

Philosophy and the Machine:

Slavery in French Philosophy of Technology 1897-1948

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Abstract:

This essay reconstructs a now largely obscure fifty year debate within French philosophy of technology from Alfred Espinas to Alexandre Kojève about slavery in the ancient world. To summarize, I argue that early twentieth century French philosophy of technology's hypothesis that Greek and Roman slavery caused a *blocage* – a block, delay or stagnation – in the development of technology in antiquity may well seem little more than a historical curiosity today, but that its hypothesis of a constitutive relation between slave labour and technological innovation has recently re-emerged in biopolitical form in such texts as Giorgio Agamben's *The Use of Bodies* (2015). In the confrontation between what Alexandre Koyré famously calls the 'philosophers' and the 'machine', I argue that we not only enter a largely forgotten conceptual archive for modern French philosophy of technology (Gilbert Simondon, André Leroi-Gouhnan, Bernard Stiegler) but for contemporary biopolitical theory (Giorgio Agamben).

Key words: Slavery, technology, *blocage*, Espinas, Louis, Schuhl, Koyré, Kojève, Agamben

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For if every instrument could accomplish its own work, obeying or anticipating the will of others, like the statues of Daedalus, or the tripods of Hephaestus, which, says the poet, ‘of their own accord entered the assembly of the Gods’; if, in like manner, the shuttle would weave and the plectrum touch the lyre without a hand to guide them, chief workmen would not want servants, nor masters slaves.¹

In a famous or notorious passage from the *Politics*, Aristotle argues that certain human beings are slaves by nature. To be sure, Aristotle’s claim that the slave is a kind of ‘living tool [*ktema ti empyschon*]’ has often been interpreted by modern classical scholarship as little more than a crude ideological naturalization of human exploitation to meet the pressing demand for economic production in Ancient Greece.² If we recall that Athens in the fourth century BCE was still a technologically primitive society, but one which had a cheap and abundant supply of enslaved human beings at its disposal to perform the necessary manual labour that free citizens such as the philosopher himself held in contempt, then Aristotle (it is argued) could hardly do anything else than deem slavery ‘natural’. In this historically determinist reading, Aristotle’s naturalist apology for slave labour ironically begins to resemble his own definition of the slave: the philosophy of slavery is itself a ‘self-moving’ tool.

To focus on one celebrated thought experiment within his defence of slave labour, which could almost be said to contain the whole of early twentieth century French philosophy of technology in embryo, Aristotle appears to acknowledge the somewhat self-fulfilling nature of his own argument by contending that the slave simply had to become the ‘instrument which takes precedence of all other instruments’ because there was no equivalent self-moving technological instrument that could perform the same work in its place. If shuttles could weave, and plectrums play the harp, without the help of human hands – just like the statues of Daedalus which were so lifelike it seemed as if they moved, or the mechanical tripods created by Hephaestus which, according to Homer’s *Iliad*, were able to climb Mount Olympus all by themselves – then, the philosopher argues, a master would no longer have any need of that ‘living tool’ called the slave. In the absence of such wonderful self-moving tools, however, Aristotle regrettably concludes that slavery remains necessary.³

If Aristotle provides the original (anthropological) answer to the question of why Greek civilization needed slavery – which is to say that a slave is a naturally self-moving tool in a civilization without any unnatural or technological self-moving tools of its own – a generation of French philosophers, sociologists and intellectual historians of antiquity from the 1890s to the 1940s argue that this answer simply begs another (variously sociological, economic or philosophical) question in its place which has become known as the question of the technological ‘*blocage* [blockage, delay or stagnation]’. In the eclectic tradition of what for economy’s sake I will call ‘early twentieth century French philosophy of technology’, Aristotle’s defence of slave labour as a necessary supplement for a technological deficit or lack within Greek society only serves to raise the problem of *why* such labour-saving technologies developed so slowly in the Ancient World that slave labour had, as if by default, to become normal or naturalized in the first place. Why, as Serafina Cuomo asks, were the Greeks perfectly able to devise sophisticated apparatuses like Archimedes’ catapult or Hero of Alexandria’s aeolipile but apparently incapable of taking what seems to us to be the next logical step and inventing, say, machinery or  stream engines?⁴

In this essay, I want to begin to reconstruct this now largely obscure fifty-year French intellectual debate around slavery and the technological *blocage* in the Ancient World through the work of the early sociologist Alfred Espinas (1844-1922), the intellectual historian and political activist Paul Louis (1872-1948), and the philosophers Pierre-Maxim Schuhl (1902-84), Alexandre Koyré (1892-64) and, most prominently, Alexandre Kojève (1902-68). To

briefly sketch my argument in what follows, I seek to contend that early twentieth century French philosophy of technology's theory of a technological *blocage* called 'slavery' may well seem little more than a historical curiosity today – whose governing hypothesis is dismissed as both empirically obsolete and theoretically impoverished – but it nonetheless constitutes a conceptual archive without which it is impossible to understand modern reflections upon, for example, the biopolitical relationship between slavery and technology such as Giorgio Agamben's *The Use of Bodies* (2015). If it was arguably Marx and Engels who set the theory of the *blocage* in motion by arguing that the Greek slave was neither simply a social nor a legal category but rather antiquity's constitutive mode of production – 'Without slavery', Engels famously writes, 'no Greek state, no Greek art and science'⁵ – I will seek to show that French philosophy of technology (which is by no means ideologically sympathetic to Marx) generalizes the historical materialist theory of the *blocage* into the new conceptual territory of the late nineteenth and early twentieth century which re-organizes the relation between idealism and materialism in original ways: sociology (Espinas, Louis, Schuhl), historical epistemology (Koyré) and speculative anthropology (Kojève). In the confrontation between what Koyré famously calls the 'philosophers' and the 'machine', I will conclude that we perhaps begin to encounter part of the forgotten conceptual pre-history not merely of modern French philosophy of technology (Gilbert Simondon, André Leroi-Gouhran, Bernard Stiegler) but of contemporary biopolitical theory.

