Economics & Philosophy (2025), 1–24
doi:10.1017/S0266267125000045

CAMBRIDGE UNIVERSITY PRESS

ARTICLE

A world without work? Status, technological change and the future of employment

Vincenzo Alfano[1] and Pietro Maffettone[2]

[1]DISEGIM, University of Napoli 'Parthenope', Italy and Center for Economic Studies – CES-ifo and [2]Department of Political Sciences, University of Napoli 'Federico II', Italy
Corresponding author: Pietro Maffettone; Email: pietro.maffettone@unina.it

(Received 19 June 2024; revised 22 October 2024; accepted 05 December 2024)

Abstract
This article links the human concern for relative social standing with technological developments, and the future of work. We argue that to the extent that the desire for social status retains its importance in human behaviour, technological advancements affecting the production of goods and services will not necessarily lead to a diminishment of the demand for human labour. This essay makes two principal contributions. First, it links two different literatures: that regarding status-driven consumption, and that regarding the effects of technological change on labour markets. Second, it offers an alternative justification for the conclusion that radical technological shocks will not eliminate the importance of work.

Keywords: social status; the future of work; technological change; conspicuous consumption; positional goods

1. Introduction

While we do not know whether the invention of the wheel created worries about unemployment in prehistoric populations, the argument that technological changes destroy jobs is certainly a very old one and can be traced back to at least the First Industrial Revolution. Ned Ludd and his followers expressed their discontent about technological innovations through acts of industrial sabotage in the late 18th and early 19th centuries (Sale 1995), breaking into factories and workshops to destroy the machines they believed were responsible for their unemployment. The increasing mechanization of the manufacturing sector, and the widespread use of AI, has recently brought back this worry in heightened form (Gunning and Aha 2019; McGowan and Geobey 2022). Will the convergence of ever more sophisticated robots, machine learning, natural-language recognition, biometrics, and decision management, which collectively drive what the World Economic Forum (2017, 2021, 2022) describes as the Fourth Industrial Revolution, lead us to a world without work?

The argument put forward in this article will link the human concern for relative standing, or social status, with technological developments, and the future of work.[1] We argue that to the extent that the desire for social status retains its importance in human behaviour, technological advancements affecting the production of goods and services will not necessarily lead to a diminishment (in the long run) of the demand for human labour. In the neoclassical framework, individuals work because they wish to consume and need to finance their consumption. The important questions, then, are what people want to consume, and why they want to consume it. A relatively standard set of answers suggests that people are interested in the consumption of goods and services, and that such goods and services contribute to the satisfaction of their material needs. However, if we give due importance to the human concern for social status, we arrive at different answers. As societies become more affluent, people do not aim to satisfy material needs through consumption. Rather, they increasingly demand commodities because of their ability to signal social standing. However, in the context created by a significant technological shock, one that could, at the limit, lower the cost of producing goods and services to zero, such goods and services would cease to be scarce, and thus would cease to play an important role in what Veblen (1899) famously called 'conspicuous consumption'. The implication of this observation, however, is not that people would cease to use consumption for status-related purposes. Rather, they would likely increase their demand for goods and services that contain one of the only remaining scarce resources available to them, namely, human time. Human time employed in the production of goods and services is, however, nothing less than work, as defined by our current standard economic models.

The essay is structured in three sections. In section 1, we briefly outline the current debate concerning the effects of technological change on employment and suggest that its main weakness lies in the fact that it focuses on the short and medium run and only pays attention to production, thus neglecting long-run changes to the structure of consumption choices. In section 2, we explore the familiar idea that consumption choices are often dictated by a concern for social status and highlight that a generalized growth in the material economy alters consumption decisions rather than bringing about the end of material needs. In section 3, we develop a thought experiment and imagine that the production of all

[1]Two concepts are central to our analysis: work, and status. The definitions for both are highly controversial (see, respectively, Honneth 2023 and Anderson *et al.* 2015), so it is important to make clear how we employ those ideas within the confines of this study. Much of section 2 of the article is devoted to the task of defining status (we use status, social status, social rank,and social standing interchangeably). Building on Joseph Heath's work (2022: 106), we define status as 'an informally maintained system of ranking, or of dominance, based on invidious comparison between individuals'. Furthermore, we claim that status has three important properties: it is non-tradable, has the structure of a zero-sum game, and tends to affect socially visible forms of behaviour such as consumption. This definition, coupled with the three characteristics associated with our understanding of the concept, are in our view sufficient to distinguish status, as employed in the paper, from ideas such as social class, and social esteem. The idea of work is central to section 3 of the paper. We use the terms work, employment and labour as synonyms, but are keenly aware that they tend to refer to different kinds of activities (see Cholbi 2023). Our purpose, however, is not to contribute to the ongoing philosophical discussion about the nature of work. Rather, we stick to the mainstream economic idea that work should be understood as an activity that has an opportunity cost in terms of leisure for those that engage in it, and that it is required to finance one's consumption choices.

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

goods and services can be gradually carried out by 'materializing' outputs at no cost. We argue that conspicuous consumption, in the absence of material scarcity, would create an incentive to employ human labour.

2. Technological Change and the End of Work?

Most adults spend significant time engaging in work, and many contemporary societies are arguably 'employment-centred' (Gorz 2010). In such societies, work is the primary source of income for most people and is normative in the sociological sense, i.e. work is expected to be a central feature of day-to-day life, at least for normally functioning adults. However, technological advances such as the increasing sophistication of industrial robots, and the development of ever more sophisticated artificial intelligence, have led some to argue that we are on the cusp of a social revolution (Oosthuizen 2022): one where the contribution of human beings to economic production is no longer needed and, consequently, one where human work would cease to be performed, or at least, required. That said, very few have argued that work would disappear altogether, at least in the near future. Nonetheless, the sense that there is something different about current forms of technological innovations, and that this will lead to a radical re-shaping of the place of work in our social world, is not presented as mere fantasy (see Brynjolfsson and McAfee 2014; Danaher 2019).

The basic idea behind this prediction is that technological advancements increase the marginal rate of technical substitution of capital for labour, also known as MRTS (K, L), i.e. the rate at which labour can be reduced for an increase of one unit of capital, keeping the output constant (Mas-Colell *et al.* 1995). MRTS is equal to the ratio between the marginal productivity of capital and the marginal productivity of labour (MPK/MPL). An increase in that value, due to an increase of the numerator or to a decrease of the denominator, would lead to fewer and fewer entrepreneurs investing in labour to operate their factories, and more and more entrepreneurs investing in capital, resulting in a decline in the total number of workers. This well-established theoretical prediction has also found several empirical confirmations. Koh *et al.* (2020) recently analysed the evolution of the US labour share over the past 90 years and found that its observed decline is entirely explained by the capitalization of intellectual property products in the national income and product accounts. Similarly, Frey and Osborne (2017) claimed that 47% of all occupations in the US labour market could be computerized within less than a generation. Moreover, Almeida *et al.* (2017) found that the adoption of digital technologies leads to a reduction in employment, particularly in routine tasks, and a shift towards non-routine, cognitive tasks, while Chwelos *et al.* (2010) found that firms are increasingly using IT as a substitute for labour, leading to a shift in the factor share of IT at the expense of labour. Needless to say, these predictions constitute a major social concern in light of the displacement of workers by technology (Choi and Kang 2019).

That being said, many have also consistently denied that this extreme outcome is likely to occur. Arguments against technological unemployment are themselves not new. As economists are fond of pointing out, our societies tend to work more rather

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

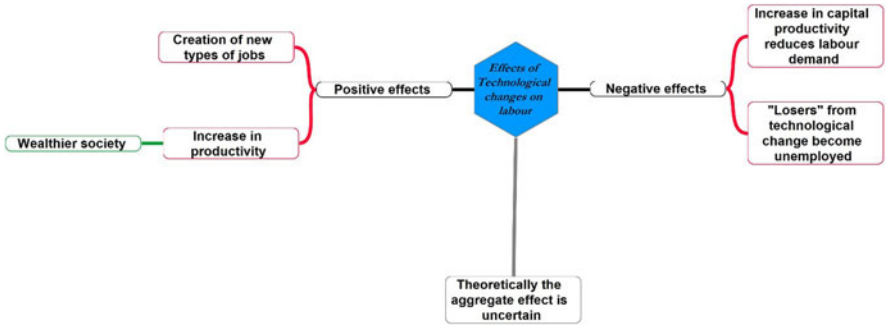

Figure 1. Technological change and labour markets.

than less as our technical knowledge increases. Innovation brings higher productivity to the economy (Autor *et al.* 2022). New technologies will not only allow us to produce more with less but will also create new kinds of professions that are complementary to the new technologies and that we could have never imagined would come to exist (see Acemoglu and Restrepo 2019; Autor and Salomons 2019). Several empirical contributions using micro-level data suggest that innovation creates new jobs by increasing the demand for labour in the market due to the introduction of new products and processes. Piva and Vivarelli (2005) show that both product and process innovation increased employment in a sample of Italian manufacturing firms, over the 1992–1997 period. Other studies (Greenhalgh *et al.* 2001; Bogliacino *et al.* 2012) show that investment in R&D creates jobs, especially in the high-tech sectors. A more recent study (Damioili *et al.* 2023) presents empirical evidence that the use of artificial intelligence patents increases total employment across European firms from manufacturing and services sectors.

