# Vers la machine à gouverner

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# 1

# Introduction

## ACCROCHE: "THE CONCEPT OF WORK BETWEEN SOCIETY AND NATURE"

In the *accroche*, I will describe how something as self-evident as the work concept is in fact an ideological construct (ideological in the sense of the anthropologist Louis Dumont, and not in the Marxist sense). Therefore, I will briefly indicate that the concept of work begins in political economy and is then appropriated by natural science to be reimported into economic science.

Likewise, I will indicate that the motivation for the the thesis is to rethink what work is in the 21st century, taking into account the ubiquity of information technologies.

## MAIN ARGUMENT: "RETHINKING WORK IN THE 21ST CENTURY"

In this section, I will state the main argument of the thesis: namely, that the origin of the computer is a particular conception of the organization of work, which we should take into account to understand the transformation of work (its forms, its meaning, its formal definition in law, etc.) in the 21st century. As such, this argument calls into question the "popular" understanding of the one-sided transformation of work by the appeareance and dissemination of information and communication technologies (ICTs) in the mid 20th century. Instead, this thesis proposes to read the computer as a technology for organizing labor, to then use this reading to understand the transformation of labor that ICTs are supposedly pushing for.

## STRUCTURE OF THE THESIS

In this section, I simply describe the contents of the two chapters of the thesis and hint at the conclusion.

The first chapter traces the origins of the computer in de Prony and Babbage. The idea is to provide the reader with enough background knowledge to understand that the computer is not a thing but a concept, and that the definition of this concept has to be approached historically. This chapter will define the early

computer as a conception of the organization of work that reflects an engineering and managerial mentality. Likewise, this chapter will hint at the link between this conception of work and its definition in law as a relation of subordination.

The second chapter will describe Herbert Simon's interest in Babbage, and will speculate on how this reading shaped Simon's conception of the computer, the relation between the natural and the artificial, the changes in work produced by new technologies (artificial intellgence, computers, and automation), and the organization of work in society. Moreover, this chapter will criticize Simon's idea that the organization of work is a purely technical problem to propose an alternative view of work that emphases other criteria for organization such as justice, etc.

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2

# Chapter 1

The first chapter introduces the definition of the early computer as a technology for organizing work. The first objective of this chapter is to question the belief that the appropriate definition of the computer is in terms of its components. The second objective is to acquaint the reader with the history of the early computer by describing the project of the calculation of the logarithmic tables at the *Bureau du cadastre*, and the importance that this project had for Charles Babbage's calculating machines.

## DID ADAM SMITH INVENT THE COMPUTER?

The introduction to this chapter presents the reader with the story of how Gaspard-Clair-François-Marie Riche de Prony was inspired by Adam Smith's concept of the division of labor–as it appears in the pin factory example of the "Wealth of Nations"—to organize a group of hairdressers to produce mathematical tables for the French *Bureau du cadastre*, during the aftermath of the French Revolution. The point is to show that the "computer" is in fact an organization of labor, in which complex calculation tasks are divided into simpler calculation tasks, which are then carried out by unqualified "specialized" workers (or in computer science lingo, by *sub-processes*).

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## DE PRONY'S TABLES AND HUMAN COMPUTERS

The first section of this chapter contextualizes the story of De Prony, by providing some background information on him and on the project of the calculation of the logarithmic tables. The idea is to provide an understanding of the significance of the project at the time, and the subsequent significance that it had for Charles Babbage.

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## CAN MACHINE LABOR REPLACE HUMAN LABOR ?

The second section of this chapter connects De Prony's story with Babbage's design of the Difference and the Analytical Engine. The idea is to connect Babbage's ideas on the organization of work and industry with his thought on calculating devices. Therefore, the concept of *mental labor* will be discussed, as it relates to the 20$^{th}$ century analogy between mind and computer–which is key to the thought of Herbert Simon.

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## CHAPTER CONCLUSION

# 3

# Chapter 2

The second chapter describes Herbert Simon's thinking on the computer and organizations to trace the consequences of these ideas into his thinking about the role of artificial systems in shaping the workplace and worker self-determination. Therefore, this chapter will introduce the reader to the importance of Herbert Simon to the field of artificial intelligence, which has been more-or-less ignored by economists–who often only focus on his concept of *bounded rationality*.

## HERBERT SIMON : COMPUTER AS MIND ; MIND AS COMPUTER

The introduction of this chapter discusses the ambiguous relation between nature and artifice in the thought of Herbert Simon–specially, as it manifests in his understanding of the mind as a computer. The idea is to give the reader enough background information on Simon's general vision of *things* to, then, discuss his thinking on the nature of organizations (in the first section).

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## SIMON ON ORGANIZATIONS

The first section of this chapter connects Simon's ideas on the computer and the mind to his general thinking on organizations. The idea is to pave the way for a political understanding of Simon's more abstract writings on organizations by presenting Simon's own thinking on the concrete social consequences of his vision—which is done in the second section.

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## COULD COMPUTERS BE DEMOCRATIC ?

The second section of this chapter connects Simon's general ideas on organizations to his thought on the role of artificial systems (machines, automation, ICTs, artificial intelligence, etc.) in shaping the workplace. Moreover, this section will discuss his problematic concept of a "science of the artificial" as it relates to the organization of labor–after all, there's nothing more artificial than the institution of wage earning. The idea is to show that the description of the organization of labor as a purely technical matter has terrible consequences for worker self-determination, and that this understanding of the worker as a just a cog in the production process is not questioned by Simon, and thus, unlikely to change under the new information technologies.

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## CHAPTER CONCLUSION

# 4

# Conclusion