1. Sociological *blocage*: Espinas, Louis, Schuhl

In his *Origines de la technologie: étude sociologique* (1897), Alfred Espinas – the first ever Professor of Sociology at the University of Paris – almost singlehandedly inaugurates the field of modern French philosophy of technology. To quickly summarize this now largely unread work by the translator of Herbert Spencer, contemporary of Émile Durkheim and teacher of Marcel Mauss, Espinas seeks to offer a genealogy of the emergence of what he calls 'general technology' which is defined here in extraordinarily capacious terms as the total ensemble of conscious and reflexive practices that produce action. For Espinas, as he makes clear in his Introduction, we may find 'some advantage in being able to designate in this way, as the Greeks did, conscious and reflective practices, to a certain degree in opposition to simple practices or customs, which are established spontaneously, prior to any analysis'.⁶ If Espinas's history of technology institutes what will prove to be an enduring conceptual distinction between what

he calls *la technologie* and *la technique* – which is to say between something like a general philosophy of technology and specific empirical or positivist technologies like warfare, agriculture, medicine etc. – he curiously refuses, as Leopoldo Iribarren recently observes, any Durkheimian appeal to the autonomy of the social in favour of a quasi-Marxian historical materialism where the material mode of production determines the development of social, political, and intellectual life.⁷ In the introduction to *Les Origines de la technologie*, Espinas (who was no political Marxist)⁸ can thus be found affirming the Marxian determinist position that Greek society's social organization at any given stage of history is governed by its prevailing mode of production: 'All the arts, from the simplest to the most complex, therefore have the same character at this time, and this character is determined under the law of correlation of growth, by the state of industrial technology that provides the type according to which all collective action is exercised'.⁹

To the question of what role the slave plays in this origin story of Greek technology, Espinas revealingly has no answer: what is remarkable about his encyclopaedia of ancient technology, particularly in view of subsequent work in the field, is that it contains almost no mention of slave labour. It is here, perhaps, that we reach the limits of Espinas's alleged 'Marxism' because slavery is represented predominantly as a social and legal epiphenomenon of the prevailing mode of production rather than a mode of production in its own right. As a consequence, Espinas's historical determinism leads him to the opposite conclusion than that taken by later theorists of the *blocage*: technological innovation is what sets in motion the institutionalization of slavery rather than the other way around. For Espinas, what he calls the early 'physico-theological' phase of Greek technology (which extended from the eighth to the seventh centuries BCE) conceived of technology as a gift from the gods and so had no need for a division of labour and, hence, of slavery: 'Slavery only developed slowly,' he remarks, and '[t]here was for a long time no incompatibility between industrial, mercantile, and agricultural occupations and the situation of the free man. If all tasks are taught by the gods, don't they all have some dignity?'¹⁰ If we can speak of a *blocage* in Ancient Greece at all, it perversely takes the form of technology's own delay of the evolution of slavery rather than vice versa because it is only from the seventh century BCE onwards, with the so-called 'organological' stage of technological development, that a division of labour between slaves and free citizens began to appear: 'the first were, like their occupations, vile and servile βάνανσοι [*banausoi*, a pejorative term popularly applied to the class of manual or artisanal labourers], they were slaves; the second were free men *par excellence* and their occupations were liberal'.¹¹ In a reversal of

Aristotle's claim in the *Politics*, a work which could itself be regarded as a late product of this 'organological' stage in the history of technology, Espinas's slave thus ceases to be merely a historical placeholder, who will exist only unless and until a future technological revolution renders them redundant, and instead becomes a relatively belated recruit to a technological revolution that is already well underway.

If Espinas thus concludes that technology operates as a kind of materialist handbrake upon slavery's development as a social and legal institution, the Marxist intellectual historian and trade union activist Paul Louis restores a more classically historical materialist position in which slave labour is itself, as a relatively primitive mode of production which has nonetheless obtained a monopoly, the block upon the evolution of more sophisticated forms of production. To turn next to Louis's *Le travail dans le monde romain* (1912) – which is later translated as *Ancient Rome at Work: An Economic History of Rome from the Origins to the Empire* (1927) – we immediately find the Marxian thesis that slavery was 'the basis of the whole economic system of the states of antiquity' without which the latter would be simply 'unthinkable'.¹² It is also clear that Louis sees a certain negative correlation – if not yet any clear direct causation – between manual labour and machinery in the ancient world: 'Machinery had not then to any appreciable extent supplemented the human arm and human muscular effort, nor had the forces of nature been tamed and harnessed'.¹³ Yet, *Le travail dans le monde romain* still tends to attribute the slow development of advanced forms of machinery, not to the institution of slavery as such, but to other economic, demographic, and infrastructural factors, such as lack of demand, low population density and poor transport links. For Louis, slavery only seems to play a directly causal role in slowing down technological growth at certain key moments in Greek history: he observes that the three Samnite wars (343–341 BCE, 326–304 BCE, and 298–290 BCE) – which led to the conquered peoples being sold into slavery – resulted in a massive explosion of the slave labour market which 'hampered progress in manufacture for many years'.¹⁴ In anticipation of Schuhl, however, Louis's historical materialist reading of slavery also contains a significant sociological proviso because the real block upon technological progress turns out to be, not the specific mode of production called slavery as such, but rather the underpinning philosophical value system which produced that mode of production in the first place: the slave class was not simply instituted under the 'pressure of fresh needs' but in order to perform the 'heavy tasks free men despised'.¹⁵