Expressed in very coarse terms, the debate seems to be as follows (see Figure 1): (1) the current wave of technological change, much like prior ones, is labour saving; (2) this is likely to induce technological unemployment in the sectors where the changes are initially deployed or in neighbouring sectors that are more directly connected to those where innovations are introduced; (3) given that some displacement is likely to occur in specific sectors, in the short run there are likely to be winners and losers from technical change; (4) however, such technical improvements will also determine higher overall productivity in the economy as a whole, creating a wealthier society, and the development of forms of employment that were not easy to anticipate before those innovations in production were introduced; and (5) notwithstanding the above, the overall aggregate effect on employment is theoretically contested, given these effects of opposite sign.

At the highest level of abstraction, what is striking is how narrow this debate turns out to be upon reflection. To begin with, the discussion seems prevalently (with the partial exception of neo-Marxian perspectives) focused on the short to medium term, namely, on what we might call the 'transition phase' between two equilibria in the labour market (i.e. the periods before and after the diffusion of a given technological change). To the extent that longer timespans are taken into account, most contributors either focus on the allegedly revolutionary nature of the

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

specific technological changes that are being currently developed (we can call this the 'this time is different' argument), or limit themselves to pointing out that if the historical record is our best guide to our futures, we should not expect to see drastic reductions in the amount of work being performed by human beings (we can call this the 'learning from history' argument). No convincing structural reason is offered to believe why either the 'this time is different' argument or the 'learning from history' argument should eventually carry the day.

Second, the debate seems to be centred on *production*. Taken to its extreme consequences, one of the basic assumptions underlying the current discussion seems to be that if we were able to produce everything more cheaply without human labour, then the latter would not be employed. This assumption is relatively more difficult to detect, as it is unlikely that any technological improvement, however disruptive, could lead to a complete and generalized substitution of capital for labour across the entire span of economic activities that characterize a modern society. Yet the logic of the debate clearly hinges on this kind of axiom. Those who see the nearing of radical technological unemployment explicitly believe as much; while those who disagree with this prediction simply deny that a complete and generalized substitution of capital for labour is possible given the tendency of technical innovations to create new tasks that require human input. Once again, however, we are entitled to ask why that should be so. Whether or not a given scenario is empirically likely to occur, it is certainly possible to entertain the theoretical possibility that a set of innovations could be so radical, and so widespread, that employing only capital would be a cheaper way of producing everything we now produce (a point that will be further explored in section 3). It is also entirely theoretically possible to imagine that even things we do not currently produce, but which would be produced *as a result of a technological shock*, could be produced more cheaply without the contribution of human labour. None of this, however, *necessarily entails* that no human labour would be employed or that people would cease to work. The main reason behind this limitation, we believe, is that exclusive concentration on production implies that the debate is basically silent about consumption decisions. Put another way, what seems to be missing from the picture is some account of the structure of consumption decisions in a modern society and how those decisions would be likely to evolve over time in the context of radical changes in production technologies.

Can we overcome the two limitations of the current debate we have just outlined? Yes, so long as we take into account one of the main drivers of consumption choices in modern affluent societies: the concern for social status (see Figure 2). We may say that, over the long term, one of the endogenous effects of technological change on the structure of consumer preferences is to *shift* the object of status driven consumption. As goods that are capital intensive in production become increasingly cheap, they also become less important as a visible sign of social standing. In turn, this should lead consumers concerned with their social rank to prefer versions of goods and services that contain a relatively higher proportion of human labour as an input. Stated differently, we might conjecture that in the presence of a radical technological shock that would dramatically increase productivity across the board (that is, in all sectors), the cost of most goods and services that are capital intensive in production would fall and thus would become more affordable than before.

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

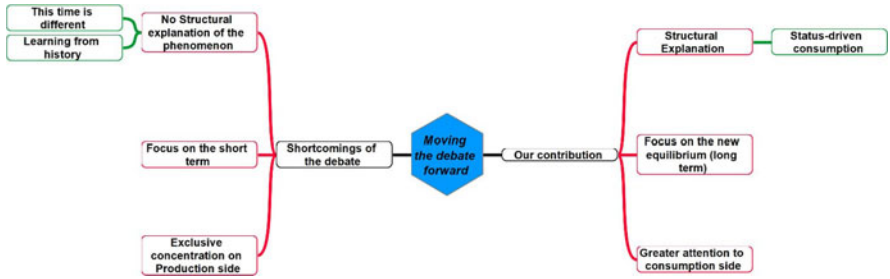

Figure 2. The structure of the argument.

However, since, as we will argue in greater detail below, consumption in affluent societies is often dictated by a concern for relative standing, this suggests that goods which become increasingly affordable would cease to be useful as socially visible signs of status. And this implies that, keeping the desire for status as a motivational basis for consumption constant, the goods that are demanded to act on such desire would be those that contain one of the few remaining scarce resources, namely, human time. Time can indeed be seen as the ultimate economic resource; it has also been suggested that 'the root question in Economics concerns the choice of how to spend time' (Klein 2007: 1). Human time employed in the production of goods and services is however nothing short of labour or work as we currently define it in standard economic models.

3. Consumption Choices and the Importance of Status

In this section we explain how status and consumption are related, and illustrate how, given the nature of the link between status and consumption, the latter tends to change when societies become richer. We will start by defining status, then explore its enduring (and far from irrational) significance to human beings, and finally illustrate three further features of the concept of status that help us understand its importance to the structure of consumption choices in the context of a society that gradually becomes more prosperous.

Following Heath (2022: 106) status is 'an informally maintained system of ranking, or of dominance, based on invidious comparison between individuals'. As Heath goes on to argue, a concern for status in human societies is deep-seated and can be seen as a remnant of archaic dominance instincts that persist to this day within the informal social sphere (2022: 108). In other words, given what we know about human nature and about the lineage of the species, it is hard to believe that a concern for relative standing will not continue to play a part in the human motivational make-up.

That people continue to care about status even in modern societies, where status hierarchies have been largely superseded in formal legal arrangements, is attested by a wealth of social-scientific and theoretical evidence. For purely illustrative purposes, consider the following. One of the most stable findings in social psychology is that individuals care about the status they have within different social groups to which they belong, and that their well-being is affected by it; the desire for

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

status is a fundamental human motive (see Anderson and Kilduff 2009; Fiske 2010; Anderson *et al.* 2012, 2015; Von Rueden 2014; Neel *et al.* 2016; Maner 2017; Ridgeway 2019; Redhead and Power 2022). The study by Anderson *et al.* (2015) is particularly noteworthy as it is widely considered to be the most extensive review of the empirical literature in recent years. The study is also relevant because it operationalizes the idea of a 'fundamental human motive'. An aspect of human motivation is fundamental if: (a) the 'attainment of its associated goals not only affects temporary psychological functioning but also shapes longer term psychological adjustment, well-being, and health' (2015: 577); (b) it induces 'a wide range of goal-directed behaviour designed to satisfy its associated aims across different social contexts' (2015: 578); (c) it is not derivable from other motivational bases and 'serves as an end goal, or a reward or punishment in and of itself' (2015: 578); and (d) it is universally observable, that is, 'observed across individuals that differ in culture, age, gender, or personality' (2015: 578). Starting from these four features of a fundamental human motive the review proceeds by developing a testable hypothesis pertaining to nine domains, namely, subjective well-being, self-esteem, mental and physical health, vigilant monitoring of status, goal-directed behaviour, preferences, reactivity to status threat, derivativeness and universality. Their conclusion is that the review of the empirical evidence supports the idea that status is a fundamental human motive.

