

Terrestrial uprisings and living alliances

Non-human resistance to work and its challenge to the models of social critique

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Critical animal studies literature has placed a growing emphasis on animals' resistance to capitalist domination.¹ This tendency reflects a renewed understanding of the logic of capitalism conceived through the lens of capital accumulation, achieved thanks to the exploitation of human labour (whether free, forced or waged) as well as the primitive capture of natural forces. Jason W. Moore and Alyssa Battistoni, for example, describe capitalism as a system that 'puts nature to work', that is, an economic system that reconfigures various metabolic and environmental relationships with the purpose of producing value.² This idea also applies to the ecological systems of colonial plantations and contemporary industrial agriculture. In all these cases, animal resistance no longer figures as an abstract reaction against the impersonal domination of a machine-like subject, but as a form of concrete opposition to capitalists' attempts to put nature to work for profit. The study of non-human resistance to work thus offers an alternative to the frequent appeals to an abstract and unsupported ideal of 'interspecies justice.'³

In this way, environmental politics can extend the emancipatory socialist project of abolishing exploitation to non-human workers. However, often the manner in which this abolitionist project is presented seems contradictory: on the one hand, it is presented as an attempt to abolish all *animal* labour and the specifically speciesist modes of domination and heteronomy that underpin it; on the other hand, it involves a refusal of all *capitalist* labour, thereby framing the exploitation, even the alienation, of non-humans as being the result of a broader system of private property geared towards the accumula-

tion of capital.

In this article, I will examine the philosophical assumptions that underlie these two ways of thinking about the abolition of work. I will show that part of the environmental literature has inherited a tension specific to Marxist thought, derived from its conception of anthropological difference.⁴ I will then suggest that the usefulness of the category of work for non-human beings is, in the first place, that it serves to underscore living beings' intrinsic capacity for resistance whenever they are subjected to a regime of work. I will conclude by showing that the stakes of this question are twofold: on the one hand, the notion of work or labour implies a definition of the fundamental differences between human and non-human beings; on the other, the activity of non-human beings calls for a rethinking of the very concept of work.⁵

Resistance to work by non-human workers

Two positions stand out within the environmental literature on animal labour. The first position consists in extending the category of labour to some non-humans in order to denounce the exploitation of nature via the categories of the critique of political economy.⁶ The second position, by contrast, involves a rejection of this extension because it erodes the anthropological distinction between human labour and animal activity. In this sense, 'the essence of man' would reside in the difference between work that generates value and activities regarded as 'free gifts of nature.'⁷ The study of animal resistance offers a new way of addressing this problem.

Resistance to work stems from the capacity of hu-

man workers to stop deploying their physical, psychological and cognitive capacities to carry out technical activities that create new realities in the service of those who control production. Any resistance to, or refusal of, work proves that all labour activity presupposes a capacity for self-discipline or self-constraint, one which guarantees the consent of workers – however provisionally or reluctantly – to being put to work. In short, any individual who resists work demonstrates their nature as a worker. Therefore, the argument goes, if one can show that certain non-human animals resist work, one will have demonstrated that some animals do work, without undertaking a general and abstract account of anthropological difference.

Behavioural ethology has provided multiple evidence of such non-human resistance to work. A well-known case can be found in Jocelyne Porcher and Typhaine Schmitt's article, 'Do Cows Collaborate at Work? A Sociological Question.'⁸ The authors studied the relationship between cows and the milking machine in a mid-altitude dairy farm which kept 60 cows on zero-grazing. The farmer had established a set of rules that were followed by most of the cows. However, a few cows resisted by physically avoiding the farmer, hiding in a barn where they couldn't be milked, or, in another show of refusal, by walking extremely slowly until the farmer shouted at them. 'The implicit rules imposed by Christian [the farmer] are all known to the cows, but they sometimes still try to resist them.'⁹ On the farm, there was no procedure for getting the cows to the milking machine: the animals had to manage this by themselves in the waiting area. Porcher and Schmitt show that this sort of self-adjustment was not based on any conditioning or hierarchy, but consisted of arrangements organised amongst the cows themselves. Against this, some rebellious cows would block the machine and stop it working completely; they would start it up again as soon as the farmer came back to the cowshed. The others were instead keen to ensure that the process ran smoothly. As in the case of a factory horse, the problem with cows is that they are independent creatures. This is what the designers of milking machines are trying to control by turning the cows' natural strength into a natural resource. Porcher and Schmitt conclude their article by claiming that agricultural engineers and machine designers are in fact