In Pierre-Maxim Schuhl's *Machinisme et philosophie* (1938), a short survey of the philosophy of technology from Ancient Greece to modernity by a professor of ancient philosophy at the University of Toulouse and later the Sorbonne, the theory of the *blocage* is finally given explicit form. It gives what Koyré will later call a 'psychosociological' account of slavery which seeks to synthesize the Marxian historical materialist and Durkheimian sociological reading of the *blocage* at work in predecessors like Espinas. According to Schuhl's reading, it was not the absence of technology that produced a dependence on slave labour but rather the other way around: Greek society's addiction to cheap and abundant slave labour as its prevailing regime of production and value was what artificially delayed its technological evolution. To reverse the causality of Aristotle's thought experiment on slavery and machinery, Schuhl thus argues that slavery is *itself* the reason why self-moving machinery did not exist in Ancient Greece and so the existence of slave labour requires a new explanation: 'we do not need to save manpower by resorting to machines', he writes, 'when we have at our disposal numerous and inexpensive living machines [*machines vivantes*], as far removed from the free man as the animal: slaves'.¹⁶ If slavery's existence as a specific mode of production certainly makes the construction of labour-saving machines undesirable from a purely economic point of view, however, Schuhl does not simply propose an economic explanation for the *blocage* in terms of the laws of supply and demand because he goes on to make clear that slave labour is itself once again the sociological product of 'a particular hierarchy of values' – θεωρία [*theoria*] over πράξις [*praxis*] – which resulted in 'contempt [*mépris*]' for manual work: Schuhl, like Espinas before him, finds symptomatic the widespread use in Greek society of the term 'βάνανσος [*Banausos*, manual labourer]' which, as he puts it, 'becomes a synonym for contemptible [*méprisable*] and applies to all crafts [*techniques*]'. For Schuhl, this 'mental *blocage*' will endure all the way up to the Renaissance when the *vita activa* will finally assume priority over the *vita contemplativa* – and so it is no coincidence that the early modern period will also be the period of the scientific revolution. In the next iteration of *blocage* theory, however, French philosophy of technology breaks out of this predominantly psychosociological reading which persists in one form or another from Espinas to Schuhl and proposes an entirely new philosophical explanation for ancient Greece's technological stagnation.

2. Philosophical *blocage*: Koyré

In his well-known review essay ‘Les Philosophes et la machine’ (1948), which was originally published in two parts in Georges Bataille’s journal *Critique*, the renowned École Pratique des Hautes Études philosopher and historian of science Alexandre Koyré uses the occasion of the publication of the second edition of Schuhl’s *Machinisme et philosophie* in 1947 as a platform to not only critique the prevailing reception of the technological *blocage* but also to clear the space for his own original *blocage* theory. To begin with, Koyré’s essay furnishes a kind of immanent critique of Schuhl’s ‘psychosociological’ history of machinery – whose claim, recall, was that any explanation for the technological stagnation in Greek culture must be found in the ‘very structure’ of ‘an aristocratic society and an economy founded on slavery’¹⁷ – by contending that such a history cannot, even on its own methodological terms, solve the problem of the *blocage*. It proceeds to demolish, point-by-point, the socio-economic inverse relation Schuhl constructs between slavery and technology in the ancient world: Koyré observes, for instance, that many free citizens were also compelled to work for a living as opposed to living a life of leisure, that manual labour was not always or necessarily carried out by slaves and, of course, that this supposedly ‘primitive’ society was still capable of executing works – such as building the Egyptian pyramids, Heliopolis or Karnak – that would test even the powerful and advanced machinery available today.¹⁸ If Schuhl’s psychosociological account of the history of the machine is undoubtedly ‘a much more nuanced and in the same way much more satisfactory explanation than that offered us by the Marxists’,¹⁹ Koyré acknowledges, his review essay finally insists that any attempt to ‘explain’ the poverty of Greek technology purely via its socio-economic context will prove impossible: ‘Syracuse does not explain Archimedes’, he famously concludes, ‘any more than Padua or Florence explained Galileo’.²⁰ In the same way as Espinas, Louis and other predecessors, Schuhl’s sociological answer to the question of whether slavery caused the *blocage* or the *blocage* caused slavery ends up, as Agamben will confirm some 75 years later in *The Use of Bodies*, describing the same vicious circle as Aristotle’s original thought experiment: ‘How and why was this technology born?’ Koyré asks, ‘What is the source and origin of machinery? Basically, we know nothing. Because all the explanations, however plausible they may be, end up going round in circles’.²¹

To break out of this sociological circle in which *blocage* theory is hopelessly caught, Koyré’s own exit strategy is perhaps anticipated by the fact that the title of his essay – ‘The philosophers and the machine’ – reverses the order of priority in Schuhl’s *Machinisme et philosophie* [*Machinery and philosophy*]: philosophy is what ‘explains’ the machine – insofar as any such explanation is possible – rather than the machine philosophy. It will be Koyré’s claim that the

technological *blocage* was neither the result of the economic laws of supply-and-demand, nor of social contempt for manual labour, but of an artificial divide within the province of Greek philosophy itself. As he goes on to sketch in the final pages of the essay, Greek philosophy's foundational opposition between ἐπιστήμη [*episteme*] and τέχνη [*techne*] – which is also crudely to say between theory and praxis, knowledge and craft – will fatally consign science and technology to separate and unequal spheres. On the one side, sciences like mathematics will articulate the theoretical rules by which all technology must operate but will not concern themselves with their own practical applications in fields such as engineering. On the other, technological practices like engineering will develop according to their own empirical processes of observation and experimentation by trial-and-error but will not innovate theoretically by, say, introducing hydraulic or wind power.²² For Koyré, what has become known as the question of the technological *blocage* is thus, in fact, two entirely separate questions which have been artificially collapsed together:

- a. Why the *technical thought* [*la pensée technique*] of antiquity did not progress as far as it could without going beyond the limits of τέχνη [*techne*], without rising to a superior level?
- b. Why the inventors of ἐπιστήμη [*episteme*] did not apply it to πράξις [*praxis*], why, in other words, Greek science did not develop a technology [*technologie*] of which it had already formulated the idea?²³

In a period where certain technical practitioners occupied a higher social status than previously recognized, and where many scientists were correspondingly less socially elevated, Koyré's essay thus concludes that Schuhl's zero-sum psychosociological model of the Greek class system cannot satisfactorily solve the question of a *blocage* which, as we will see momentarily, may perhaps remain unanswerable.

