# Work and Automation

## Introduction

There have been a wide variety of debates about the possible threat of machines and automation to human employment and wellbeing over the past century. In this briefing I will summarise some of the concerns from the perspective of Christian theology and update the discussion with regards to more recent developments, especially in the field of artificial intelligence.

## Made for Work

The starting point for any discussion of work and possible threats to work from a Christian perspective must be a strong affirmation that work is intrinsic to the human condition. In essence, we were "made to work". This can be seen in the basic declaration at the start of the Hebrew Bible in the book of Genesis that even in the earliest state of paradise, "The LORD God took the man and put him in the garden of Eden to work it and keep it." (Gen 2:15, ESV). The Christian affirmation of the intrinsic value of work is longstanding and has been upheld in the face of prevailing secular disdain for work. Within Greek philosophy, especially manual labour was seen with contempt. In addition there was also an underpinning political concern that a person without sufficient time for leisure could not be trusted to weigh in on important political affairs. Contrast this with the number of New Testament instances which include workers at the centre of important events – Jesus' adopted father Joseph was a carpenter, and it seems likely that Jesus was himself prepared in this trade. The Apostle Paul was a tentmaker and many other disciples were fishermen. Christian theologians across the ages have made much of these facts and frequently affirmed the importance of human participation in labour as a core constituent of human identity and wellbeing. These affirmations map onto a range of recent discoveries by social scientists which underline the ways that work enlivens human experience. At the most basic level, Christian anthropology affirms how important it is that all persons have access to meaningful employment.

## What is the purpose of work?

The actual content of one's occupation is also important, with respect to both ethics and wellbeing. The crucial standard for work is that it be done to the glory of God and contributes to the common good of all God's creatures. Forms of employment which are dehumanising or destructive to other persons or environments do not satisfy either of these two criteria. While there are many contexts in which to do "good work," some occupations may be more ethically ambiguous. Our work should enhance the world in some way, whether by adding beauty, enlivening relationships, or preventing harm.

## What Should We Make? Who Should We Be?

With these preliminary theological points laid out, we come to the more specific context of work automation and the recent enthusiasm for algorithms and cloud-based learning computers. Among the many areas of open discussion, there are two which are particularly germane to Christian theology: (1) the possibility of self-conscious AI systems and (2) the new forms of work organisation which are resulting from the deployment of algorithmic systems.

Let us begin with the more exotic, but no longer implausible possibility that AI work may generate novel forms of consciousness and life.

The possibility that humans may somehow synthesise novel forms of life is a theological ethical quandary. Across the history of Christian theology many theologians have expressed a general wariness (sometimes described as "moral panics") towards the use of technology to generate

any novel forms, from Christian antipathy towards new forms of communication like the printing press to more contemporary innovations such as CRISPR/CAS9 gene editing.

How might we theologically approach this issue of creating new life? A good starting point is the notion held by many Christian theologians that humans participate in a divine economy. The sum total of all human work forms a small (but significant) part of a much broader sphere of divine action and thus the ultimate goal for human action is towards harmony with ultimate divine intentions. Another way of describing this approach is that God permits and even enables humans to co-create within structures which are divinely appointed. Reflecting this fact, some theologians have referred to human work as co-creation.

As the term implies, all forms of co-creation involve working with existing forms – we can draw a line to some context in which divine creativity (or oversight) has been involved. This brings us to the question presented by artificial intelligence. Are we speaking of a new level of novelty, human creation *ex nihilo* or "out of nothing"? In my view, we are not. While we may say on a case-by-case basis that certain forms of work result in outcomes which are against divine intentions for the created order, it is hard to argue that sheer novelty is a reason for disqualification, particularly if the purposes being pursued here are benign or even benevolent. I would argue here that, as technology critic Sara Watson suggests, it is important to be aware of our tendency to be caught up in "moral panics", that is, those situations where persons assume that some new technology is evil *because* it is new and unexpected.

As should already be clear, I do not mean to suggest that we should embrace every novelty, but rather remain open to the possibility that new things, even the generation of novel forms of intelligence, may be morally acceptable. However, as we survey the current field of work, and especially look towards the development of machine learning and AI towards work automation, there is another key problem which deserves our attention. Here I want to highlight the way that we should not only be concerned with the matter of "should we" do something, but of *how* we approach the development of new technologies. Here we must consider the ethics not only of outcome, but of pace. We are confronted with two important questions: (1) have we had adequate time as a society to reflect upon how we might responsibly care for the forms of life enabled by AI research? And (2) have we considered how these technologies might be deployed within human communities in ways that are desirable or might contribute to the common good? In both cases, I think, there are reasons to conclude that, especially on the level of theological ethics, we have not yet produced reflection on these issues at a satisfactory level. Current conversations about AI regulation can often be characterised by their opponents as a matter of permission (i.e. "what might we allow"), but I would offer that they may also be highlighted as a matter of *pace*. Ultimately, this is unfamiliar ethical territory – and some of these questions cannot be answered until we have arrived in this new context. But there are ways to "think ahead" of these issues and put in place regulatory frameworks that can ensure that adequate protections are in place. Researchers are working on careful and responsible guidelines for AI research, as I will note below. However, it is important to recognise that, as of yet, AI industries have preferred to offer self-monitoring over independent oversight and regulation of their work. We should be wise in judging the "progress narratives" which often drive fundraising for technology such as AI research. Just as "new" is not automatically evil, so too it is not automatically "good".