'seeking to prevent the cows from working.'¹⁰ By reducing living beings to an object of labour rather than to their labour power or force, they limit their autonomy and thus also their capacities for resistance. Indeed, an animal's capacity to resist implies its ability to move freely and to cooperate with individuals of the same species. The transformation of living beings into machines that naturally produce commodities involves a reduction of their autonomy via various forms of technological control. Limited in their movement and in their relationships to each other, the capacity of certain animals to resist can thereby be reduced considerably.

Porcher explicitly refers to Marx's *Economic and Philosophical Manuscripts* of 1844 as a source of inspiration for her theory of animal labour. For her, the definition of work outlined in the *Manuscripts* represents an 'emancipatory relationship with nature, a transformative action on the world.'¹¹ Porcher interprets resistance to work as a struggle against alienation in favour of a freer type of collaborative work between humans and non-humans. Two lessons can be drawn from Porcher's work. On the one hand, there is no doubt that animals engage in work as part of human production. An obvious sign of this animal labour is animals' capacity for resistance, their refusal of work, something amply illustrated in Porcher's research. It should be pointed out that, unlike figures such as the philosopher Kendra Coulter, Porcher rejects the notion that wild animals engage in actual work or labour.¹² Work for Porcher presupposes a social division of labour, a separation between functions and of the people who carry these out. On the other hand, she views such resistance to work purely in terms of a struggle against certain forms of work performed by domesticated livestock. It is not therefore a matter of refusal of work as such, but of resistance to capitalist domination within the context of industrial agriculture. Many activists and researchers have criticised her for this reduction and not drawing what they see as the right political lessons from her framing of breeding practices as forms of domination. To be consistent, these critics argue, one should oppose not only all livestock farming but all forms of animal labour that are based on domination and thus relations of constraint and heteronomy. Such resistance should instead be viewed as the sign of a more radical rejection of work. What explains this difference in interpretation?



Among the wide array of accounts of animal resistance three main models for critiquing eco-social pathologies stand out: a critique of *alienation* within the framework of a sociology of work extended to animals; a critique of the *exploitation* of nature within the framework of a Marxist political ecology; and a critique of the *domination* of animals within the framework of moral anti-speciesism. Each of these three models of social critique rests on a different definition of work.

Animal alienation and human-animal collaboration

The critique of animal labour as a form of alienation is founded on an understanding of traditional livestock farming in which domestication is considered a type of collaborative work between humans and non-humans. Porcher formulates such a general definition of work on the basis of Marx's anthropology. The purpose behind the anthropological definition of labour formulated in the 1844 *Manuscripts* had been to make it possible to

both criticise alienated labour and defend the centrality of labour as an aspect of all human production and praxis.

In one of the best-known passages of his *Economic and Philosophical Manuscripts*, Marx defines the human being in terms of his 'species-being', that is, as a being that is determined via its transformation of nature by labour. But how does this sort of activity differ from the building of a hive by bees or that of a dam by beavers? Indeed, Marx explicitly notes in the same passage that 'animals also produce.'¹³ Although he does not employ the category of 'labour' (he reserves this for alienated labour in the preceding paragraph and for the activity of species-being in the next paragraph), Marx here allows for a non-human type of 'production.' Production, in this general sense, can be grasped as the transformation of natural matter into an object adapted to the satisfaction of the vital needs of a particular species. A swarm of bees needs a hive to shelter its larvae and produce honey just as the human reproductive unit needs a habitat in which to carry out productive and reproductive tasks.