If 'Les philosophes et la machine' is largely content to remain at the level of an immanent critique of Schuhl's psychosocial history of machinery, Koyré subsequent review article in *Critique* called 'Du monde de l'à peu près à l'univers de la précision' (1948) – which takes its inspiration from such texts as Lewis Mumford's *Technics and Civilization* (1946) – begins to set out in more detail his own alternative theory of what may have caused the Greek *blocage*. To answer the question of what precisely was the missing link in Greek philosophy in this period – whose presence could have united the discrete spheres of ἐπιστήμη [*episteme*] and τέχνη [*techne*], pure knowledge with skill or know-how, the disciplines of mathematics and geometry with engineering and architecture – Koyré gives a surprisingly simple answer:

physics. It will be this new essay's thesis that 'Greek science could not give birth to a true technology [*technologie*]' – which he defines in the modern sense of a 'technical science and a scientific technics' or what we might today call a technoscience²⁴ – without the conceptual resources that modern physics provides. According to Koyré, what really 'causes' the *blocage* is thus a *philosophical* blind spot: 'such technology is strictly inconceivable', he writes, 'in the absence of a physics'.²⁵ For Koyré, what elevates modern physics *stricto sensu* above the competing regional branches of science and technology already available to the ancient Greeks – as well as the 'physics' described by Aristotle himself in the book of that name – is that its domain is precisely the interface *between* science and technology in the new field of applied science: 'physics', he writes, names the attempt to 'apply to reality the rigid, exact and precise notions of mathematics and, first of all, of geometry'.²⁶ Yet, he argues, Greek philosophy was utterly unable to imagine a universe in which the perfect circles, ellipses and straight lines of geometry could be applied to the apparently fuzzy, mutable, and ill-defined physical world, and so physics remained a conceptual path not taken with fatal results for technological development. If Greek philosophy could not conceive of a physics – and hence of a technology which properly synthesized science and technique for the first time – Koyré's (quasi-Heideggerian) explanation is that it was because its phenomenology of terrestrial (as opposed to celestial) space and time remained stubbornly pre-geometrical: the Greeks happily existed in the imprecise world of the 'margin of error [*marge d'imprecision*]', of the 'more or less [*plus ou moins*]' and of the 'approximate [*a-peu-près*]'.²⁷ In Koyré's celebrated historical narrative, this ancient 'world of the approximate [*monde de l'à peu près*]' will only be succeeded by the modern 'universe of precision' with the seventeenth century scientific revolution and the birth of modern technoscience.²⁸

In Koyré's account, then, we might more properly speak of a *philosophical blocage* in antiquity – which is to say the sheer unthinkability of modern theoretical physics by Greek thought – as the root cause of the technological *blocage* which will endure for almost two millennia. To be sure, Koyré's 'Les Philosophes et la machine' – which reflects self-consciously for the first time upon the methodological impasse or circularity that *blocage* studies had begun to describe by the mid-twentieth century – is now justly recognized as the single most theoretically sophisticated contribution to that field, but whether it genuinely breaks out of its fatal circularity, as the philosopher claims, perhaps remains to be determined. It may superficially appear, for example, that Koyré simply reverses Schuhl's own reversal of Aristotle's original thought experiment on slavery and technology – which is to say that he ends up promoting a

purely idealist, even Platonic, philosophical history of technology over an empiricist sociology or economy of technical transformations – but, of course, such a claim would arguably only reproduce the fatal divide between philosophy and technology Koyré’s entire project mourns. As the double-headed question he poses at the end of ‘Les Philosophes et la machine’ makes clear, what concerns him is neither pure ἐπιστήμη [*episteme*] nor τέχνη [*techne*], theory nor praxis, but rather the ‘excluded middle’ between the two where the scientist’s (empirically empty or contentless) knowledge and the practitioner’s (conceptually blind) skill or know-how constantly fail to encounter one another. Yet, a more plausible critique of Koyré’s essay may be that it does not so much break out of the circle of the technological *blocage*, as re-describe it at the level of philosophy. For Koyré, what ‘Les Philosophes et la machine’ does not and perhaps cannot really answer is the inevitable question of what, precisely, ‘causes’ the philosophical *blocage* that goes on, in turn, to cause the technological *blocage*, and its conclusion arguably ends up replacing his predecessors’ psychosociological vicious circle with an open philosophical circuit which is incapable of resolution: ‘It is quite normal for there to be in history – even in the history of spirit – inexplicable events, irreducible facts, absolute beginnings’, he observes, before concluding the essay by declaring that ‘It is impossible, in history, to evacuate the fact [*d’evacuer le fait*] and to explain everything’.²⁹ If we wish to find one way in which Koyré’s essay really does break decisively with the preceding literature in the field, however, it may be that this historical epistemology of Greek science and technology is no longer, in any meaningful sense, a study of slavery: Koyré’s slave is neither the historical materialist’s privileged mode of production whose work renders technological innovation uneconomical, nor the sociologist’s lowly βάνανσος whose abject social status exposes the anti-technological prejudice of the aristocracy, but just one more ‘inexplicable event’ – and an event which apparently has no bearing upon the question of the technological *blocage* whatsoever. In the next and final iteration of the theory of the *blocage*, however, the slave will (at least apparently) be rescued from the theoretical oblivion into which Koyré consigns it and restored to its classic Marxist-Hegelian position as the dialectical actor of history.