Similarly, consider two of the main explanations of the relationship between income and happiness. The first is the so-called reference-income hypothesis, or the idea that 'individuals care about how their income compares with the norm, or reference income, of a socially constructed comparison group' (Boyce *et al.* 2010: 471). The second is the so-called rank-income hypothesis, or the idea that 'people gain utility from occupying a higher ranked position within an income distribution rather than from either absolute income or their position relative to a reference wage' (Boyce *et al.* 2010: 471–472). Both hypotheses have a clear comparative element, and both consider (different) interpretations of relative standing to be central. A concern for relative standing has also recently been shown to be important for spending and saving decisions (see Frank *et al.* 2014). Building on Duesenberry's (1949) relative income hypothesis, Frank, Levine and Dijk reject the standard picture of spending and saving behaviour provided by Friedman (i.e. the permanent income hypothesis). They use the idea of an 'expenditure cascade' 'to describe a process whereby increased expenditure by some people leads others just below them on the income scale to spend more as well, in turn leading others just below the second group to spend more, and so on' (2014: 57). Thus, it appears that status comparisons seem to be important for how people fare (and behave) individually. *Mutatis mutandis*, consider the role of status for how people live and act together collectively. There is a growing sociological literature on how status is one of the key concepts in the definition and understanding of social stratification (see Ridgeway 2014). Status may act as a stabilizer for other traditional sources of social stratification such as, in the classical Weberian classification, power and resources. But it can also act as an independent causal factor in the creation of social inequalities (Acemoglu and Johnson 2023). In addition, consider the link between status and political behaviour. As recent evidence suggests, a concern for relative standing within a group may lead voters to opt for policies that have real material costs to themselves and to others (McClendon 2018). The list of

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

findings could go on, but our purpose here is not to offer the reader conclusive evidence to the effect that people care about their relative standing; rather, the point, given the space available in this paper, is to show that an argument that assumes the significance of this motivation is far from implausible.

It is important to highlight why people still care about social status quite apart from the fact that the concern seems hardwired into the make-up of the species and that it continues to affect our choices in a host of social domains. Status worries are often portrayed as necessarily based on negative moral emotions such as envy or linked to the desire to exercise discursive power over others (see Acemoglu and Johnson 2023: Ch. 3) but need not be. To begin with, note that the social psychology of envy is more complex than one might initially think, and portraying it as a purely antisocial emotion is simplistic (see Protasi 2022). In addition, there is a clear sense that a concern for status can be attributed to a perfectly legitimate worry pertaining to how one's life prospects are affected by the informal social system of ranking in society. In this picture, the concern for status may be the result of a largely defensive posture in the context of a prisoner dilemma (see Heath 2006). To illustrate, if the quality of the public schools my children will attend depends on the price of the house I buy, then, outspending or at least matching the expenditures of others in my income bracket is emphatically not irrational, for it will clearly affect the opportunities my children will have in life (Frank *et al.* 2014). More broadly, as Heath (2022) argues, it seems reasonable to assume that people care about status for understandable reasons since there is good evidence for the general finding that 'high-status individuals simply get treated better by others, and in turn demand better treatment, which makes every aspect of their lives go better' (2022: 107). It is thus far from implausible, irrational or obviously normatively inappropriate, for people to be attentive to such hierarchies.

Moving forward, note that status as we have defined it above has three properties that will be relevant to our discussion in section 3 (see Figure 3). The first is that status is non-fungible, something that, as we shall see, helps us understand why status tends to influence consumption decisions (call this status property 1). The second is that status is intrinsically positional (call this status property 2). This has several implications, one of which is that we cannot improve the status of an agent without simultaneously lowering the status of some other agents and, relatedly, that a *general* increase in the material prosperity of a society has no discernible effects on what is, simply put, a ranking system. The third is that status concerns, and the consumption behaviour they engender, tend to be 'worsened', or 'heightened', by the process of economic growth (call this status property 3).

Let us begin by expanding on status property 1. As stated in the previous paragraph, status is non-fungible. Status cannot be directly purchased and is instead conferred by society as a result of actions that are *socially visible* (see Frank 1985; Heffetz and Frank 2011). One implication of this, and a point that is crucial for our argument, is that status concerns have a clear and well-documented tendency to bleed into consumption behaviour (Frank 1985). Once again, in Heath's words:

> One major problem caused by status hierarchy ... is that our quest for status does not remain confined to the realm of personal behaviour, but tends to bleed over into other areas of social life, so that other goods become recruited

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

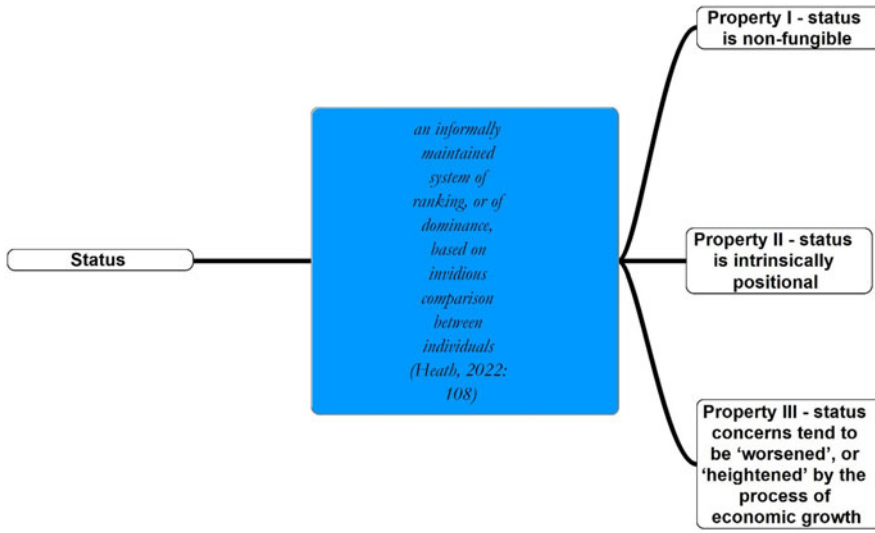

Figure 3. Status and its properties.

> to serve in the battle for increased status. One consequence of human cultural plasticity is that almost anything ... can be transformed into a status signal. Most obviously, the quest for status colonizes the sphere of material consumption, so that people begin to care for goods more for the status they confer than for their material properties. (Heath 2022: 124)

This phenomenon was clearly captured by the American economist and social critic Thorstein Veblen in *The Theory of the Leisure Class* (1899). As Veblen noted, over time, the landed aristocracies' desire for conspicuous leisure was gradually replaced, with the advent and rise of urban bourgeoisies in Western countries, by a desire for conspicuous consumption. Explained in brief, conspicuous consumption refers to the idea that a consumption decision has expressive character. The utility one derives from conspicuously consuming a given good (or service) is not principally located in the relationship between oneself and the good (i.e. the material properties of the good, or service), but in the relationship between oneself and others that possessing the good (or using the service) in question allows one to attest. As an example of conspicuous consumption consider the decision to buy a pair of very expensive shoes that clearly display their brand. The Prada sneaker 'Downtown' currently retails for €870 in European markets. The sneaker has no discernible qualities over and above the fact that it visibly displays the Prada logo on its sides and on the shoe tongue. People who acquire the shoe could clearly acquire a pair of sneakers of comparable quality, and with exactly the same functional properties, for a fraction of the price, yet there is no evidence that the sale of Prada shoes is on the brink of collapsing to zero.

Let us move on to status property 2. Status competition has the structure of a zero-sum game. This straightforwardly implies, as suggested above, that improving

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

an agent's status means worsening the status of some other agents. A less obvious implication is that, to the extent that people intend to participate in a status competition, such competition will provide motivational bases for consumption that make one's 'needs' (a term that for now will serve as a placeholder for what motivates consumption) non-satiable. In Veblen's words:

> In the nature of the case, the desire for wealth can scarcely be satiated in any individual instance, and evidently a satiation of the average or general desire for wealth is out of the question. However widely, or equally, or 'fairly,' it may be distributed, no general increase of the community's wealth can make any approach to satiating this need, the ground of which is the desire of every one to excel every one else in the accumulation of goods. If, as is sometimes assumed, the incentive to accumulation were the want of subsistence or of physical comfort, then the aggregate economic wants of a community might conceivably be satisfied at some point in the advance of industrial efficiency; but since the struggle is substantially a race for reputability on the basis of an invidious comparison, no approach to a definitive attainment is possible. (Veblen 1899: 32)

The logic of this conclusion is relatively simple, but we believe it is worth expanding on. If my goal is to gain a higher ranking in a status hierarchy, and if I am likely to recruit my consumption choices to signal my status, then acquiring more goods and services will make sense to me only to the extent that such goods and services are conducive to a higher place in the status hierarchy. The material properties of the goods and services acquired are, at the limit, irrelevant. By the same token, however, other people are likely to behave in exactly the same way. If a sufficiently large number of them does, then the original purchase dictated by a status concern will become irrelevant given what motivated it in the first place. And it is thus likely to be the case that I will be pushed to acquire a different set of goods or services that would allow me to reassert my relative standing in society. The process can go on indefinitely, making my wish to acquire goods and services non-satiable. In less abstract terms, think of the often-lambasted social phenomenon of consumerism: when basic needs are fulfilled, human beings show no tendency to feel satisfied, and instead seek the fulfilment of new, different 'needs'.