Marx, however, then moves to a series of differences between human and animal needs. Animal production is 'one-sided', necessary and driven by instinct. Its products are immediately incorporated into the organism or used for the survival of the species. Human labour by contrast is universal, free from immediate physical needs. Capable of reproducing the whole of nature, humans fashion objects that are not consumed straightaway and that are tailored to the needs of the species. Finally, humans also make things in accordance with the laws of beauty. This text's philosophical goal is not to delimit the specificity of non-human activities, but rather to identify the essence of human life and production. More precisely, it is to draw out a critique of alienation out of an anthropological theory of labour and a definition of species-being. In the chapter on the labour process in *Capital*, Marx develops a close analysis, albeit with a different bestiary. The project was different, however, since what was at stake was not so much to demonstrate the universality of human labour, as to emphasise its intentional dimension.

The activity of species-being consists in actualising its potentialities in a relationship to nature characterised by the transformation of natural matter. Labour or work is thus the activity through which unity with nature is maintained via a continuous process of interaction between an 'organic' and an 'inorganic body'.¹⁴ The dispossession of the instruments and products of labour within alienated work thus brings about a separation from natural conditions that prevents humans from realising their natural objectivity. Deprived of the natural conditions of production and of the objective products of their labour, workers become pure subjects shorn of all objectivity, that is, robbed of their objective relationship to other living beings.

In this text, the essence to human [*le propre de l'homme*] is the achievement of species-being by means of work, that is, through the conscious modification of his environment as a species. The human being is species-being not just because he participates in the 'practical engendering of an objective world', but because, in doing so, he becomes conscious of being a member of a genus which transforms nature. The objects with which he is in relation, those of which he can have a sensible intuition, are already, or are potentially, the objects of a human transformation. The world of human experience is a world of objects. It is through contact with these

objects that man can experience his species-being, knowing that is he a member of the genus that produces or reproduces them. Thus, a woodcutter from the national forestry department will recognise in the arrangement of trees a form of organised activity undertaken since Colbert's 1669 decree on 'the proper use of forests'. This is the mark of his shared belonging to a human race which is aware of its capacity to produce and plan.¹⁵ In other words, although in this text non-human beings are said to produce, this production for Marx remains oriented solely at satisfying immediate physical needs and the reproduction of the species, whereas human work satisfies the universality of needs. That is, human beings seek to fulfil needs that are universal and through work grasp their universal, that is, species-wide, character. It would be astonishing if in the Marxian text – including that of 1844 – the universality referred to the idea of needs that would be the same everywhere and always. How, then, are we to understand the universality of needs? Firstly, it implies that the satisfaction of needs always presupposes a set of social activities involving exchange, cooperation and organisation. Needs are therefore universal in a first sense: the individual act of satisfying needs always presupposes the human community within which this act unfolds. There is no satisfaction of needs without a social organisation of the labour process. But the universality of needs also points to a second dimension of human action: humankind is potentially in relation with the nature as a whole. As Marx puts it, the whole nature is an immediate mean of subsistence and a spiritual condition of his intellectual life. Human relationships with each other and with the world are always redoubled at the level of consciousness or ideality, captured in the element of thought. It is the consciousness of need and the social nature of its satisfaction that implies the idea of universality, i.e. of what can be grasped in thought by any mind, insofar as the structure of need is itself social.

Marx's 1844 text remains difficult to interpret because it employs a homogenous conception of the animal as a criterium for distinguishing the human, determining human's nature negatively. Yet there is something of an unresolved gap between Marx's bestiary of social animals – such as beavers, bees and ants, which impose significant transformations on their environment – and Marx's definition of animal production centred on individual and specific needs. The characteristics Marx attributes

to non-human labour are only the remainder of a negation – or rather deprivation – of those he attributes to human labour. Rather than a gradualist theory of anthropological difference or a synthetic theory of the variation between the different modes of existence of living beings, Marx proposes a negative deduction of the properties of animal production from human production. Here, the function of animality is therefore to establish an anthropological difference and set up a critique of alienation on the basis of a distinction between ‘species-being’ and ‘species life’.

