’- mere machine feeders with virtually no comprehension of the overall purpose of their work or control of its pace.[4] The machine became smarter, not the worker. A large gap was created between the largely unskilled, largely female mass clerical workforce and the small elite of qualified managers and computer professionals, most of whom were male. However, none of the managers, professionals and technical workers were immune to Taylorism and technical control. The very people who designed and operate the new technology were putting themselves at risk and they recognised it too.

Under the proposed idea of division of labour, Taylor[3] also suggested a distinct division between the powers the two classes could have. He explains the same with an example of workers in a pig iron factory, where there could clearly be seen the antagonising relationship between the worker and his manager, and goes on to advocate for hierarchy. With the help of the same example of the pig iron factory, we can see that the concept of “high-priced” men was taken out and converted to how promotions are viewed, where high working employees are segregated from a bunch, then trained and paid more accordingly. This also involved firing of employees who didn’t keep up with the standards.

Since there was a need to maximise the production for the bourgeois, the easiest way for them around this was to make sure that the workers put in maximum effort thereby maximising their productivity. Hence the management class came into existence which was a middle part of both the capitalist and the worker and took some traits of both, but they are usually said to be a part of the capitalists. Taylor talks about experimentation with human beings in order to increase their overall productivity at all times, and often, these experiments spanned over months. This constant obsession of making guinea pigs of human beings, results in them being dehumanised and being treated no better than a machine.

D. ***Confusing relationship between Technology and Labour***

Through Zuboff’s case studies[5] of the three factories/offices, it is evident that as technology got introduced in the respective factories, all of the workers had a turbulent relationship with it. They gradually went from having trouble in believing what the machine tells them and having synchronous issues, to believing that the technology makes it easier for them to handle tasks.

In the studies, it was also evident that although technology made completion of their previous jobs easier, it also introduced to the workers a new set of responsibilities. They were now expected to understand the machine and its data references, draw inferences from the data and then act accordingly. This has two contrary outcomes. While on one hand it meant deskilling of labour power and alienation from the process of production, it also meant gaining more knowledge and experience about how the different processes took place and specialisation in the process, which is what Marx believed would happen.

This however led to more complications within the class structure. As more and more managers got hired in the middle level, it created a hierarchical structure, one that we know today in any organisation- to consist of a large chunk of unproductive labour (unproductive because they don’t directly engage in the process of production of the commodities, but rather just manage people with their soft skills). This creation of hierarchical structure transpired within different layers of the society and is very much visible in today’s world with how people at different levels in the organisations are treated and the degree of control exercised on them.

Contemporary Literature like the Tandem Research, 2018[8] also sets the ground for Work, Mobility and Digital Labor, i.e. The deployment of machine learning technologies reducing the need for low-medium skill labor, and increasing the demand for higher-order skills in addition to Concentration of Knowledge (and Power) which increases ubiquity of technology and automation systems controlled by a few.

E. ***Panoptic Power/Surveillence State***

Techniques of control in the workplace became increasingly important as the body became the central problem of production. The early industry employers needed to regulate, direct, constrain, anchor, and channel bodily energies for the purpose of sustained, often repetitive, productive activity. Still struggling to establish the legitimate authority, they invented techniques designed to control the labouring body. The French historian Michael Foucault has argued that these new techniques of industrial management laid the groundwork for a new kind of society, a ”disciplinary society,” one in which bodily discipline, regulation, and surveillance are taken for granted. Information systems that translate, record, and display human behaviour can provide the computerised version of universal transparency with the degree of illumination that would have exceeded even Bentham’s most outlandish fantasies.

Such systems can become information panopticons[5] that, freed from the constraints of space and time, do not depend upon the physical arrangement of buildings or the laborious record keeping of industrial administration. They do not require the mutual presence of objects of observation.

They do not even require the presence of an observer. Information systems can automatically and continuously record almost anything that designers want to capture, regardless of the specific intentions brought to the design process of the motives that guide data interpretation and utilisation. The counterpart of the cultural tower is a video screen. The web of windows is replaced by procedures for data entry such as micro processes built into operating equipment, the control interfaces that record operator inputs.

Tandem Research[8] talks about a surveillance state where a number of states in Asia, including India, are investing in mass surveillance systems— from facial recognition technologies to social media analysis cells. Government agencies are already using automated tools to allocate resources and monitor people. This raises significant concerns about civil rights and liberties.

Let's look at the current literature with a case study attached to it.

III. Case Study

To understand the context better, in addition to reading the current texts, we conducted a case study and see how subjects believe their trajectory in the workforce was shaped by technology.

Our subject for this case study is a 53 year old Indian female participant who started working in 1986 as a stenographer in an Engineering college when she was 18.
The technology used for her job was a simple typewriter and didn't require any specialisation, just some typing experience and learning basic English.

The job was initially simple and consisted of the following tasks:

1) someone would dictate her to type something and she would do it,
2) or she would have to type out something written in hand.

Computers existed, but she didn't seek learning them since it felt like a daunting task at first. In 1996, She left her job since her husband worked in a different city and they mutually came to a decision to shift there permanently.

At her new job, she was introduced to computers and printers which introduced her to a new set of duties altogether and increased her workload.

Since computers are capable of much more complex tasks, she was given more complex tasks like drafting emails, co-ordinating meetings, handling logistics of the printer supply chain and their materials, this represents the specialisation that we were talking about previously and increasing of the worker's workload as depicted in the factories of Zuboff.

In addition, at her new workplace, our subject was one of the first employees (1996 - present). She currently has the opportunity to take up a management position but she doesn't want to as "Nobody there wants to work hard". As Taylor points out in his texts, everyone tries to get out of doing the harder work, while the head of their department has to take the blame for it, without any significant pay-raise.

There is a panopticon structure still existing in her workplace where rules are enforced upon them at random times for things as random as "No munching on snacks whilst working" which has nothing to do with their jobs, but it keeps the bourgeois in control and asserts dominance on their employees while making sure that nobody 'wastes' any working minute in eating food (Taylor, time motion experiments). In addition, all of the employees are forced to do a bio-metric identification prior to 9:30 am strictly, and if they fail at doing so, half of the pay for that day would be deducted.

These are just some of the ways in which the bourgeois tries to keep an eye on the workers and our case study proves that the methods and concepts Marx, Braverman, Taylor and Zuboff built upon/introduced, still exist and hold true to a large extent. Technology might have changed the ways in which the bourgeois and the workers function, but the core ideas and morals of both of them have remained the same.

IV. Conclusion

The structures as studied by the classical texts exist in totality in the present scenario as well, as is discussed by our study of the contemporary texts which bring about similar concepts of deskilling, concentration of power with a particular class, and a surveillance state amongst many others and these are backed up with a case study which express the same grave concerns as to how the organisational structure is managed. There is scope to look into gender as a factor as well within this study.

V. References

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