Finally, consider status property 3, namely, the relationship between status-motivated economic behaviour and the process of economic growth. It has long been observed that as societies become wealthier, conspicuous consumption becomes more pervasive. One way to capture this kind of dynamic is to introduce the idea of so-called positional goods, and to think about the evolution of the relative price of such goods as the general level of prosperity of a social system gradually increases. As Hirsch (2005) argued, for social or other reasons, the supply of some goods is inherently scarce, and this implies that even in a wealthier society not everyone can obtain them. More generally, if positional goods are goods whose supply is highly inelastic (Claassen 2008), then relative pecuniary strength is likely to be the determining factor in deciding who acquires them, and generalized increases in prosperity are unlikely to affect this dynamic. As an extreme case,

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

consider Van Gogh paintings.[2] Their supply is perfectly inelastic, since there is only a fixed number of such paintings and no more will be produced. To own a Van Gogh is, however, completely orthogonal to the process of generalized economic growth, since everyone becoming richer will not affect the number of Van Gogh paintings available for purchase, or the number of people able to outbid others to acquire them. Yet owning a Van Gogh is clearly an effective means of signaling one's status.

What Hirsch further observed is that as economic growth proceeds, the number of goods that have positional aspects increases precisely because people's material wants are increasingly accessible; as society becomes more prosperous, consumers' ability to acquire positional goods remains largely unaffected. The reasons for this phenomenon are complex, but the plainest way to understand the dynamic is to note that a general increase in material prosperity simply translates into greater abundance (and thus affordability) of goods and services which are not positional and whose supply can thus be expanded. The relative price of positional goods and services will thus have a tendency to increase compared with non-positional ones as economic growth unfolds.

Two comments are worth making at this juncture. The first concerns the overall nature of Veblen's and Hirsch's arguments. For the most part, these arguments can be portrayed as forms of internal criticisms of the relatively straightforward economic idea that a generalized increase in the wealth of a society can lead to higher levels of collective welfare. Expressed informally, the point is that as societies become wealthier, people do not magically see their 'desires' disappear in the bounty of material goods and services that they can acquire (see Heath 2002). Rather, the mix of things they wish to acquire changes. Here it is important to note the relevance of this point to our general argument in the paper. As stated at the end of section 1, an interesting and underexplored question in current debates about technological change is what the long-run effects of such an exogenous shock would be on the structure of consumption decisions. One way to understand a technological shock is simply to see it as a radical and generalized increase in productivity leading to higher levels of material prosperity in society. It is thus far from implausible to see a connection between the evolution of the positional economy and innovation. If innovation leads to higher productivity and generalized growth it will also likely increase the relative size of the positional economy.

The second comment relates to how we are to interpret this overall message. A standard way to portray it is relatively pessimistic and is simply that the search for higher levels of collective wealth is bound to disappoint and is also bound to lead to the misallocation of our time and efforts (Frank 2010). The interesting aspect of this pessimistic diagnosis is that it is sound only because we continue to assume that a

[2]We should emphasize that we are taking for granted that the goods in question are in high demand, not simply 'rare', otherwise the distinction between a Van Gogh painting and the paintings of any dead artist would be undetectable. What explains the fact that Van Gogh paintings are in great demand? It would be tempting to believe that the reason is linked to the inherent properties of the good in question, but, within the framework of mainstream economic theory, demand is a function of individual preferences. While we can observe the aggregate effects of such preferences on the market, we are simply unable to say why any individual consumer likes a Van Gogh painting. We would like to thank one of the anonymous referees for raising this point.

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

generalized attempt to acquire positional goods, or a generalized tendency to give increasing importance to conspicuous consumption, would take place in the context of a society that is emphatically not beyond scarcity. This is, by and large, a very reasonable assumption considering all we know about existing forms of production and technology, but one that it would be intriguing to relax, especially if the concern at hand is with forms of technological change that would, in the long term, radically alter our ability, as a society, to produce goods and services. In a society that is, or at least is on the way to becoming, beyond scarcity, Hirsch's and Veblen's relatively pessimistic forms of social criticism might have more positive implications. For at the core of their views is the idea that human wants and desires are deeply affected by the wants and desires of other people. This relational character of wants and desires suggests, in turn, that an important motive for our consumption choices, and thus for the efforts that we shall need to expend to finance them, is unlikely to ever disappear. And, we believe, this state of affairs might have positive implications for the future of employment in the presence of radical technical innovations in production. This is what we turn to in the next section of the paper.

4. Status, and Work, in a Society Beyond Scarcity

To clarify the nature of our argument, we will proceed via a thought experiment. Let us assume that technological advancements will in the future radically reduce the need for human labour (something for which there is, to date, scant empirical evidence), and let us gradually take this argument to its extreme consequences. In other terms, let us assume that the MRTS (K, L) becomes infinite. This implies some unrealistic economic assumptions, such as perfect substitutability between capital and labour, so that firms can replace one input with the other indefinitely without any impact on their production output; linear isoquants, indicating a straight-line relationship between the inputs; and hence an allocation of productive resources solely based on cost considerations. However implausible these assumptions are, they allow us to model the problem at hand in a clearer way.

In more mundane terms, let us go a step further, and assume that a futuristic technology will be able to produce all goods and services at no cost. Imagine that someone invents the kind of machine we nowadays see in science fiction movies and call this machine the 'all you can want machine' (AYCWM). Let us further imagine that we can break down this scenario into two parts and call them phase 1 and phase 2 (see Figure 4). To begin with, in phase 1, we can assume that the AYCWM is not generally available. In phase 2, meanwhile, we can postulate a widespread diffusion of the AYCWM among consumers; in fact, among all consumers. Perhaps the AYCWM can replicate itself, or perhaps a benevolent government would give the machine for free to any citizen who requests it. Phases 1 and 2 are, simply put, increasingly extreme versions of what a radical technological change could look like.

What would happen in phase 1? One way to model this, admittedly peculiar, transition phase is through the lens of the Baumol effect. Recall that the Baumol (1967) effect examines the enduring economic ramifications stemming from differential rates of productivity growth across sectors. After first explaining rising costs in the arts (Baumol and Bowen 1965), Baumol (1967) classified the economy

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

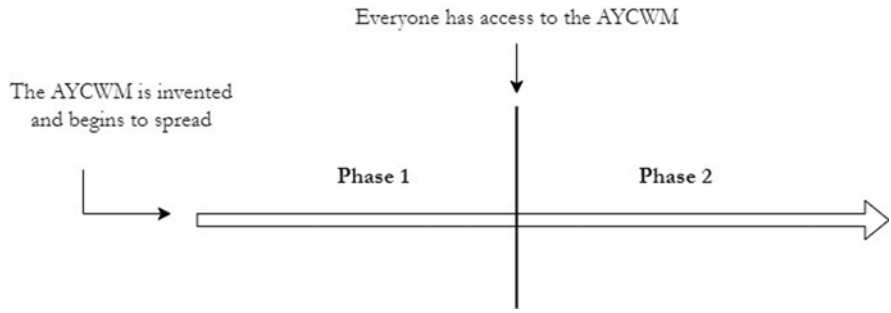

Figure 4. Timeline of the thought experiment.

into a 'progressive' and a 'non-progressive' sector, with the former experiencing higher labour productivity growth over the long term. In this model, the 'non-progressive' sector (e.g. services) is contrasted with the 'progressive' sector (e.g. manufacturing or industry). Baumol argued that wages would increase in both sectors at a pace dictated by the progressive sector's productivity growth, leading to a structural shift where services become increasingly costly, a phenomenon that Vandermeulen (1968) named 'Baumol's disease'.

