Taylorism and the erosion of professional judgement.

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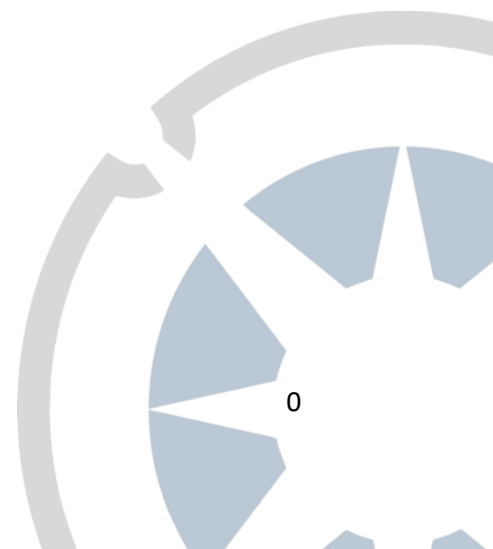
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Edward Skidelsky, University of Exeter

"Taylorism" refers to the system of F. W. Taylor, the early twentieth-century American pioneer of scientific management. Taylor realised that the best workers in any enterprise worked according to a certain plan, but without full consciousness of what that plan was. He accordingly set out to identify the plan, to formulate it abstractly, and to make it binding on the workforce as a whole. His aim was not just to increase the productivity of work but to place authority over the work process firmly in the hands of management. "In the past the man has been first; in the future the system must be first", was how he put it in his classic textbook.[1]

How could the tacit know-how of workers be extracted and formalised? Taylor's associates Frank and Lillian Gilbreth had an ingenious solution to this problem: they photographed workers with small bulbs attached to their hands, capturing their movements as swirling lines of light. They also constructed three-dimensional "motion models", using wires to represent "paths of least waste". The Gilberts regarded these models with an almost idolatrous enthusiasm. "The motion model … *makes tangible the fact that time is money*," they wrote, elatedly, "a*nd that an unnecessary motion is money lost forever*."[2]

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[1] Frederick Winslow Taylor, *The Principles of Scientific Management* (New York: Harper, 1919), p. 7.

[2] Frank and Lillian Gilbreth, Applied *Motion Study; a Collection of Papers on the Efficient method to Industrial Preparedness* (New York: Sturgis and Walton, 1917), p. 125
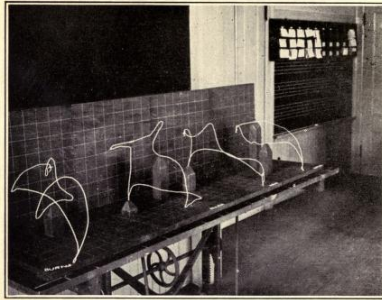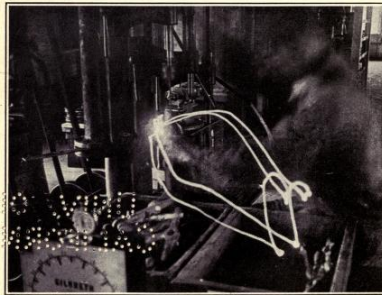
FIG. 16

First photograph of wire models showing one man's progress of learning paths of least waste. These wires represent the paths of the left hand of a manager on a drill press,—a machine which he had not touched for twenty-five years.

FIG. 17

Chronocyclegraph showing two cycles of a foreman's left hand on the same machine,—showing habits of "positioning" before "transporting loaded."

FIG. 16

FIG. 17

Taylor's system was designed for use in factories. It may seem irrelevant to the kinds of jobs which dominate our post-industrial economy. But that would be a superficial view of the matter. The basic principle of scientific management – to identify and "roll out" best practice – is as readily applicable to mental as to physical work; moreover, the computer revolution has placed in the hands of modern managers instruments of control far superior to the Gilbreths' clunky "motion models". Taylorism is still with us, maintains business analyst Simon Head, only now "the targets that matter most are the judgements, human interactions, and even the speech of employees, and the agents of control are these networked computers empowered with workflow and monitoring software. … What we are witnessing is the emergence of a new white-collar working class, subject to all the regimentation and discipline of its factory predecessor, but lacking the latter's solidarity, its willingness to organize and to fight its cause in the workplace."[3] "Digital Taylorism", as Head calls this ruthless new management style, has permeated retail, banking, medicine…and academia.

