1 Would You Bet Against Sex Robots?

In the first chapter, (1) I explain what the dominant "technicist" view is, and then, (2) I criticize it the best I can to show that it is inadequate.

1.1 The Technicist View

The first part of chapter one explains the technicist view by discussing Autor's article as an ideal type. This will be done by picking certain points from his argument and discussing them in depth. Briefly said, in this article, Autor tries to explain why if automation is supposed to "automate" so many jobs, why is it that there are still so many jobs. His answer is that while automation does substitute for labor, it also complements it by raising output in ways that demand greater labor, raise earnings and increase productivity. This is so because he believes that there are tasks that require flexibility, judgment, and common sense that are still too difficult to automate, thus jobs that require them will see their numbers increase. Autor does discuss the problem of polarization in the United States at the top and the bottom of the skill distribution: namely, the reduction in middle skill–skilled blue collar, clerical, and sales–and the increase in high skill— professional, managerial, technical–and low skill–low paid personal services–jobs.

He believes that for workers in the top of the skill distribution they can benefit from ICTs since they can be more productive due to complementarities with these technologies and benefit from multiple venues to employ their skills (i.e., elastic demand for services), and from their safety from competition due to high barriers to entry in relation to the many years of education required to exercise their profession (i.e., inelastic labor supply). As for those at the bottom of the skill distribution, Autor claims that these jobs benefit little from advances in ICTs because their final demand is relatively inelastic, advances in productivity change little in their everyday execution of tasks, and face competition due to low entry barriers (i.e., elastic labor supply) that temper their possible wage increases. That said, he claims that he does not believe that job polarization would translate in wage polarization, except in certain times and certain labor markets. [In this part, he cites several studies, but the problem is that they depend on the way the different jobs are categorized, and the comparability among different studies, due to precisely this same problem: data is not comparable (which he acknowledges). He does acknowledge that the quality of the jobs might be affected, but he does not explore the problem any further.

He then discusses Polanyi's paradox and how machine learning might be able to circumvent it.

1.2 The Historicity of the Wage Relation

The second part of chapter one criticizes the technicist view by showing that it ignores the conventionalist dimension of the concept of work. I will not criticize specific points of Autor's paper, as the goal of part one was just to show how mainstream economists think the question of the impact of ICTs on work.

Firstly, I will point out the historicity of the concept of work by criticizing the concept of the labor market. I claim that Autor should have cited the other Polanyi and his concept of fictitious commodities–labor, land, and money. I will mention the example of Supiot and the work contract in the tradition of French Constitutional Law. I will claim that the fact that people are even willing to work is dependent on the social organization and institutional configuration.

Then, I will propose the alternative view, based on Schaffer (1994) that the problem of automation is that of the place that humans will have in that vision of the world and in the social conditions of production. In other words, it is wrong to think that with ICTs we will do more of the same but faster. I will argue that the important question will be of where we put people in that world, which, thinking in terms of a labor market that moves around people as if moving around potatoes, does not help answer. I will argue then, than to appreciate this changes, the best way is not to look at what ICTs can do concretely, but rather to see the inscription of these changes within broader cultural and historical trends. As if it where, to listen to the contrapuntal polyphony of changes in thinking, in institutions, in technologies, etc. This I believe will capture better the changes brought on by the ICTs, which shouldn't be understood as changes brought on by these objects by themselves, but as changes brought on by the institutions, the ideas, and the people advocating them.

It is not to say, that is it foolish to envision a

certain autonomy of these technologies, but, if we ever let a machine govern, it is not because the machines take power as in *Terminator*. If we let an algorithm take control, it is because we put it there, as in the movie Dr. Strangelove, where control of the missile defense systems of the United States and the Soviet Union are given to computers in order to avoid human error, with the telling fatal consequence that their ridiculous efficiency result in nuclear war. For a computer to become American president, that computer would have to be first recognized as being a United States citizen. Again, it is not to say that this will never be possible, but that society would have to first recognize it as such.