3. Anthropological *blocage*: Kojève

In his famous lectures on Hegel’s *Phenomenology of Spirit*, which he delivered between 1933 and 1939 at the École Pratique des Hautes Études in Koyré’s place, the philosopher Alexandre Kojève proposes a philosophy of the slave that bears little or no relation to previous work in

the field. It contains no discussion of the technological *blocage*, of the vagaries of the Ancient Greek class system or of the contemporary state of science and technology. Arguably, it does not bear any resemblance to Hegel's own philosophy either and is best viewed as an original account of slavery in its own right. To briefly unpack his reading of the *Phenomenology*³⁰ – which draw upon the 'existentialist' Marx of the *1844 Paris Manuscripts* and Heidegger's *Being and Time* to retroactively establish Hegel as a twentieth century philosophical contemporary – Kojève notoriously re-interprets the speculative history of *Geist* in anthropological terms: what Hegel famously calls the story of the 'coming-to-be of knowledge' is thereby transformed by Kojève into the story of the birth of the human. If Hegel's Preface to the *Phenomenology* argues that '[t]he life of spirit [*das Leben des Geistes*] is not the life that shrinks from death and keeps itself untouched by devastation but rather the life that endures and maintains itself in it',³¹ Kojève translates this speculative claim about the power of the negative into purely anthropogenetic terms where it becomes a narrative of how the life of the animal becomes human by taking on or assuming its own death. For Kojève, what makes life transcend its bare animality and take the form of a fully self-conscious and individual human being is its relation to mortality: 'Man is a (free) Individual only to the extent that he is mortal', he writes, 'and he can realize and manifest himself as such an Individual only by realizing and manifesting Death as well'.³² In what we might call Kojève's 'speculative anthropology' – with apologies for the violence of such a *catachresis* – the human being's dialectical dealing with death takes the paradigmatic form of an existential confrontation that never appears anywhere in Hegel, namely, the 'Risk of life [*Risque de vie*]':

What reveals and realizes freedom, according to Hegel, is the Fight for pure prestige, carried on without any biological necessity for the sake of Recognition alone. But this fight reveals and realizes freedom only to the extent that it implies the Risk of life – that is the real possibility of dying.³³

To stage this anthropogenetic moment where the animal becomes human by risking its own life in confrontation with the other, Kojève unsurprisingly devotes the bulk of his lectures on the *Phenomenology* to a violent re-narration of Hegel's classic master-slave dialectic. It is with this celebrated speculative drama of two consciousnesses battling for supremacy, he argues, that we can witness the life-or-death struggle that is the primal scene of the human itself. As Hegel's thought experiment makes clear, what transforms these two consciousnesses into master and slave respectively is that one is fearlessly willing to risk death in order to obtain mastery whereas the other is so terrified of death that they are willing to submit to slavery: '[t]he individual, who has not risked his life may well be recognized as a person, but he has not

attained to the truth of this recognition as an independent self-consciousness'.³⁴ Yet, of course, Hegel's claim will be that the slave's slavish terror that their life could end at the hands of the master will constitute their own exclusive point of access to the power of the negative – 'the absolute melting-away of everything stable, is the simple, essential nature of self-consciousness, absolute negativity, pure being-for-itself'³⁵ – and this negativity enables them to go on to transform the natural world into something for themselves, through their own work. For Kojève, in contrast, the master's decision to risk their own death is not merely one speculative moment in the early history of *Geist* which will quickly be negated by the far more transformative work of the slave, but nothing less than the paradigm of the moment of hominization itself: 'Man's humanity "comes to light" only in risking his life to satisfy his human Desire', he writes, '[w]ithout this fight to the death for pure prestige there would never have been human beings on earth'.³⁶ If Hegel famously concludes that the master's 'victory' is ultimately self-defeating – because it leaves them in a state of speculative inertia at an early stage of the history of *Geist* whilst the slave proceeds onwards to self-consciousness – Kojève perversely appears to derive the exact opposite (and curiously undialectical) lesson from this episode: the slave can only proceed to full self-consciousness, not through the peaceful activity of work, but by returning to the master's fearless decision to risk everything in a life-or-death struggle.³⁷ In what Kojève calls the 'final Fight'³⁸ between master and slave – a concept which, needless to say, plays no role whatsoever in Hegel's original dialectic either – the slave can apparently only transcend his slavery by a process of what Jean Hyppolite, in a strikingly Kojèvean phrase from his own much later reading of the *Phenomenology*, will call the 'becoming master of the master'.³⁹

If Kojève is superficially faithful to the letter of Hegel's original text in his insistence that the victorious master remains suspended in dialectical pre-history, whereas the defeated slave will progress towards the ultimate goal of absolute *Geist*, what we can already begin to see here is that this reading of the master-slave dialectic thus really performs a kind of reversal of the *Phenomenology*'s own dialectical reversal where the master, not the slave, 'wins' history. To progress to self-consciousness, Kojève's slave cannot simply leave behind the master and begin the work of transforming nature into something for themselves via their work, as they do in Hegel's original rendition of the dialectic, but must rather return to fight and defeat the master once and for all by taking their own existential 'Risk of life' and consequently becoming (despite Kojève's own explicit disavowals) something perilously like a 'new' master:

[T]he working Slave or ex-Slave must again take up the Fight for prestige against the Master or ex-Master: for there will always be a remnant of Slavery in the Worker as long as there is a remnant of idle Mastery on the earth [...] The Slave is obliged to overcome Mastery by a nondialectical overcoming of the Master...by annulling or putting him to death. And this annulling is what is manifested in and by the final Fight for Recognition, which necessarily implies the risk of life on the part of the freed Slave.⁴⁰

For Kojève, what finally emerges victorious from this ‘final Fight’ between master and slave is, in Agata Bielik-Robson’s words, a species of ‘Worker Warrior’⁴¹ who sublates the slave’s capacity to labour and the master’s capacity to fight into one single historical subject: ‘the working Bourgeois, to become a – “satisfied” – Citizen of the “absolute” State, must become a Warrior’, Kojève declares, ‘that is, he must introduce death into his existence, by consciously and voluntarily risking his life, while knowing that he is mortal’.⁴² In Kojève’s re-narration of Hegel’s *Phenomenology*, this ‘Worker Warrior’ will once again find its world-historical embodiment in the figure of Napoleon Bonaparte, and its ‘absolute State’ will again be the Napoleonic First Empire, but, as Bielik-Robson further observes, this image of an absolute state which forges itself in the crucible of revolutionary terror to become a kind of imperial worker’s utopia is presumably also intended to invite a far more contemporary parallel in his audience’s minds, namely, the newly emergent Stalinist USSR of the 1930s.⁴³