The animal is immediately one with its life activity. It does not distinguish itself from it. It is its life activity. Man makes his life activity itself the object of his will and of his consciousness. He has conscious life activity. It is not a determination with which he directly merges. Conscious life activity distinguishes man immediately from animal life activity. It is just because of his that he is a species-being [*Gattungswesen*].¹⁶

It is therefore through consciousness that humanity forms its relationship to the world, that is to say through the mediation of work which involves consciousness, that its ‘species-being’ is distinguished from the ‘life activity’ of animals.

Nevertheless, researchers in animal studies have extended this critique of human alienation to animals themselves. Barbara Noske for instance has shown that the fundamental aspects of alienation can be found within modern livestock farming. According to Noske, under the conditions of capitalist production, animals are (a) alienated from their own bodies and their offspring, (b) from their bodily functions, (c) from the wider community of their species, as well as from potential relations with humans and their natural environment, and (d) from their own species-being. For example, in industrial production, milk represents a sort of foreign and hostile force that completely dominates a cow’s life.¹⁷ Forced to produce as much milk as possible, the cow is subjected to a single-grain feed, growth hormones, milking machines and frequent rounds of artificial insemination. Not only is the cow thereby robbed of the products of her body, but these products are turned against her to the point where – her production capacity sometimes exceeding her capacity to metabolise food – her body begins to consume its own tissue in order to produce milk.¹⁸

But, as Omar Bachour has noted, a final dimension of

the theory of alienation is the worker’s separation from his ‘human essence’ or ‘spiritual nature’, which is therefore founded on a notion of anthropological difference. In this sense, the Marxian theory of alienation seems bound up with a philosophical anthropology. Despite this, a non-anthropocentric conception of species-being can still be defended.¹⁹ Thus, the theory of alienation could apply to those animals that may be said to *experience a dispossession* of their species-being under capitalist production. One does not have to look too far to spot the signs of such a deprivation within certain forms of animal resistance. Marx himself mentions this in *Capital* in relation to the factory horse. As he puts it, ‘a horse has a head of his own’, and so these creatures represent the worst kind of labour force for capitalists.²⁰ When the factory horse resists work, it is because it experiences this work as an imposition, a constraint depriving it of its freedom to act as it likes. An important point emerges here. Alienation presupposes an *experience* of dispossession, that is, a type of conscious awareness – however minimal – of being deprived of one’s autonomy. One sign of this awareness is resistance to work. The literature on animal revolts includes numerous cases of animals refusing to bow to the demands of economic rationality. From the sheepdog who abandons his shepherd owner because she ‘won’t stop harassing him’, to horses who refuse to accomplish their assigned tasks, to cows who jam their milking machines or the zoo animals who refuse to appear in front of visitors, such examples of resistance speak of an intentional refusal to work – albeit to varying degrees.²¹ It seems to me, then, that it is entirely possible to speak of alienation for living beings who experience the dispossession of their species-being under the conditions of capitalist labour. The direction followed by Porcher and Noske therefore seems like the right one, but their Marxian presupposition of a fundamental anthropological difference requires some revision.

Indeed, rather than an *absolute anthropological difference*, it would be better to speak of *interspecies relational differences*, namely, discontinuities particular to the specific historical contexts and relations in which a living being is situated. Thus, the categories of animality and humanity should not be abstracted from these specific settings. For instance, a human who hunts caribou as part of a hunter-gatherer society is not exactly the same kind of being as an exploited worker on an industrial farm pro-

ducing meat.²² Similarly, animals themselves possess relational identities that emerge from the various kinds of relationships in which they are engaged. A wild horse and a racehorse are not beings of the same nature.

Yet this model of animal alienation – like Marx’s model of human alienation – presupposes a form of non-alienated labour, a model of the relations of domestication that is both critical and normative. In the context of a theory of human-animal relations, this implies that we can distinguish between forms of livestock farming that promote alienation and other, less brutal, forms of domestication which instead favour non-pathological relations. However, Hannah Fair and Matthew McCullen have warned against such a model – as represented by Porcher’s critique of animal alienation – because it makes traditional livestock farming seem like a fulfilling kind of work. But domestication always involves forms of constraint, heteronomy and domination, which humans impose on nature through instrumental relations. We might therefore ask why all animal labour should not be abolished since it constitutes a form of heteronomy, an instance of the human power to dominate nature.

