

# Chapter 1

## Automation and Augmentation: Human Labor as Essential Complement to Machines

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### ABSTRACT

*This chapter examines the nature of work where human labor is a complement to machines and considers its import for social wellbeing. While dominant portrayals about the effects of work automation are often characterized by discourses of fear and hype, these have limited utility. The chapter proposes moving beyond fear and hype to consider the ways in which automation alters the organization of work and the human role. It asserts that, although essential, the human role in automation is often obscured. Drawing on the concepts of “fauxtimation,” “heteromation,” and human infrastructures, the chapter makes visible hidden forms of human labor in automated work and maintains that a positive strategy for social well-being is the recognition and revaluation of human work in automated processes.*

### INTRODUCTION

In his influential essay, “Economic Possibilities for our Grandchildren,” penned in the midst of the Great Depression, the economist John Maynard Keynes (1930) observed: “the increase of technical efficiency has been taking place faster than we can deal with the problem of labor absorption. . . we are being afflicted with a new disease—namely, technological unemployment” (p. 3). Keynes’s words parallel today’s concerns about the effects of technology to augment and automate the work practices from which many people derive meaning, identity, and agency. Historically, technology applied to work has reduced human labor. In the eighteenth and nineteenth centuries, mechanical systems displaced manual labor jobs. In the twentieth century, robots and other forms of automation diminished the need for human labor in manufacturing and service work. Today, networked computers coupled with big data, artificial intel-

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ligence, robotic automation, scanners, and computing power (Gerrish, 2018; Sejnowski, 2018) augment and automate the social organization of work in new ways.

Augmentation and automation typically refer to a range of advanced developments in information technology and computing that are applied to work and make a device, process, or system function on its own. Robotics, artificial intelligence, and other technologically-driven forms of augmentation and automation displace both low-skilled work and knowledge work. Concerns about the effects focus on possible increases in unemployment for low-skilled labor and deskilling of professional work in health-care, education, law, finance, accounting, and journalism (Acemoglu & Restrepo, 2018; Aghion, Jones, & Jones, 2017; Benzes, Kotlikoff, LaGarda, & Sachs, 2019; Kan, 2019). In radiology, for example, “there are currently machines reading more scans than a radiologist will see in their entire life” (Chui, Manyika, & Miremadi, 2016). In journalism, Open AI’s GPT-2 can “produce [human-like] text for articles and social media posts of ‘unprecedented quality’ by simply giving it a writing prompt” (Kan, 2019). Given these developments, what is the nature of human work in an increasingly augmented and automated landscape?

## **Chapter Preview**

This chapter explores the nature of work where human labor is a complement to machines and considers its import for meaningful work and social well-being. It argues that a key element for social well-being is to recognize and revalue the human labor in automation. Although essential for many forms of automation, the human role is often obscured. This under-examined area warrants attention for its social effects in the wake of job transformation. The chapter makes visible how human labor is central to automated work and posits that recognition and revaluation recenters the human and contributes to social well-being.

The chapter begins by contextualizing the discussion within current frameworks for understanding automation and its effects on work and social well-being. These tend to cycle between dystopian fear about the loss of work and utopian hype about the freedom from work. A critique is offered for movement beyond these two frames that argues for consideration of the ways in which automation transforms work and alters the role of the human worker. Next, the chapter presents the concepts of “fauxtimation,” heteromation, and human infrastructures as heuristics for understanding the ways in which human labor is hidden in augmented and automated work. The recognition and revaluation of concealed human labor is advanced through the example of Robotic Process Automation (RPA) that illustrates the human role in automated work. The chapter concludes with a discussion of strategies for reclaiming the human role in augmented and automated work in ways that maintain social well-being in a highly automated job market.

## **DISCOURSES OF FEAR AND HYPE OF WORK AUTOMATION**

### **The Dystopian Fear of Loss of Work**

Discussions about automation and its effects on work and social well-being tend to cycle between binaries of dystopian fear about the loss of work to utopian hype about freedom from work. In the dystopian vein, the implications of work automation for social well-being are dire. Broad technological trends in the past have reduced human labor with negative effects on employment and wages. The “Engels Pause,” named after the German philosopher Frederick Engels who discovered it, identifies the period during

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