In other words, the Baumol cost disease posits that in sectors where productivity gains are comparatively more difficult to achieve costs tend to rise over time. This is because wages typically increase in line with productivity gains in other sectors, even if the output per worker in relatively stagnant sectors remains constant. As a result, the relative cost of labour-intensive production increases compared to capital intensive sectors, leading to a shift in resources toward these less productive sectors. This phenomenon is particularly evident in sectors where labour-intensive processes and the personalized nature of services limit opportunities for the substitution of labour for capital, most notably medical care, education and the arts.

Note, however, that at least part of the cost increases in stagnant sectors predicted by the Baumol effect are not explained by wage dynamics. Instead, as Baumol and many others have observed, there is a clear demand component to the explanation as expenditure shares tend to change when societies become richer (see Helland and Tabarrok 2019). For example, as the price of education has skyrocketed in the US over the past few decades, Americans have continued to steadily increase the expenditure share devoted to educational services. In part, this is because Americans have become wealthier as a result of productivity growth led by the dynamic sectors of the economy, and hence can satisfy many of their material needs with a lower share of their income. Yet it is also the case that what is produced by sectors that have witnessed higher productivity growth, such as manufacturing, or agriculture, is subject to strong diminishing marginal utility, while products supplied by some of the stagnant sectors do not seem to currently face this problem.

In phase 1, as the AYCWM gradually becomes available to an increasing number of people, the Baumol cost disease spreads to more and more sectors of the economy. Given differences in preferences among consumers, it is entirely plausible that the AYCWM would be used by different people to produce different bundles of commodities. The overall aggregate effect would be equivalent to a spread of the

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

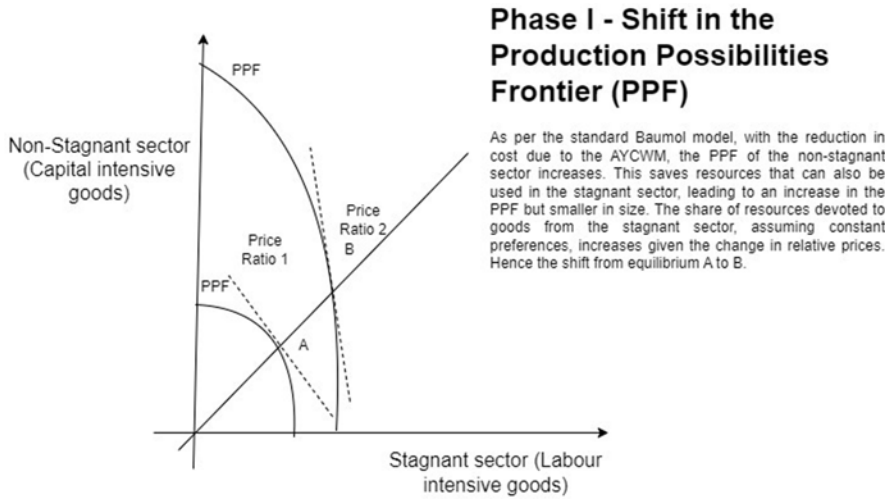

Figure 5. Phase 1 and the Baumol effect.

Baumol cost disease to an increasing number of sectors, given the reduction to 0 of the cost of some commodities, from the most popular, at the beginning, to less popular ones once the AYCWM spreads among consumers. Hence, sectors that produce goods and services that are popular among consumers would be the first to witness productivity gains, while sectors that produce goods and services that are relatively less popular among consumers would be affected by the Baumol cost disease (see Figure 5, adapted from Helland and Tabarrok 2019: 38). In this phase 1 scenario, then, it is entirely possible that labour will become more expensive, and thus that it will potentially be in lower demand.

Let us then move forward to phase 2. Recall that, in phase 2, the AYCWM is available to all consumers. The predictable outcome would be that the price of all goods and services, now obtainable by everyone via the use of the AYCWM, would drop to 0, since anyone would be able to produce any good or any service just by asking the machine for it. Considering the classic model of supply and demand used to determine the market price and the quantity offered in a market, the mere existence of such a technology would imply a corner solution, and the demand curve for all goods and services would overlap with the horizontal axis. Such a solution would not justify the existence of producers, since, with a reserve price of 0 for customers, and an infinite available supply of all goods and services, there would be no economic justification for the existence of firms making efforts to bring to market goods and services that people can produce for themselves at no cost.

Would phase 2 result in a jobless society? We believe not. In the hypothetical scenario that has been described, one in which a technological shock has created an unlimited supply of all goods and services free of charge, these would become non-economic goods, i.e. goods, such as sand in a desert, for which the supply always exceeds demand. Yet, if the cost of production of all goods and services decreased to 0 thanks to technological change, then those goods and services would no longer be able to offer a meaningful way to participate in a status competition, as they would

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

become available to all people free of charge. Going back to the example of the Prada sneakers we offered in section 2 above, in phase 2 no one would want or be able to signal their status by wearing a pair of shoes that could be perfectly replicated by everyone else at zero cost. Assuming that consumption choices will remain an important context in which status-related behaviour will be made socially visible, it seems natural to believe that as something stops being scarce, consumption choices motivated by status concerns will be diverted to what is likely to remain scarce even within the confines of our thought experiment. There is indeed at least one thing that will always be in relatively short supply. Time is a scarce good: each human being is equipped with 24 hours of it per day, and though we may not know how many hours remain until the ends of our lives, we know that they are limited. Hence, time is and always will be scarce, and its use has an economic value; a value that would exist regardless of the radical technological shock we have imagined.

In our view, the implication would be that as the cost of the *standard versions* of goods and most services drops to zero thanks to the AYCWM, people would be increasingly attracted to the consumption of versions of goods and services that contain comparatively greater amounts of 'human time', that is, labour. Put another way, in a future where the AYCWM can produce all goods and (most) services more cheaply without the contribution of human labour, and assuming that people are still motivated by a desire for status, the predictable implication is that their consumption choices would be oriented to forms of production that do include some human input. This input would, essentially, be an input made of one of the only scarce resources that would remain available in the context we have described in our thought experiment, and which can thus signal status.

In such a scenario, productivity gains would spread to the whole economy and, superficially, this might suggest the irrelevance of the Baumol cost disease. Instead, the creation of a labour market driven by conspicuous consumption creates a 'stagnant sector', namely, the production of all those versions of commodities that still contain human labour and which thus can be used as visible signs of social standing. The implication would be a level of wages in this 'sector' above whatever would be justified by workers' productivity. In the context of phase 2, then, the Baumol effect would imply the appreciation of the cost of labour dictated by two simultaneous and overlapping effects: (a) the zero production costs of the commodities that could be obtained through the AYCWM; (b) the greater availability of resources to devote to conspicuous consumption. Both these effects would jointly increase the demand for versions of goods and services that contain human labour as a means of participating in status competition. The Baumol cost disease would thus become endemic. In conclusion, in phase 2 there is at least one kind of commodity that can realistically play a role in status-driven consumption, namely, goods and services created by using human time.[3]

[3]Note that we are careful to say that commodities containing labour as an input are, strictly speaking, only 'one' way to signal status through consumption choices. To begin with, as our discussion of Hirsch's work in section 2 clarifies, scarcities created by the impossibility of expanding supply may have alternative sources. Even in a future where everyone owns the AYCWM, homes overlooking Central Park would realistically not increase in number, our norms and institutions may curtail the production and distribution of specific commodities, and so on. Moreover, some kinds of work will likely remain mostly unaffected by the AYCWM; all those where the added value is provided by 'human performers'. For instance, professional

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

So far, our reasoning has been purely conjectural; hence, it seems useful to note that similar dynamics to the one we are sketching here already do occur in our current, and far less extreme, predicament. For example, think of embroidered initials on shirts, or artisanal wood crafts, or hand-made furniture or dresses. The fact that machines can make all these things more cheaply than the average specialized human has not decreased the value of a hand-made version of these goods. On the contrary, it transformed their supply into the supply of luxury, or highly sought after, versions of the goods in question (Droege 2021): goods that are widely known to have an increased perceived value in the eyes of customers. The increased value placed on such goods by consumers is, furthermore, often unrelated to their technical specifications or characteristics; indeed, small imperfections in handmade goods are often considered a sign of the human touch, and of their uniqueness, both of which clearly contribute to making them especially valued. A striking form of (anecdotal) evidence for this contention is that many shirtmakers, such as the UK company Charles Tyrwhitt (custhelp.com, URL accessed 09/10/2024), offer customers the option of adding embroidered initials on shirts that are not handmade to make them look as if they were.