In Kojève’s re-reading of the master-slave dialectic, we thus encounter a perversely counter-Hegelian valorisation of the master who heroically risks death together with an almost Nietzschean contempt for the slave who herdishly clings to life:⁴⁴ what presents itself as a philosophy of the slave is, in reality, a species of *Herrphilosophie*. It goes without saying, of course, that Kojève’s speculative anthropology occupies a completely different philosophical universe from Espinas, Louis, Schuhl – and even his friend and colleague Koyré – but, nonetheless, we may still read his philosophy of slavery as an esoteric contribution to the dossier of *blocage* theory. At first blush, Kojève’s anthropological reading of the master-slave dialectic might appear to restore slave labour to its original Marxian position as the repressed material condition of ‘civilization’ itself. However, given its exclusive focus on the figure of the non-working master as the engine of history, Kojève’s real contribution to the theory of the *blocage* may actually be a perverse rendition of the classic *blocage* thesis that the very existence of slave labour was what *prevented* material progress in antiquity. To the orthodox argument that the *blocage* was a product of the Greek aristocracy’s exploitation of an army of

free slave labour, however, Kojève adds the Hegelian twist that the *slave* – and not the master – is responsible for their own enslavement in a state of technological entropy, stagnation or standstill. For Kojève (who is here, for once, ironically too faithful to a certain remorseless logic within Hegel’s original master-slave dialectic) the consciousness that becomes the slave exists in a state of *voluntary* servitude because they could always have chosen to die instead of submitting to enslavement at the hands of the master: ‘There is always something of the order of right in the fact that another enslaves me’, Hegel writes in his *Vorlesungen über die Philosophie des Recht* (1819-20), ‘I could have died’.⁴⁵ If the slave decides against taking the risk of life that would lead them to become the master, as Kojève would re-narrate Hegel’s existential choice, then they effectively consign themselves to the realm of dialectical pre-history: the slave is thus *themselves* what we might call the ‘human’ (or, strictly speaking, less-than-human) *blocaje* that produces the institutionalization of slave labour and prevents history from taking place. In the sense that his slave *qua* slave simply fails to transcend their animal nature and take the decision that would enable them to become fully human, we might be tempted to conclude that Kojève’s philosophy of slavery ultimately returns us, not to Koyré, Schuhl, Louis, Espinas or Marx but actually all the way back to Aristotle’s original theory of ‘natural’ slavery – if it were not for the fact that even Aristotle accepts the full humanity of the slave: Kojève’s natural slave is, by contrast, nothing more than a working – non-sabbatical – animal.

4. Beyond the *blocaje*: Agamben

In a 1966 article entitled ‘La notion de blocaje et l’antiquité Classique’, which was published two years after the death of Koyré and two years before that of Kojève, Schuhl surveys the current state of *blocaje* theory almost 30 years after the publication of his *Machinisme et philosophie* and finds little, if anything, has changed in the interim.⁴⁶ Schuhl begins by paying due respect to Koyré, as well as recent work in the field by Jean-Pierre Vernant⁴⁷ and Vasco de Magalhães-Vilhena,⁴⁸ but he ends up concluding that his original thesis remains largely intact: a technological *blocaje*, caused by a combination of various socio-economic factors, existed in ancient Greece. If Schuhl’s self-assured conclusion that nothing had changed in three decades is symptomatic of the fact that *blocaje* theory was itself beginning to stagnate in the post-War period, this tendency would become more pronounced over the ensuing almost sixty years: a new wave of historical scholarship of the ancient world has exposed the very idea of a

blocage to be a philosophical conceit which bears little relation to the complex empirical dynamics at play in Greek society. For Serafina Cuomo, whose *Technology and Culture in Greek and Roman Antiquity* (2007) can be taken as representative here, *blocage* theory rests on the unsustainable premise that ‘technology goes or develops in one direction, thus possessing a context-independent potential that is destined to actualize itself unless something [i.e., slavery] hinders it’.⁴⁹ In the absence of such assumptions – which also plague debates about the alleged lack of technological ‘progress’ in the post-Ottoman Arab world or imperial China – Cuomo concludes that the *blocage* ‘vanishes into thin air’⁵⁰ – and this has (almost) been the fate of *blocage* theory as well.

To draw this essay to a close, however, I want to observe the curious fact that what we have called early twentieth century French philosophy of technology – together with its hypothesis of a symbiotic correlation between the figure of the slave and the figure of the machine which appears under the name of the *blocage* – has recently re-emerged in a new biopolitical form in Giorgio Agamben’s *Use of Bodies* (2015). It is the Italian philosopher’s – admittedly provocative – ambition in this concluding volume of his long-running *Homo Sacer* project to recuperate an allegedly ‘liberatory nucleus’⁵¹ from within Aristotle’s notorious naturalist apology for slavery. As we will see momentarily, however, this archaeology will also require a qualified rehabilitation of the – now largely forgotten and discredited – theory of the technological *blocage* from Schuhl to Kojève. For Agamben, Aristotle’s cryptic claim in the *Politics* that the slave is a kind of human being whose work naturally consists of ‘the use of the body [*oson esti ergon he tou somatos chresis*]’⁵² does not describe a simple political, economic or philosophical exploitation of one body by another, as modern classical scholarship erroneously contends, but rather what he calls ‘a zone of indifference between one’s own body and the body of another’ which precedes and exceeds their constitution as subject and object.⁵³ In Agamben’s own archaeology of slavery, the Aristotelian slave’s ‘use of the body’ will go on to become the archetype for what he calls a ‘modal’ ontology or anthropology in which subject and object exist in an entirely immanent relation where they are freely and equally both user and used: ‘Human being and world are, in use, in a relationship of absolute and reciprocal immanence’, he argues, because ‘in the using of something, it is the very being of the one using that is first of all at stake’.⁵⁴