Source: Wellcome Collection.



Exploitation and emancipation

Unlike the critique of animal *alienation*, the anti-speciesist critique of animal *domination* does not envisage better working relationships between humans and animals. Animals’ resistance is taken as the expression of their general refusal to being put to work, that is, to being subjected to relations of domination founded on a purely instrumental relationship to nature.

Some animal liberation theories have formulated the problem of exploitation in terms of an ethics, that is, in terms of behaviour conforming to abstract conceptions of good or evil.²³ In most of these works, animals appear as beings who suffer, as victims of human exploitation. But it should also be noted that their agency – their capacity to engage with or *resist*, to collaborate or *refuse work* – is completely denied here. Animals can teach us nothing. This is a kind of moral paternalism that is also echoed in the many analogies in such texts between animal liberation and moral anti-racism and liberal feminism. In short, the problem of work is reduced to a moral injunction ‘to do no harm’, not a desire to transform social relations based on the division of labour and private property. Finally, by focusing on animals defined by their individuality or species, these approaches tend to relay a specifically modern blindness to the richness of interspecies environmental relations. Léna Balaud and Antoine Chopot have thus sought to mark out a third way between, on the one hand, the critique of alienation (which assumes that a mode of fulfilling human-animal collaborative work is possible), and, on the other, the anti-speciesist critique of animal domination.

In *We Are Not Alone: The Politics of Terrestrial Uprisings*, Balaud and Chopot portray non-human resistance as a sign of living creatures’ general refusal of work under the logic of capital.²⁴ Such resistances are not limited to those of a few charismatic animals endowed with intentionality, but include those of plants and, ultimately, broader ecosystemic relationships that resist profit-driven production. The amaranth crop in Argentina’s struggle against monoculture provides a good example of this. In Malvinas, Argentina, a movement against genetically modified MON810 soya seeds was set up in 2016. The company Monsanto was planning to build the largest genetically modified maize production centre in the world (50,000 hectares). Three years of occupation led by the women of Malvinas resulted in the abandonment of the project. But, over the course of a struggle in which many tactics were developed, an ‘interspecies faction’ was born.

An interspecies faction refers to a ‘heterogeneous, multifaceted grouping of living beings and sites whose combination of powers to do and feel, through joint actions, produces emancipatory political effects in a situation of domination and conflict.’²⁵ Unlike the notion

of *alliance*, which emphasises the connections between living beings, the notion of *faction* emphasises the power of division and rupture which aims to defend one vision of the world against another. A 'network of interspecies acts' makes it possible to introduce a discontinuity and political rupture within a field of extractivist practices. In the Argentinian case, Monsanto was planning to develop a seed variety to be sold to farmers every year genetically modified to resist Round-Up. This total herbicide contains a glyphosate molecule that affects birds and insects and contaminates water, air and soil. It can eradicate all weeds except the desired crop.

Things changed, however, when an amaranth of the species *Amaranthus Palmeri* developed some resistance to Round-Up. Through random mutation and natural selection, amaranth had multiplied the number of copies of the gene that the herbicide was supposed to target and eradicate. Now immune to Round-Up, it would unwittingly select it and thus interfere with the extraction of Monsanto's crop. Resistant to all known herbicides, the plant invades plantations and prevents the cultivation and harvesting of corn and soybeans. An Argentinian collective then gathered and produced amaranth 'seed bombs' to combat the contamination which results from the spraying of glyphosate on farmland. These are small balls of clay mixed with amaranth seeds. The plant can thus be considered an ally in the terrestrial uprisings described by Balaud and Chopot: it resists what the activists are also fighting against. From this perspective, the amaranth's resistance can be seen as an initiative one can participate in. It has led to losses of up to 70% in crop yields in those farmlands where this tactic has been used. This amaranth population has thus mutated into a 'super weed'. Some of the farmers affected by these tactics have gone back to using old peasant seed varieties and traditional methods to guarantee food supply. This shows that a network of human and non-human interspecies acts exists, constituting an alliance against the damage caused by single-crop farming and the use of genetically modified plant varieties. It is a victory for the complexity of the living against the genetic simplification caused by extractivist capitalism.