We might of course ask what would happen if our thought experiment were made even more radical and we assumed that the AYCWM could extend human lives indefinitely (perhaps replicating cells and organs) or even replicate human beings altogether. This scenario raises two analytically distinct questions: (a) the diachronic impact on our model of a potentially infinite supply of a commodity, human time; and (b) the synchronic impact (i.e. at every point in time) on our model of an infinite supply of the same commodity. In response to (a), note that even if each human being could be equipped with a potentially infinite supply of time, the concept of time preference, and relatedly that of discount factors, would still apply. In the first section of his story 'The Aleph', Jorge Luis Borges famously imagined the book's protagonist visiting a city where human beings have discovered the source of eternal life. In a remarkable passage, the author imagines that one of these 'Immortals' stopped moving altogether, because the infinite supply of time at his disposal simply meant that there was no reason to do something now as opposed to later. We disagree. Or, at the very least, we believe that the idea of immortality proposed by Borges makes an ambiguous distinction between the possibility of living forever and the knowledge that one will live forever. Both scenarios contemplate a potentially infinite supply of human time, but only the second would basically remove uncertainty from the picture. To the extent that uncertainty remains a factor, then, human beings may still prefer to do or have something today rather than tomorrow. Their supply of time could be altered, for example by accidents of some kind, or they might face changing external circumstances (there may be infinite time left for you to pay a visit to Venice, but Venice might sink rather than wait for you indefinitely). Second, when it comes to point (b), there is a clear sense in which, leaving aside questions related to personal identity, the

athletes would be very difficult to replace by technological improvements since it is precisely their feats that attract public interest; they are, inter alia, examples of peak *human* achievement and competition. We might invent robots that are stronger, faster, and more accurate than Messi or Djokovic, but few people would consider such robots to be particularly interesting.

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

argument presented here would not be valid if the AYCWM was able to replicate human beings. For, if the idea of opportunity cost did not apply to human time, this would then suggest that the latter could not be scarce, and if that is true, then it could not act as a way of signalling status. The question, however, is what this implies for the model itself. For the model *assumes* that at least something must remain scarce, and, if literally everything is in abundant supply at every point in time, then the model is unlikely to work as intended.

Let us further clarify our argument by making the connection between human time and work more explicit. In the standard neoclassical model (Borjas 2016; Nikolova and Cnossen 2020), the so-called labour-leisure choice model, people wish to maximize their welfare by adopting an optimal mix of consumption and leisure time. Our consumption, however, is simply the production of other people. And, if they are to produce for us, they need to be compensated. If our consumption is oriented to goods and services that contain what, in the thought experiment, is one of the only remaining scarce resources, namely time, then, much like in our current predicament, we need to find a way to compensate people for the time they employ for adding a scarce input into the production process. However, if compensation is to be meaningful, it has to have some value for those who are compensated. In a world where standard versions of goods and services are not economic goods, one of the few ways we can compensate people for their time is to supply them with our own time. Note that this scenario could also be modelled as one involving the disappearance of capital (K) as a production factor. This is not dissimilar to the 'disappearance' of land (L), one of the three factors in Ricardo's original model, as a relevant input in most modern presentations of the production function. Societal changes brought about by the AYCWM would lead to a state of affairs where capital is so abundant as to be irrelevant, in much the same way that the technical developments that brought about the Industrial Revolution made land so abundant that it stopped featuring in mainstream models.

In fact, we could go one step further. Not only would work fail to disappear in light of the extraordinary technological shock we have imagined, but money and labour markets would also likely continue to exist. If human beings have desires that only other human beings can satisfy, this simple fact itself will create, in a not dissimilar manner to what already happens nowadays, the need for a place where the demand for these desires can be met. This place is a market: somewhere where humans satisfy other people's wants in order to satisfy their own in turn. In addition, relaxing the assumptions of the simplest versions of the labour-leisure choice model, and thus taking into account the fact that different people have different skills and talents, it would be a tall and very complex order for this market to function without the use of money. The familiar problems created by the so-called double coincidence of wants, and the establishment of relative prices for different kinds of work, would loom large in the absence of a medium of exchange. A technology would also be required to store value, and act as a form of 'memory' of past transactions (Kocherlakota 1998). In other words, our conclusion does not substantially differ from the usual interpretation of the labour-leisure model in which a consumer chooses an optimal trade-off between leisure and work (Borjas 2016). If one assumes diminishing marginal returns on the utility derived from leisure and assumes that the possibility of working still exists given the progressive

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

increase in the value of man-made goods and services, the solution will imply using some of our time to work in order to finance our consumption.

Given the features of the informal model we have presented, two normative questions loom large. To begin with, it is worth asking what its implications would be for inequality. To fix ideas, let us imagine that we find ourselves in what we have called the second phase of the thought experiment, namely, the long-run equilibrium when the AYCWM is available to all. Clearly, in this set of circumstances, some inequalities are bound to disappear. For example, inequalities connected to differences in the holdings of physical capital would be less relevant if the production of capital goods could be obtained at no cost. At the same time, however, some inequalities are bound to remain in place. To see why, note that while we assume that time becomes the only scarce commodity, there is no reason to believe that everyone's time will be valued the same. Much will depend on which goods and services that contain human time are comparatively more sought after by consumers and, relatedly, the differences in the skills that people have.

Similarly, we can ask what the implications of the model would be in light of the fact that different classes of agents tend to have different amounts of spare time at their disposal. The question is too complex to answer in general terms, but we might address what many would see as a central illustration of the problem, namely, the gendered division of household labour. To begin with assume that household work can be divided between 'chores' and 'care'. Chores can be defined as activities where the value of the outcome is largely unaffected by the participation of a household member (e.g. cleaning), whereas care can be defined as those activities where the value of the outcome is in part determined by the process through which the outcome is obtained (e.g. childrearing). The distinction between the two is not clear-cut (some people take pride in cleaning their homes, and we regularly ask strangers to care for our children), but that need not detain us here. Historically, women have tended to carry much of the burden for both 'chores' and 'care'. However, technological progress has clearly affected the 'chores' element. Indeed, there is a well-known connection between the development of home appliances that replace human labour (think of the washing machine) and women's participation in the labour force (Albanesi and Olivetti 2007; Voicu *et al.* 2009). The introduction of the AYCWM would likely deepen this kind of trend, for it would allow households to outsource, so to speak, all 'chore' activities at negligible cost. So far as 'care' activities are concerned, the implications are more complex. The fact that women have historically done much of the care work that takes place within households is itself the result of several factors. For example, cultural expectations and discriminatory practices have played a large role, but so too have economic incentives. In any case, we are inclined to believe that, other things being equal, the AYCWM would put pressure on the economic incentives for a gendered division of care work, because it would make apparent that the choice between care work and paid work is indeed a choice.

Second, what are the implications of the model for the quality of work, in addition to its availability? Might it be the case that people find work that is only required to finance status driven consumption motivationally dispiriting?[4] We shall

[4]Might we go as far as imagining that in a world where status is the main driver for consumption decisions, and human time one of the only remaining scarce resources, some individuals could be interested

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

assume, following Cohen (2020), that the standard goods of work are the following: (a) compensation allowing for a decent standard of living; (b) stability in tenure; (c) relatively safe working conditions; and (d) the potential for the acquisition of new skills and responsibilities coupled with the avoidance of dull and repetitive tasks. In this picture, the role of the AYCWM could be akin to the role of a well-functioning and generous Welfare State or a relatively high Universal Basic Income; it could improve workers' 'outside option'. That is, it could allow them to be comparatively more selective, thus making the standard goods of work also comparatively easier to obtain.

Would workers have 'good' or 'sound' reasons to work over and above the desire to finance consumption? Cohen notes that 'good jobs' would display additional features such as 'voice', 'pleasure in the work itself' and 'purpose'. Given the nature of our present concerns, we shall focus on 'purpose'. According to Cohen:

> What is essential is that the work is reasonably understood by the person doing it as a worthy expenditure of their time and energy. Because they recognize it as worthy, the motivations for the work are more *autonomous* than with jobs—no matter how good they otherwise are—that strike the person doing the job as lacking a real point. (2020: 10)

Could workers find purpose in their work even in a world where status is the main driver of consumption choices? The answer, we believe, is 'yes'. Salary is only one among the many factors that dictate the optimal choice of employment. Leisure, status and subjective beliefs about which tasks are purposeful will likely affect career paths. In addition, some workers might derive purpose from responding to other people's wants, and the desire for status is clearly an important human want.