I confess that I find Taylorism a deeply dispiriting doctrine. But what exactly is wrong with it? In this paper, I suggest two lines of critique, one drawing on familiar Aristotelian claims about the nature of practical rationality, the other on more contentious ideas about the point of human decision making. Let me take them in turn.

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[3] Simon Head, *Mindless: Why Smarter Machines are Making Dumber Humans* (New York: Basic Books, 2014), p. 28.

Taylorism is at root the attempt to formalise the knowledge implicit in skilled labour. But can such knowledge be formalised? There is a view, familiar from Aristotle, that human decision making is inherently *un*formalisable, because it must always be alert to the particularities of the concrete case. That is certainly an attractive view, but as Taylor showed, many jobs *can* usefully be formalised; indeed, the whole system of modern industry, with its advanced division of labour, depends upon that fact. So the question is: what distinguishes those jobs that can from those that can't be formalised, and into what category do the jobs that concern us fall?

It is useful to think in this connection about one human activity which *can* uncontroversially be formalised: the playing of games. All games of perfect information have (at least in theory) a line of best play, representable as a branching decision tree. For some, such as noughts-and-crosses, this line can be worked out easily enough. For others, such as draughts, it can be worked out only with the aid of powerful computers. For others still, such as chess, it has not been worked out at all, and probably never will be, for purely empirical reasons. (There are, apparently, more possible games of chess than there are atoms in the universe.) Nonetheless, there exists "out there", in mathematical reality, a perfect chess game – a game known only to God, as it were, or perhaps to the character of Death in *The Seventh Seal*. And even if chess has not been "solved" in the manner of drafts, computers now play it much better than even the top grandmasters.

The feature of games that makes them particularly apt for formalisation, and hence computerisation, is their "boundedness" – their restriction to an artificially limited subset of practical possibilities. Indeed, games are bounded in three different ways, which it is useful to distinguish. First, they have an agreed and clearly specified end: to win, as defined by the rules. Second, they present players, at every stage, with a limited range of options: 20 opening moves in chess, 35 opening bids in bridge, and so forth. Third, in deciding which option to go for, only facts internal to the game – the position of pieces, the distribution of cards, etc. – are relevant. Nothing "outside the game" counts.

Now, some "real-life" occupations are like games. Take taxi driving. This is a skilled job, requiring an extensive knowledge of the terrain. Nonetheless, it is bounded in all three respects mentioned above. Its end is given: to get the customer from A to B in the shortest time, or perhaps for the lowest price; decision on this is usually passed on to customers. It presents determinate options at each stage: turn left, turn right, go straight on. And in deciding which option to chose, the taxi driver need consult only a limited range of facts, typically facts concerning traffic flows. Perhaps there are a few exceptions to this generalisation. A couple of tourists want to be taken to Buckingham Palace. They say: "we have all afternoon, money is no object; take us the scenic route." Here the end, and so the facts bearing on the choice of means to that end, is open to interpretation. But most of the time, taxi driving is not like this. This is why it can be – and to a large extent already has been – automated. Most taxi drivers now

rely on satellite navigation. Perhaps over the next few decades, driverless technology will render them altogether redundant.

However, taxi driving is not a model for work as a whole. Consider the activity of a judge in passing sentence. This too is often "bounded" in the second sense mentioned above: each crime caries a range of mandatory sentences, from which the judge must chose. But it is not bounded in the other two senses. The "end" of punishment is open: it might be retribution, deterrence, reform, or some combination of these. And the range of facts bearing on the choice of punishment is also open. The age of the culprit, his family situation, his danger to society, his remorse or lack of it, the condition of prisons – all this and more is potentially relevant. This is why sentencing cannot properly be reduced to the mechanical application of a rule. Nonetheless, in many jurisdictions, sentencing *is* now an essentially mechanical operation. There is a formula, into which various factors are fed to yield an outcome. Depressingly, many judges seem happy to comply with this degradation of their role. In the words of one American judge, "sentencing guidelines take into account all those factors I don't feel competent to weigh: punishment, deterrence, rehabilitation, harm to society, contrition – they're all engineered into the machine; all I have to do is wind the key".[4] A judge who thinks in this way has abandoned what one might imagine to be the essential function of a judge, namely, judging.