Unlike theories of animal alienation, the political ecology of terrestrial uprisings does not presuppose a general theory of labour. On the contrary, as with Donna Haraway and Maan Barua, these approaches tend to ad-

opt a limited definition of labour in which the labour process is equated with the process of capitalist valorisation.²⁶

Labour does not refer to all activities indiscriminately, but to any activity, human or non-human, enlisted in a value relation and contributing to the valorisation of money. It represents, therefore, any activity, whether commodified or not, which is essential for the generation of profit or for establishing the conditions that make the generation of profit possible.²⁷

Porcher's general theory of labour therefore sees human and non-human resistances as calls to *improve working conditions*. In the thinking of Balaud and Chopot, on the other hand, the absence of a general theory of labour leads them to view such forms of resistance as the expression of a general refusal to work. For them, it is not so much a question of defending forms of collaborative work as of defending spaces of free evolution, not interfering in the wild part of the natural world which refuses to be subjected to capitalist work. We can see that whether one has a general theory of labour or not is crucial for determining the sort of relationship one can envisage between the human and non-human spheres: in the first case, this relationship is understood in terms of human interactions with non-humans following a model of domestication; in the second, this relationship is one of withdrawal or separation, in the sense of letting the living emerge and exist in its singularity. The purpose of reducing the category of labour to its alienated capitalist form thus becomes clear: by merging labour with the process of capitalist production, all human or non-human resistances to work become part of a struggle against capital, thereby opening up the possibility of interspecies alliances or factions. Yet such a definition of labour is clearly too historically limited. There exist forms of labour that do not contribute to 'the valorisation of money', for example, the work of a peasant under a mode of production not subjected to the market. Nevertheless, this limited definition serves to highlight the role all ecological relationships today play within the circuits of capitalist valorisation, and to interpret the resistances of the living as part of a broader refusal of capitalist work.

The reintroduction of beavers to some forests in the north of England in the mid-2000s provides a good example of how animal labour can be integrated into the process of capitalist valorisation. Underlying this 'rewild-

ing' programme was a twin desire to preserve the natural wilderness and reduce public spending. Maintaining the wetland ecosystem and protecting biodiversity are necessary measures to ensure resilience against floods and droughts. These tasks have been delegated to beavers who are not just more effective but also cheaper than hiring professional forestry experts. The beavers harvest willows, clear up unwanted vegetation, place bundles of twigs in the rivers that provide a refuge for fish, dig canals in between the reeds and create open spaces in the water. As Jamie Lorimer notes in *The Probiotic Planet: Using Life to Manage Life*, keystone species like beavers are reintroduced into certain ecosystems with the aim of replacing costly human labour with practically free animal labour.²⁸ But is it correct to suggest, as some of the environmental literature does, that such work produces value?

Donna Haraway, for instance, has argued that animal labour produces value. This is what she writes in *How Species Meet?*:

Working dogs are *tools* that are part of the farm's capital stock, and they are *labourers* who produce surplus value by giving more than they get in a market-driven economic system.²⁹

If value creation depends on the expenditure of energy by living labour, it is indeed at first sight difficult to see how animal labour really differs from human labour. Animal labour in fact still involves the expenditure of some labour power in order to produce a commodity that is sold on the market. This is as true of wild animals as of domestic animals: honey produced by bees, wool by sheep, even fruit which is grown by cultivated plants. In all these cases, a living individual uses up a certain amount of energy to produce something that can be sold on the market (honey, wool, fruit). In this sense, value as such may be thought of as consisting of the *naturally* necessary labour time required to make a particular commodity.