If Aristotle’s slave thus represents the promise of a human life emancipated from work, production or exploitation at the beginning of civilization, at least upon Agamben’s reading,

then modern technology at least appears to fulfil that promise at civilization's end: 'what both [slavery and technology] intend is not so much, or not only, an increase and simplification of productive labour but also, by liberating human beings from necessity, to secure them access to their most proper dimension – for the Greeks the political life, for the moderns the possibility of mastering the nature's forces'.⁵⁵ It is with this articulation of a certain symmetry between slavery and technology – which stand at either end of 'the human' – that Agamben re-opens the archive of *blocage* theory. 'According to the current opinion', he observes, 'the striking lack of technological development in the Greek world was due to the ease with which the Greeks, thanks to slavery, could procure manual labour' and *Use of Bodies* goes on to pluck the Schuhl-Koyré debate from the obscurity to which recent scholarship had consigned it.⁵⁶ However, the real common dominator between slavery and technology in this work will be neither Schuhl's psychosociology nor Koyré's historical epistemology, but, as unlikely as it sounds, Kojève's speculative anthropology. To be sure, Agamben's species of weak archaeological anarchism or communism, grounded in a use of bodies without work or production, could hardly be further away from Kojève's strong philosophical apology for a revolutionary worker's state – and the latter's name appears only fleetingly in *Use of Bodies* – but it is nonetheless possible to read the former's anthropological reading of Aristotelian slavery as a kind of silent dialogue with Kojève's own much-maligned anthropological reading of the Hegelian master-slave dialectic: Agamben's work even upholds such unambiguously Kojèvean pronouncements as, for example, the claim that Hegel's master-slave dialectic contains a 'constitutive anthropological function'.⁵⁷ For Agamben's own archaeology of slavery, however, Kojève's valorisation of the master – who rises to the status of the human, recall, by voluntarily taking the risk of life all by themselves – depends (as previous readers of Hegel like Bataille has already famously observed) upon a specious fantasy of self-transcendence whose outcome is predetermined: what makes possible the master's ascent to the status of the human is, in the former's account, the always less-than-human life of the slave. In this final volume of *Homo Sacer*, Agamben will thus nominate 'the slave' as one last name for that inclusive exclusion of bare life which he sees as the foundational gesture of sovereignty: 'The slave in fact represents a not properly human life that renders possible for others the *bios politikos*, that is to say, the truly human life'.⁵⁸

In the celebrated thought experiment on slavery and technology with which we began, Aristotle fondly imagines a future in which the invention of wonderful self-moving machines like Daedalus's statues and Hephaestus's tripods will render our need for slave labour unnecessary:

‘chief workmen would not want servants’, he writes, ‘nor masters slaves’. To conclude his own archaeology of slavery – whose larger truth-claims we are obviously unable to properly evaluate here – Agamben asks why the archaic ‘liberatory nucleus’ which was originally at work within the master-slave dialectic has today almost entirely disappeared and his answer is, remarkably, once again a technological *blocage*. It took the institutionalization of slavery, he argues, to turn the master-slave relation from a free and reciprocal use of bodies into the biopolitical capture of living beings for economic production that we know today. At the same time, slavery’s institutionalization also produced what he is not afraid to call a temporary ‘blocking [*blocco*]’ of the ‘development of the technological instrument’ which would not be overcome until modernity.⁵⁹ However, this essentially biopolitical knot which ties together slavery and technology – where both occupy the position of ‘less-than-human’ condition of the human – will prove more historically enduring and insidious than any theory of a socio-economic *blocage* imagines, at least upon Agamben’s reading. If slave labour really did block technological progress in Ancient Greece, he observes, then the emancipation of technology in modernity should, logically or correspondingly, have led to a blockage or decline of slavery but, needless to say, Aristotle’s imagined future in which all human beings are free because technology does all the work has never quite happened: slave labour has not been rendered redundant by modern technology, as philosophers from Aristotle to Marx have predicted, because technology has only invented new forms of physical, social and now psychic slavery – indeed a new planetary βάνανσοι [*banausoi*] called ‘humanity’ itself – which stretches from the sweatshop workers who construct our laptops, tablets and phones, say, to the free citizens who consume those products entirely pathologically and involuntarily in their homes. For Agamben, humanity’s relationship with nature today is no longer mediated through another human being (the slave) but through an inorganic apparatus (the machine) to the point of almost identifying with it (the human-machine) – and so the final consequence of the mutually constitutive relation between slavery and technology discovered by historians and philosophers of ancient Greece has been the production of ‘a new and unheard-of form of slavery’ in modernity.⁶⁰ In this latest confrontation between philosophy and the machine, Agamben thus not only offers a new answer to the question of why the relationship between slavery and technology has endured for two millennia but also why it will perhaps continue to do so indefinitely into the future: slavery and technology no longer block but mutually invent, catalyse and even accelerate one another.

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- ¹ Aristotle, *Politics* in *The Complete Works of Aristotle: The Revised Oxford Translation* ed. by Jonathan Barnes (Princeton: Princeton University Press, 1984), 1253b.
- ² Aristotle, *Politics*, 1253b.
- ³ Aristotle, *Politics*, 1253b.
- ⁴ Serafina Cuomo, *Technology and Culture in Greek and Roman Antiquity* (Cambridge: Cambridge University Press, 2007), 3.
- ⁵ Karl Marx and Frederick Engels, *Marx-Engels Collected Works*, vol. 25 (New York: Lawrence and Wishart, 1975), 168.
- ⁶ Alfred Espinas, *Les Origines de la technologie: étude sociologique* (Paris: Alcan, 1897), 8. All translations mine – AB.
- ⁷ Leopoldo Iribarren, ‘La technologie: paradigmes grecs d’une science sociale française’. *Artefact*, 15:1 (2021), 175–200, 183.
- ⁸ See Iribarren, ‘La technologie: paradigmes grecs d’une science sociale française’, n20.
- ⁹ Espinas, *Les Origines de la technologie*, 155.
- ¹⁰ Espinas, *Les Origines de la technologie*, 44.
- ¹¹ Espinas, *Les Origines de la technologie*, 80–1.
- ¹² Paul Louis, *Ancient Rome at Work: An Economic History of Rome from the Origins to the Empire* (London: Kegan Paul, Trench, Trubner, 1927), 37.
- ¹³ Louis, *Ancient Rome at Work*, 14.
- ¹⁴ Louis, *Ancient Rome at Work*, 67.
- ¹⁵ Louis, *Ancient Rome at Work*, 39.
- ¹⁶ Pierre-Maxim Schuhl, *Machinisme et philosophie* (Paris: PUF, [1938] 1947), 13–14. All translations mine – AB.
- ¹⁷ Alexandre Koyré, ‘Les Philosophes et la machine’ in *Études d’histoire de la pensée philosophique* (Paris: Gallimard, 1971), 318. All translations mine – AB.
- ¹⁸ Koyré, ‘Les Philosophes et la machine’, 325–7.
- ¹⁹ Koyré, ‘Les Philosophes et la machine’, 323.
- ²⁰ Koyré, ‘Les Philosophes et la machine’, 323–4.
- ²¹ Koyré, ‘Les Philosophes et la machine’, 316.
- ²² Koyré, ‘Les Philosophes et la machine’, 338.
- ²³ Koyré, ‘Les Philosophes et la machine’, 338.
- ²⁴ Koyré, ‘Les Philosophes et la machine’, 338.