Medicine offers other examples of dilemmas which are "unbounded" in my sense. Take the predicament of a doctor who has to decide whether to offer chemotherapy to an 80-year-old cancer patient. If successful, the treatment will give the patient an expected five further years of life, though in ill health. If unsuccessful, he will die in great discomfort. There is a 40% chance of success. What should the doctor do? As in the case of the judge, his options are limited – he must treat or not treat – but the *end* of his choice is open. In general terms, of course, it is "the health of the patient". But what is health? Does it lie in length of life or in quality? What is quality of life anyway? The range of facts bearing on the decision is also open. Is the patient active and of sound mind? Is he engaged in some important work? Is he expecting grandchildren? What does he himself want to have done to him? Clearly, a decision of this sort cannot properly be mechanised. Nonetheless, decisions about medical treatment, like sentencing decisions, are increasingly delegated to automated systems, whose verdicts doctors merely relay. Unsurprisingly, mistakes abound.

The unboundedness of decision making in law and medicine is explained by the fact that both professions touch on questions which might be called "philosophical" – questions concerning the real nature of justice and of health. This is what is meant by calling such professions "liberal". This is also, presumably, why these professions have always been seen as fit to be taught at university, along with philosophy and the liberal arts. Taylorism, one might say, errs when it ventures to extend to liberal

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[4] Quoted in Barry Schwartz and Kenneth Sharpe, *Practical Wisdom: The Right Way to Do the Right Thing* (New York: Riverhead Books, 2010), p. 116.

professions like law and medicine categories of thought appropriate only to "mechanical" professions like taxi driving. But in its own sphere, which is that of industry and low-level services, it is perfectly in order.

However, I think our objection to Taylorism runs deeper than this. I think that even when the mechanisation of decision making "works", in the sense of achieving results which are reliably better than those of even the best human expert, it carries costs – costs which may sometimes outweigh the benefits. To appreciate this, we need to think for a moment about the *point* of decision making. Taylorism assumes that the whole point of decision making is to produce correct outcomes; if algorithms can produce correct outcomes more reliably than humans, then bring on the algorithms. In this, it reflects that philosophy of action which Talbot Brewer has called "productivist" and which he sees as endemic to capitalist modernity.

Aristotle also recognised a distinctively "productivist" mode of action, which he labelled *poiesis*. But he did not see production as characteristic of action as a whole. He also recognised another mode of activity, *praxis*, which has as its goal not some conceptually independent product but simply excellence in the kind of activity that it is. An act of tenderness, such as nursing a sick friend, would be an example. The end here is not some state of affairs independent of the nursing; it is, simply, nursing as tenderly as one can. It was action in this sense that Dante had in mind when he wrote that "in every action what is primarily intended by the actor … is the disclosure of his own image. … Nothing acts unless [by acting] it makes patent its latent self."[5]

What Dante says about action applies *a fortiori* to decision, which is the intellectual side of action. This too must be understood praxically, as a "making patent" of the agent's latent self, not just as a means to the production of correct outcomes. It is an *expression* of certain qualities of mind and character – qualities of judgement, skill and resoluteness. That is why its mechanisation is never free of cost, even when it leads to better results. Take taxi driving again. Thanks to sat-nav, this once skilled job can now be performed by anyone with a car. Consumers have benefited: prices have come down. But the professional standing (one is tempted to say honour) of taxi drivers, which was founded on their unique skill in navigating complex cityscapes, has been destroyed.

Has the cost been worth the benefit? That is a question that can only answered case by case. I am not mounting a general argument against the formalisation of work. I am simply drawing attention to one of its discontents.

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[5] Dante, *De Monarchia* 3.15.