A second key area of concern is the ethics related to increased use of algorithmic computing in business. In addition to the concerns we have highlighted above, several other issues arise. As Frank Pasquale has indicated with his stern warnings about the possibility of a "black box society," by their very nature algorithms give rise to opaque, even hidden, business practices. This relates to the way that algorithms mobilise an incredibly complicated set of nested rules and predictive mathematics, such that in some

cases makers and owners of such devices cannot ultimately explain how they function. As recent controversies have indicated, algorithms are not value-free. Hidden behind these technologies are the humans which make them and all of their biases. Bearing this in mind, a group of AI specialists called "AI Now" have generated a series of reports on what responsible AI might look like. In particular, their research (Cf. "AI Now Labor Primer") indicates that "machine learning and robotics have the potential to both increase the productivity of labor *and* to exacerbate existing inequalities in the distribution of wealth" (emphasis mine). Here particularly, Christian concerns for justice demand careful safeguarding to ensure that the health and well-being of workers is protected and thus not vulnerable to further erosion as novelties in the workplace ensue. AI Now recommends that public agencies undertake "algorithmic impact assessments" (see further below) to mitigate possible harms prior to implementing new platforms. Furthermore, we must acknowledge that whilst unemployment figures in Britain are moderate, the rate of persons working in financially precarious situations is rising, and job satisfaction, particularly in the UK, is at an historic low.

I would argue that the key matter at the heart of these debates is not exclusively the ethics of the things which we are making but also in large part about the kind of people we wish to be. The desire to use algorithms to make business and government more efficient relates back to a much older quest for scientific forms of work which were first envisaged in the enlightenment and refined in the 20th century, in the form of Taylorism.[1] This ideological context works off a set of reductive assumptions about the world and its human occupants. As a result it holds that human behaviour (and work productivity) can be fine-tuned without concern for ethics, in the same way that one might improve on a machine. Seen in this way, this discussion comes full circle - from a concern about the generation of thinking machines, to a concern about the enforced mechanisation of human relationships and behaviour. A Christian understanding of human nature requires that we make our primary focus not the advancement of progress or the maximisation of efficiency, but the common good and the glory of God.

I suggested at the outset that a Christian theological anthropology holds unwaveringly to the goodness of human involvement with work, particularly with forms of work which enable humans to participate in God's good creation. Nearly a century ago John Maynard Keynes suggested that with the advancement of industrial work techniques and new technologies, the average working week might be reduced to 15 hours or less. In a similar way, the theologian Josef Pieper argued later in the century that "leisure" might be considered "the basis of culture". As many contemporary theologians have suggested, when we define work as edifying and directed at the common good, these distinctions between work and leisure, which were popular in the 20th century, begin to break down. The key point then is not the maximisation of work or leisure, but continued growth in wisdom (rather than ceding it to algorithms) and the craft of good work. If, in the near future, work automation enables us to enjoy a more balanced life, that wouldn't be such a bad thing.

## Key points:

- Humans are made for work, employment is an intrinsic feature of being human
- Work should be done to the glory of God and the edification of God's creation
- Good work comes in many forms: carers, thinkers, makers and enablers
- Each form of work comes with possible moral hazards
- In the case of makers, the concern lies in the

1 Frederick Winslow Taylor pioneered the study of "scientific management" in the late 19th century, sometimes also referred to as the "efficiency movement". This approach held that empirical study of workers and work-output could deconstruct and reassemble more efficient work processes much like one might improve a machine. For a more thorough history of the development of Taylorism in a British context, cf. Michael Weatherburn, Scientific management at work: the Bedaux system, management consulting, and worker efficiency in British industry, 1914-48 (PhD Diss., Imperial College London, 2014).

problem of pace: our novel inventions can outpace the ability of society to deliberate about wise use

- The possible generation of self-conscious machines is not itself immoral, but carries tremendous moral hazards
- It is key to avoid "moral panics" which involve a gut reaction against novelty itself
- It is also important to scrutinise "progress narratives" judging whether some new technology is fitting on the basis of whether it can contribute to the common good
- AI research and development requires independent oversight and regulation to ensure that this is the case
- Public agencies should consider "algorithmic impact assessments" to mitigate possible harms, prior to implementing new AI platforms

## Recommended Reading:


- Jeremy Kidwell, *The Theology of Craft and the Craft of Work* (Routledge, 2016)
- "AI in the UK: ready, willing and able?" House of Lords' Select Committee on Artificial Intelligence, Report of Session 2017-2019. https://publications.parliament.uk/pa/ld201719/ldselect/ldai/100/100.pdf.
- Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, "Machine Bias" in *ProPublica*, May 23, 2016. https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing
- Frank Pasquale, *The Black Box Society* (Harvard University Press, 2015)
- Dillon Reisman, Jason Schultz, Kate Crawford and Meredith Whittaker, "Algorithmic Impact Assessments: A Practical Framework for Public Agency Accountability" *AI Now*, April 2018. https://ainowinstitute.org/aiareport2018.pdf
- Sara M. Watson, "Toward a Constructive Technology Criticism" October 4, 2016. https://www.cjr.org/tow_center_reports/constructive_technology_criticism.php


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