It might be objected that there is a distinction between 'needs' and 'wants', and that what is valuable is to respond to other people's needs rather than their wants. As a reply, note that, even assuming that there is a sufficiently clear distinction between 'needs' and 'wants', much of the work performed in a rich country is hard to portray as something that responds to people's needs, at least if those needs are understood in non-comparative terms. Indeed, this is precisely the mark of an affluent society, namely that production is increasingly divorced from a non-comparative notion of human needs. Most people that produce goods and services in a rich country do so for consumers who have more than enough of these already.

in displaying their wealth via 'pure' forms of time consumption (e.g. paying others to sit on a chair)? Theoretically, it is indeed plausible that some consumption decisions could be motivated by the desire to display wealth in a 'pure' or at the very least 'heightened' form by simply blocking any reasonable association between the resources used and the expected goals for which they are normally employed. Think of lighting a cigar with a hundred-dollar bill, or pop singers with large entourages of 'friends' whose main function is to display the singer's ability to command allegiance and respect. Whether or not this would be a more common occurrence in a future where the AYCWM is available to all is hard to say, however, and is likely to depend on the interaction between the structure of consumption decisions and social norms pertaining to the regulation of what might be perceived as wasteful consumption (something that tends to be socially frowned upon and might thus damage, rather than increase, status).

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

5. Conclusion

This article provides an overview of the ongoing discourse regarding the impact of technological advancements on employment dynamics. We contend that a primary limitation of this discourse is its exclusive emphasis on the short run and on production while overlooking the potential effects of innovation on long-run consumption patterns. To address this gap, we present a hypothetical scenario wherein the production of all goods and most services becomes gradually feasible through the materialization of outputs at no cost, rendering them non-economic commodities. In this context, we propose that the absence of material scarcity would not eliminate conspicuous consumption; rather, it would instead shift its object. The human pursuit of social status, a deep-seated behavioural driver, will continue to shape the nature of our consumption choices, and, through such choices, ensure the enduring significance of work to our lives.

The idea that human beings would continue to work even if all their material needs were, as in phase 2, fulfilled at no cost, may sound preposterous. And of course it is entirely possible to imagine, much as Keynes famously wished, that persons would simply stop being driven by economic concerns altogether. Yet, while our reasoning concerning phase 2 is clearly conjectural, here too, much as for phase 1, there is clear evidence that our prediction is far from implausible. To begin with, Keynes himself (1932) was rather sceptical about the idea that more prosperity would simply mean more leisure:

> Yet there is no country and no people, I think, who can look forward to the age of leisure and of abundance without a dread. For we have been trained too long to strive and not to enjoy. It is a fearful problem for the ordinary person, with no special talents, to occupy himself, especially if he no longer has roots in the soil or in custom or in the beloved conventions of a traditional society. To judge from the behaviour and the achievements of the wealthy classes today in any quarter of the world, the outlook is very depressing! For these are, so to speak, our advance guard – those who are spying out the promised land for the rest of us and pitching their camp there. (Keynes 1932: 368)

More importantly, close to one hundred years after Keynes's discontent was put on paper there is no sign whatsoever that the generations that have succeeded him have managed to set aside 'the economic problem' to focus on other forms of pursuits, or that they have stopped recruiting consumption choices to attest their ranking in society as a result of a manyfold increase in the standard of living. After all, no refined sociological analysis is required to see that a substantial number of people in affluent societies continue to work to attest their social standing even if their material needs could be satisfied without doing so (Paris Hilton is a successful entrepreneur), or that conspicuous consumption is rampant even when relatively inexpensive versions of luxury goods and services with comparable characteristics are readily available (the demand for Louis Vuitton bags and Rolex watches does not seem to be in decline), or that social media platforms are replete with displays of status-related consumption and activities (think of personal pictures describing exotic locations being visited, or recently purchased clothes, accessories, phones etc.).

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

One might of course wonder why that is the case. No single reason is likely to provide an exhaustive explanation. One possibility is that the culture of a capitalist society is itself to be blamed, and that social phenomena such as status-driven consumerism merely depend on, to borrow from Marx, an economic superstructure tasked with keeping the current system afloat. We believe our discussion in section 2 of the paper suggests otherwise, but it is instructive to highlight in what way it does so. If the concern for social status is a remnant of dominance instincts that are deeply engrained in the make-up of the species, then different forms of social and economic organization are more appropriately seen as contexts that influence the way in which such instincts are expressed, rather than the source of those instincts. Put another way, while it is entirely plausible to suggest that there is a link between the choice of consumption behaviour as the preferred mode of status signalling and a specific kind of socio-economic structure (i.e. capitalism), there is no reason to believe that the socio-economic structure determines the concern for status in the first place. It is of course an open question whether we should, morally speaking, regret the way in which status concerns tend to be currently expressed in our social world. While we cannot offer a full discussion, we would like to point out that, at least comparatively speaking, 'posturing through consumption' is clearly more desirable than many other ways of establishing a ranking system among human beings in the context of zero-sum competitions. To the extent that the judgment of social and political systems is comparative in nature, consumerism seems preferable to overt conflict.

Despite offering what is, to our knowledge, the first extended discussion of the relationship between status, technological change, and the future of work, the present work is not exempt from limitations. One we would like to emphasize concerns the transition phase to the long-run equilibrium. There are numerous possible paths that could lead to the final equilibrium, particularly with respect to the evolution of wealth distribution. In our current framework, we present only one possible trajectory, without explicitly modelling the assumptions that shape the properties of these transition paths. A more detailed model would be required to capture the full range of dynamics in the transition, making this an area for further research and refinement. Similarly, our study does not address the impact of significant technological shocks on education and training strategies in a rapidly evolving labourSback market. As technology reshapes the landscape of work, it becomes crucial to understand how educational systems and skill-development programmes can be adapted to equip individuals for roles that emphasize human time. A promising avenue for future research thus lies in exploring how educational policies can balance the need for technical proficiency with the cultivation of uniquely human attributes, such as creativity, emotional intelligence and interpersonal skills, which are likely to become increasingly important.

Competing interests. No author perceives any conflict of interest.

Funding. No funding was received in the preparation of this research.

References

Acemoglu D. and S. Johnson 2023. *Power and Progress: Our Thousand-year Struggle Over Technology and Prosperity*. London: Basic Books.

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

Acemoglu D. and P. Restrepo 2019. Automation and new tasks: how technology displaces and reinstates labor. *Journal of Economic Perspectives* **33**, 3–30.

Albanesi S. and C. Olivetti 2007. *Gender Roles and Technological Progress*, No 13179, NBER Working Papers. National Bureau of Economic Research, Inc. https://EconPapers.repec.org/RePEc:nbr:nberwo:13179.

Almeida R., C.H. Leite Corseuil and J. Poole 2017. The impact of digital technologies on routine tasks: do labor policies matter? World Bank Policy Research Working Paper 8187.

Anderson C., J.A.D. Hildreth and L. Howland 2015. Is the desire for status a fundamental human motive? A review of the empirical literature. *Psychological Bulletin* **141**, 574–601.

Anderson C. and G.J. Kilduff 2009. The pursuit of status in social groups. *Current Directions in Psychological Science* **18**, 295–298.

Anderson C., M.W. Kraus, A.D. Galinsky and D. Keltner 2012. The local-ladder effect: social status and subjective well-being. *Psychological Science* **23**, 764–771.

Autor D., D.A. Mindell and E.B. Reynolds 2022. *The Work of the Future: Building Better Jobs in an Age of Intelligent Machines*. Cambridge, MA: MIT Press.

Autor D. and A. Salomons 2019. Is automation labor share–displacing? Productivity growth, employment, and the labor share. *Brookings Papers on Economic Activity*, 1–63.

Baumol W.J. 1967. Macroeconomics of unbalanced growth: the anatomy of urban crisis. *American Economic Review* **57**, 415–426.

Baumol W.J. and W.G. Bowen 1965. On the performing arts: the anatomy of their economic problems. *The American Economic Review* **55**, 495–502.

Bogliacino F., M. Piva and M. Vivarelli 2012. R&D and employment: an application of the LSDVC estimator using European microdata. *Economics Letters* **116**, 56–59.

Borjas G.J. 2016. *Labor Economics*. 7th ed. New York: McGraw Hill Education.

