Living Labour, Wittgenstein and Artificial Intelligence

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To me, Marx's thought is a little like a Rubik's Cube. By twisting and rotating different parts of the Cube, you can bring different colours to each of its surfaces even though everything remains linked underneath. Over the last 5-10 years, it's occurred to me more than once that when we're talking about ecology, as we are in this IIPPE conference, it's quite useful to rearrange the Cube so that the colors uppermost correspond to Marx's distinction between living and dead labour.

This distinction, of course, was formulated as one part of Marx's analysis of 19th-century mechanization and industrial capitalism. But I believe it applies to earlier and later phases of capitalism as well. And for me it's more fruitful than ever as a starting point for exploring the rest of Marxist theory.

Distinguishing between living and dead labour, for example, is key to:

- the labour theory of value
- the doctrine that machines do not produce value by themselves
- the concept of the organic composition of capital
- the hypothesis regarding the tendency of the rate of profit to fall
- the understanding of the historical evolution of the labour process (Resnikoff etc.)
- the concept of exploitation
- the concept of capital and capital accumulation itself

Of course, there's some haziness about just what living labour *is*, and what distinguishes it from dead labour. The synonyms that Marx himself tended to use for the term were pretty open-ended and metaphorical – "vital energy", "will", "bodily subjectivity", "form-giving fire", "self-negating capacity", the "blood" on which the vampire of dead labour feeds to produce surplus. For me, this isn't a problem, except insofar as such terms can imply doctrines like vitalism, which I think we need to avoid. In general I find the flexibility of the notion is part of its usefulness. But I think the current conjuncture gives us opportunities to revisit and rewrite the concept in ways that might help us understand better both what's going on with capital these days and what Marx himself was talking about in his own era.

What I want to suggest here is that if we take a close look at what Wittgenstein said about the precursors of today's artificial intelligence (AI), and then compare that to what Marx said about industrial capital's eternal quests to get around its own reliance on living labour, we might find some illuminating parallels and useful, synergistic new vocabularies.

In an article in the recent *Socialist Register* and elsewhere, I've argued that AI can be seen as mechanization of the labour of interpretation, sharing some of the same logic that is behind the mechanization of, say, weaving, and subject to the same contradictions. Interpretation machines, like weaving machines, do not get rid of living labour. Instead, they intensify it, speed it up, degrade it, alter it, squeeze it, and at the same time obscure its role in creating capitalist value. In reality, interpretation machines, like weaving machines, *increase* capital's need for living labour, not only in plantation, extraction and circulation economies, but also in surveillance economies whose purpose is to collect the necessary vast new quantities of living digitization labour involved in things like smartphone keystrokes, ReCAPTCHA inputs, microtasks by home workers, 'data exhaust,' and so forth.

Many of the parallels here might be expressed in an aphorism: just as weaving machines do not weave, so too interpretation machines do not interpret.

In one sense, capital would love it if weaving machines *did* weave and interpretation machines *did* interpret. If that were true, capital wouldn't need to bother with workers, wages, resistance, unions, strikes, rebellion and all the rest of it. Capital could accumulate without all those impediments.

But of course it's not true. With weaving machines, more workers than ever were required to degrade themselves by feeding, tending and repairing them, because by themselves, weaving machines cannot weave. With interpretation machines, more workers than ever are required to degrade themselves by feeding, tending and repairing them, because, by themselves, interpretation machines cannot interpret.

So while weaving and interpretation machines can increase worker productivity to a certain extent, and control and channel their resistance in certain new and improved ways, in the end they leave capital with an even bigger worker problem than it had before. Such is the unavoidable cost in exploitation and repression of creating capitalist value.

OK, but what does it *mean* to say that weaving machines do not weave and interpretation machines do not interpret? If this is the core of industrial capital's "machine problem" and also the core of its "worker problem", its "accumulation problem" and all the rest of its problems, how do we explicate the aphorism?

For the time being, maybe we can leave to Marx and his followers the question of why weaving machines do not weave (and why they can't accumulate capital by weaving). For today's purposes, I don't have much to add to Marxian accounts of why it is that what the machines on the textile factory floor do, once coaxed into their clacking, thundering repetitions, could never add up to weaving without the presence of armies of seen and unseen human (and nonhuman) agents that need to be recruited, brought under some kind of control, and induced to work and communicate together.

But the (somewhat) newer question of why interpretation machines do not interpret, and what problems this creates for capital, and how capital responds, is one where some help from Wittgenstein might well be useful.

Wittgenstein spent quite a bit of the 1930s and afterwards engaged in responding, in some cases *avant la lettre*, to the political programme set out in Alan Turing's early papers and in similar and previous work. This was to model or reproduce the process of calculating, interpreting, reading, thinking, recognizing, searching, and so forth on the assumption that the calculating or thinking process was a hidden, inner process like the digestive process, susceptible to biological or mechanical modelling. And that if we could figure out the detailed workings of this inner mental process, the way we've figured out digestion, we could construct mechanical calculators, interpreters, thinkers, recognizers, readers and all the rest, the way that we've built mechanical digesters. One idea was to break down the calculating, reading or thinking process down into mechanical steps that could represent what's going on inside us, modelling concepts as internal 'mental representations' like algorithms, data or computer programmes.

This Cartesian, mechanist methodology, which today dominates AI development at major IT firms like Facebook, Google, Alibaba, Amazon and Apple, as well as in the academy, had a long history in the theories of earlier psychologists, philosophers, mathematicians, cognitivists, political thinkers

and others. It was not at the time directly, immediately or explicitly rooted in capital's developing needs to control or threaten to supplant human labour.

But I think the affinities with capitalist thinking and the relevance to labour struggles are obvious. Labour is all about individual labourers interpreting, calculating, thinking, recognizing, remembering, inferring, searching, reading, using concepts, communicating, cooperating and all the rest of it. This is true down to the swing of the hammer of the most brutalized "manual" line worker. If capital could build independent replicas of, and gain control of, such supposed inner processes – or better yet, issue credible threats to replace them wholesale – the possibilities would be endless.

What Wittgenstein does is suggest the practical contradictions that spring up when you act on this programme. Lacking a history of learning from causal interactions with objects within a community of other individuals observably reacting to the same objects, he argues, interpretation machines constructed on the plan just mentioned will not be able to use the concept of the possibility of their making mistakes, of following or breaking a rule, or of truth or objectivity, or any concepts or thoughts about the external world, no matter how far their abilities to discriminate among different objects or processes may exceed those of humans. So you'll need troops of cheap living labour to provide all this for them. (As is indeed the case today with all of the above-mentioned giant corporations.) And the more widespread and efficient such interpretation machines become, the more living labour will have to be recruited, controlled and degraded to make them function. In other words, all the old problems and contradictions involving the creation of capitalist value or accumulation.

One way of encapsulating this contribution to Marxist analysis might be to reconsider that old question of "working to rule" – the venerable weapon of labour resistance. Capital would love to be able to foreclose the use of this weapon. Replacing rules by machine processes promises to do just that. Interpretation machines on the current model will never be able to say to the boss, "but I'm performing this task just the way you told me to do it", using their creative reinterpretation of "the rules" to do nothing at all, or to sabotage production.

The problem for capital, obviously, is that these interpretation machines would never be able to reinterpret anything else, either. If they couldn't disobey, they couldn't obey, either. In other words, they would not be able to work. In other words, they would not be able to create surplus for the capitalist.