2 Did Adam Smith Invent the Digital Computer?

After establishing, in part two chapter one, that the technicist view ignores the historical specificity of the concept of work and labor, in the second chapter, I sketch the historical relation between the history of the artificial intelligence and the concept of labor to suggest that thinking about the possibility of thinking machines and the construction of sociotechnical systems for the conduct of workers have been related since at least the nineteenth century.

2.1 Manufacturing Logarithms and Weaving Algebraical Patterns

The way this history will be sketched is by analyzing the importance of the project for the calculation of the logarithmic tables by de Prony by two pioneers in the history of the computer: Babbage and Simon. My argument is that Babbage, when interpreting the significance of de Prony's project, is reading an event of eighteenth century revolutionary France through the lens of the nineteenth century nascent factory system of Great Britain. Babbage's interpretation was that de Prony's division of mental labor embodied the possibility of mechanizing thought. So he conceived of a project to at least some operations of the mind were simply mechanic.

This produced not only a change in our conception of intelligence (prodigious calculation was no longer the province of precocious mathematical talents but that of the idiot savant) but also a change our thinking about the place of subordinate work in the execution and the organization of labor.

This is shown by Schaffer's analysis of the reconfiguration of the workshop to produce the pieces for Babbage's engines: control over production was wrested away from workers and engineers over to Babbage. Automation, in Schaffer's interpretation, was present in the production of the precision tooling necessary for the production of the Engine's pieces, but this wasn't an innocent technical improvement: it was also a reconfiguration of the social relations of productions, the opaque organization and knowledge of the production process was rendered visible and amenable to control by Babbage. In other words, the production of the Engines required technical advances that presupposed a reconfiguration of the working space in which control of the production process was wrested away from workers and master craftsmen. [It must be mentioned that Babbage didn't think that *all* the operations of the mind were mechanical; the top section of de Prony's project was, for Babbage, still done by humans]

2.2 The Impossibility of a Democratic Computer

In the second part of chapter two, this story will be analyzed in the context of the thought of Herbert Simon about computing and the organization of labor. As Babbage did, Simon knew about de Prony's project, which he read using the lens of the mid-twentieth century. In particular, he read de Prony, and he read Babbage reading de Prony, in the context of his thinking about a general mathematical science of systems. Unlike Babbage, Simon thought that machines could literally "simulate" human thinking and human actions to the point where they could replace a lot of things that humans do. Thinking in the context of a deterministic universe, Simon thought that humans are no less determined than computers in doing what they are programmed to do. Thinking that the structure of all systems is complex and hierarchical, when applied to work, Simon concedes that worker control over the production process is misguided, and I claim that this is one of the consequences of his concept of bounded rationality that is not usually discussed.

From this perspective, Simon blurred the lines between natural and artificial systems: using one to describe the other, and vice versa. I claim that

this causes a very dangerous naturalization of the social, which in the context of discussion about worker control over the productive process, is perilous for democratic revindications. The fact that epistemic handicaps are used to argue for worker subordination to the bureaucratic organization is mistaken, but this is the general ontology that undergirds thinking about artificial intelligence.

My point is that to have artificial intelligence really change things for the better of workers, it is necessary to challenge this naturalization of the social. As shown in the article of the encyclopedie, technical change can free workers from toil, and free them to do other activities, but thinking that what will determine this activity, be it philosophical contemplation or delivering food on a bicycle depends not exclusively nor even mostly on the technical feasibility of the tasks in question. Rather, what this thesis sought was to show that the place and the course of technical change is also inscribed in the context of social conditions, and on the thinking about these conditions: thinking about what a worker is, and their place in society. Whatever has prevented thinking about technology within broad social context and the thinking about this context, be it a "broad church" positivism among social scientists or the idea that "facts" speak for themselves, the transformations on the future of labor by the development of artificial intelligence has to be thought about in this way. Whatever the real technical possibilities of automation due to artificial intelligence, they can only be realized by questioning also our thinking about the organization of labor, about the status of subordination within the working relations, about what it means to be a human, etc.