Boyce C.J., G.D.A. Brown and S.C. Moore 2010. Money and happiness: rank of income, not income, affects life satisfaction. *Psychological Science* **21**, 471–475.

Brynjolfsson E. and A. McAfee 2014. *The Second Machine Age. Work, Progress, and Prosperity in a Time of Brilliant Technologies*. New York: W.W. Norton.

Choi D.Y. and J.H. Kang 2019. Introduction: the future of jobs in an increasingly autonomous economy. *Journal of Management Inquiry* **28**, 298–299.

Cholbi M. 2023. Philosophical approaches to work and labor. In *Stanford Encyclopedia of Philosophy (Summer 2023 Edition)*, ed. E.N. Zalta and U. Nodelman. https://plato.stanford.edu/archives/sum2023/entries/work-labor/.

Chwelos P., R. Ramirez, K.L. Kraemer and N.P. Melville 2010. Research note – does technological progress alter the nature of information technology as a production input? New evidence and new results. *Information Systems Research* **21**, 392–408.

Claassen R. 2008. The status struggle: a recognition based interpretation of the positional economy. *Philosophy & Social Criticism* **34**, 1021–1049.

Cohen J. 2020. *Good Jobs*. Cambridge, MA: Massachusetts Institute of Technology. https://workofthefuture-taskforce.mit.edu/research-post/good-jobs/.

Damioli G., V. Van Roy and D. Vertesy 2023. AI technologies and employment: micro evidence from the supply side. *Applied Economic Letters* **30**, 816–821.

Danaher J. 2019. *Automation and Utopia. Human Flourishing in a World without Work*. Cambridge, MA: Harvard University Press.

Droege J. 2021. The handmade effect: a model of conscious shopping in an industrialised economy. *Review of Industrial Organization* **60**, 263–292.

Duesenberry J.S. 1949. *Income, Saving, and the Theory of Consumer Behavior*. London: Verso.

Fiske S.T. 2010. Envy up, scorn down: how comparison divides us. *American Psychologist* **65**, 698–706.

Frank R.H. 1985. The demand for unobservable and other nonpositional goods. *American Economic Review* **75**, 101–116.

Frank R.H. 2010. *Luxury Fever: Weighing the Cost of Excess*. Princeton: Princeton University Press.

Frank R.H., A.S. Levine and O. Dijk 2014. Expenditure cascades. *Review of Behavioral Economics* **1**, 55–73.

Frey C.B. and M.A. Osborne 2017. The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change* **114**, 254–280.

Gorz A. 2010. *Critique of Economic Reason*. London: Verso.

https://doi.org/10.1017/S0266267125000045 Published online by Cambridge University Press

Greenhalgh C., M. Longland and D. Bosworth 2001. Technological activity and employment in a panel of UK firms. *Scottish Journal of Political Economy* **48**, 260–282.
Gunning D. and D.W. Aha 2019. DARPA's explainable artificial intelligence program. *AI Magazine* **40**, 44–58.
Heath J. 2002. Should productivity be a social priority? The review of economic performance and social progress. In *The Review of Economic Performance and Social Progress: Towards a Social Understanding of Productivity, Volume 2*, ed. A. Sharpe, F. St-Hilaire and K. Banting. Centre for the Study of Living Standards; The Institute for Research on Public Policy.
Heath J. 2006. Envy and efficiency. *Revue de Philosophie Économique* **13**, 3–30.
Heath J. 2022. *Cooperation and Social Justice*. Toronto: University of Toronto Press.
Heffetz, O and R.H. Frank 2011. Preferences for status: Evidence and economic implications. In *Handbook of Social Economics*, vol. **1**, 69–91. North-Holland.
Helland E. and A. Tabarrok 2019. *Why are the Prices so Damn High? Health, Education, and the Baumol Effect*. Mercatus Center: George Mason University.
Hirsch F. 2005. *Social Limits to Growth*. London: Routledge.
Honneth A. 2023. *A Normative Theory of Labour*. Suhrkamp: Insel.
Keynes J.M. 1932. Economic possibilities for our grandchildren. In *Essays in Persuasion*, 358–373. New York: Harcourt Brace.
Klein C.C. 2007. *The Economics of Time as a Resource*. Department of Economics and Finance Working Paper Series: August 2007.
Kocherlakota N.R. 1963 & Federal Reserve Bank of Minneapolis. Research Department 1996. *Money is Memory* (Issue 218) [Reports]. Federal Reserve Bank of Minneapolis.
Kocherlakota N.R. 1998. Money is memory. *Journal of Economic Theory* **81**(2), 232–251.
Koh D., R. Santaeulàlia-Llopis and Y. Zheng 2020. Labor share decline and intellectual property products capital. *Econometrica* **88**, 2609–2628.
Maner J.K. 2017. Dominance and prestige: a tale of two hierarchies. *Current Directions in Psychological Science* **26**, 526–531.
Mas-Colell A., M. Whinston and J. Green 1995. *Microeconomic Theory*. Oxford: Oxford University Press.
McClendon G.H. 2018. *Envy in Politics*. Princeton: Princeton University Press.
McGowan K. and S. Geobey 2022. 'Harmful to the commonality': the Luddites, the distributional effects of systems change and the challenge of building a just society. *Social Enterprise Journal* **18**, 306–320.
Neel R., D.T. Kenrick, A.E. White and S.L. Neuberg 2016. Individual differences in fundamental social motives. *Journal of Personality and Social Psychology* **110**, 887–907.
Nikolova M. and F. Cnossen 2020. What makes work meaningful and why economists should care about it. *Labour Economics* **65**, 101847. https://doi.org/10.1016/j.labeco.2020.101847.
Oosthuizen R.M. 2022. The fourth industrial revolution – smart technology, artificial intelligence, robotics and algorithms: industrial psychologists in future workplaces. *Frontiers in Artificial Intelligence* 5, https://doi.org/10.3389/frai.2022.913168.
Piva M. and M. Vivarelli 2005. Innovation and employment: evidence from Italian microdata. *Journal of Economics* **86**, 65–83.
Protasi S. 2022. *The Moral Psychology of Envy*. London: Rowman & Littlefield.
Redhead D. and E.A. Power 2022. Social hierarchies and social networks in humans. *Philosophical Transactions of the Royal Society* **377**, 1845. https://doi.org/10.1098/rstb.2020.0440.
Ridgeway C.L. 2014. Why status matters for inequality. *American Sociological Review* **79**, 1–16.
Ridgeway C.L. 2019. Status: why is it everywhere? Why does it matter? New York: Russell Sage Foundation.
Sale K. 1995. *Rebels Against the Future: The Luddites and Their War on the Industrial Revolution: Lessons for the Computer Age*. Boston: Addison-Wesley.
Vandermeulen A. 1968. A remission from Baumol's disease. *Southern Economic Journal* **35**, 189–191.
Veblen T. 1899. *The Theory of the Leisure Class: An Economic Study of Institutions*. New York: B. W. Huebsch.
Voicu M., B. Voicu and K. Strapcova 2009. Housework and gender inequality in European countries (June 2009). *European Sociological Review* **25**(3), 365–377. http://dx.doi.org/jcn054.
Von Rueden C. 2014. The roots and fruits of social status in small-scale human societies. In *The Psychology of Social Status*, ed. J. Cheng, J. Tracy and C. Anderson, 179–200. New York: Springer.

World Economic Forum 2017. Surfing the 4th Industrial Revolution: Artificial intelligence and the liberal arts. https://www.brookings.edu/articles/surfing-the-4th-industrial-revolution-artificial-intelligence-and-the-liberal-arts/.

World Economic Forum 2021. The rise in automation and what it means for the future. https://www.weforum.org/agenda/2021/04/the-rise-in-automation-and-what-it-means-for-the-future/.

World Economic Forum 2022. AI and robotics: how will robots help us in the future? https://www.weforum.org/agenda/2022/02/robots-future-tech/url consulted on 20/2/2024.

Vincenzo Alfano is Assistant Professor in Political Economy at University of Napoli, Parthenope. He has broad research interests, ranging from health economics and public health to the economic impact of religion and sports economics. Email: vincenzo.alfano@uniparthenope.it

Pietro Maffettone is Associate Professor of Political Philosophy at the University of Napoli, Federico II. He received his PhD from the LSE. He is currently interested in topics at the intersection of ethics and economics.

Cite this article: Alfano V and Maffettone P. A world without work? Status, technological change and the future of employment. *Economics and Philosophy*. https://doi.org/10.1017/S0266267125000045