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- ²⁵ Alexandre Koyré, 'Du monde de l' à peu près à l'univers de la précision' in *Études d'histoire de la pensée philosophique* (Paris: Gallimard, 1971), 341. All translations mine – AB.
- ²⁶ Koyré, 'Du monde de l' à peu près à l'univers de la précision', 342.
- ²⁷ Koyré, 'Du monde de l' à peu près à l'univers de la précision', 342.
- ²⁸ See Alexandre Koyré, *From the Closed World to the Infinite Universe* (Baltimore: Johns Hopkins University Press, 1957) for the classic account of this shift.
- ²⁹ Koyré, 'Les Philosophes et la machine', 316, 339. See also Ernest Coumet, 'Alexandre Koyré: la Révolution scientifique introuvable?', *History and Technology*, vol. IV (1987), numéro spécial, Proceedings of the International Conference Alexandre Koyré, 497–529 for a reading of Koyré's philosophy of history via his readings of Dilthey and Aron.
- ³⁰ See Arthur Bradley, 'Terrors of Theory: Critical Theory of Terror from Kojève to Žižek', *Telos*. 190 (2020): 157–176 for an extended account of Kojève's reading of Hegel. In this section, I am partially reproducing my original discussion in the above essay.
- ³¹ G.W.F. Hegel, *Phenomenology of Spirit* trans. by A.V. Miller with a Foreword by J. M. Findlay. Oxford: Clarendon Press, 1977), 19.
- ³² Alexandre Kojève, *Introduction to the Reading of Hegel: Lectures on the Phenomenology of Spirit*, assembled by Raymond Queneau, ed. by Alan Bloom and trans. by James H. Nichols, Jr. (Ithaca and London: Cornell University Press, 1969), 251.
- ³³ Kojève, *Introduction to the Reading of Hegel*, 248.
- ³⁴ Hegel, *Phenomenology of Spirit*, 114.
- ³⁵ Hegel, *Phenomenology of Spirit*, 117.
- ³⁶ Kojève, *Introduction to the Reading of Hegel*, 7.
- ³⁷ Kojève, *Introduction to the Reading of Hegel*, 271.
- ³⁸ Kojève, *Introduction to the Reading of Hegel*, 231.
- ³⁹ Jean Hyppolite, *Genesis and Structure of Hegel's Phenomenology of Spirit*, trans. S. Cherniak and J. Heckman (Evanston, IL: Northwestern University Press, 1974), 172.
- ⁴⁰ Kojève, *Introduction to the Reading of Hegel*, 231.
- ⁴¹ Agata Bielik-Robson, 'The Thanatic Strain: Kojève and Rosenzweig as Two Readers of Hegel', *Journal for Cultural Research* 19.3 (2015), 274–90, 280.
- ⁴² Kojève, *Introduction to the Reading of Hegel*, 69.
- ⁴³ Bielik-Robson, 'The Thanatic Strain', 279–80.
- ⁴⁴ Bielik-Robson, 'The Thanatic Strain', 279.
- ⁴⁵ G.W.F. Hegel, *Vorlesungen über die Philosophie des Rechts* (Hamburg: Meiner Verlag, 2000), 22. See also Grégoire Chamayou, *Manhunts: A Philosophical History*, trans. by Steven

Rendall (Princeton: Princeton University Press, 2011), 32–9 for a discussion of Hegel’s theory of voluntary servitude.

⁴⁶ Pierre-Maxim Schuhl, ‘La notion de blocage et l’antiquité Classique’, *Revue Tiers Monde* 7: 26 (1966): 251-3.

⁴⁷ Jean-Pierre Vernant, ‘Remarques sur les formes et les limites de la pensée technique chez les Grecs’, *Revue d’Histoire des Sciences* 10 (1957): 205–25.

⁴⁸ Vasco de Magalhães-Vilhena, ‘Progrès technique et blocage sociale dans le cité antique: esquisse de quelques problemes’, *La Pensée* 102 (1962).

⁴⁹ Cuomo, *Technology and Culture in Greek and Roman Antiquity*, 4.

⁵⁰ Cuomo, *Technology and Culture in Greek and Roman Antiquity*, 4.

⁵¹ Giorgio Agamben, *The Use of Bodies: Homo Sacer IV*, 2, trans. by Adam Kotsko (Stanford: Stanford University Press, 2015), 10.

⁵² Aristotle, *Politics*, 1254b 17-20.

⁵³ Agamben, *The Use of Bodies*, 22.

⁵⁴ Agamben, *The Use of Bodies*, 30.

⁵⁵ Agamben, *The Use of Bodies*, 78.

⁵⁶ Agamben, *The Use of Bodies*, 78.

⁵⁷ Agamben, *The Use of Bodies*, 36.

⁵⁸ Agamben, *The Use of Bodies*, 21.

⁵⁹ Agamben, *The Use of Bodies*, 79.

⁶⁰ Agamben, *The Use of Bodies*, 79.