In fact, this argument lies behind a whole current of environmental thinking that defends the idea that organisms and living beings more generally can produce exchange value. Such is the case of the environmental economics of Theodore Odum, Nicholas Georgescu-Roegen and Alf Hornborg.³⁰ These authors all appeal to an energetic or thermodynamic theory of value. Measuring

the amount of energy expended in the production of a commodity allows them to obtain a concrete measure of value. Value is thus measured in terms of the amount of energy expended in the production of a commodity. In line with this, for example, Odum and Hornborg have invented a new unit of measurement they call an 'EmJoule' (embodied energy) which measures the amount of solar energy synthesised by a crop to produce a particular agricultural commodity.³¹ The notion of energy expenditure in non-human production is thereby no longer confined to animal production, but extended to all beings capable of caloric metabolism or photosynthesis. This would make it possible to speak not only of animal work but also of plant work.

However, to say that plants and animals produce value (both use value and exchange value) does not mean that they produce surplus value, as Haraway claims in the quotation above. The notion of surplus value presupposes wages, that is, the payment of the prevailing value of labour-time, i.e. the socially necessary labour time required for subsistence. This amount corresponds to a share of the value produced, that must correspond to less than the total value produced – otherwise there would be no surplus value. For Marxism, the concept of value is not a universal concept but a socially and historically determined concept that only becomes hegemonic under capitalism. To say that nature does not produce surplus value does not mean that nature is not valuable, since it is made up of beings, processes and relationships that are priceless because irreplaceable. But nature only contributes to the production of economic value when the labour it supplies is quantified via a monetary relation that is the function of the time required to co-produce a commodity. While solar energy or the activity of plants *contribute* to the generation of wealth – that is, to the production of a good adapted to social needs – only the exchange value – representing the socially necessary labour time for its production – is expressed in the price at which that commodity is sold on the market. Indeed, the production of value through wage labour presupposes a prior set of natural conditions, a certain expenditure of non-human labour power or natural energy, which supply the energy later expended by the wage labourer. In agriculture, the production of value depends not only on human labour but also on the economic use of land (which can be formalised by a differential theory

of rent), on the biotic and microbiotic activity in the soil, on photosynthesis and therefore ultimately on solar energy. Social wealth, i.e. goods adapted to the satisfaction of social needs, is based on the natural forces that contribute to its formation. Exchange value, on the other hand, comes from the socially necessary labour time to produce a commodity. Nevertheless, capitalists' prices and margins can vary according to the ease of access to and use of natural resources. This then contributes to the formation of use value, without which the realisation of exchange value is impossible. What then is the difference between the appropriation of free unwaged labour (human or non-human) and the exploitation of wage labour?

Only salaried human labour produces surplus value because it is the only form of work that receives a wage in return for selling its labour power. The payment of a wage is the fulfilment of a contract whose purpose is the commodification of labour power. But the question then arises: why do some expenditures of energy (human ones) receive a wage while others do not (those that are non-human)? The aim of environmental economics has been to integrate precisely this expenditure of energy by non-human labour into the measurement of economic value so as to come up with a 'payment for ecosystemic services': for example, a water basin – legally constituted as a moral person through its proprietors – can receive money as compensation for the water purification service provided by the surrounding woodland canopy. But does this really count as a wage?

A wage is the monetary fulfilment of a contract designed to compensate the worker at the minimum level of reproduction of his or her labour power. 'The value of labour-power is determined, as in the case of every other commodity, by the labour-time necessary for the reproduction, and consequently also the reproduction, of this specific article. [...] For his maintenance', Marx goes on to explain, the living individual 'requires a certain quantity of the means of subsistence', and the wage must allow the worker to acquire this quantity.³² Human needs are social and historical. They vary according to the conditions of existence and level of production that pertain in a particular time and place, but also in relation to moral judgements about the ultimate purpose of human actions and needs. The wage is thus a monetary variable corresponding to the social variation in

human needs. We therefore see why only human beings can receive a wage.

A wage is the fulfilment of a contract for the sale of labour power, a contract which presupposes the participation of a formally free will. In this respect, the sort of transaction (monetary or in kind) defined by environmental economics is not a salary. In all such cases of 'payments for ecosystemic services', it is the legal owners or the moral person as represented by some humans who receive the payment. So, while there may indeed be forms of production that require the capitalist to maintain the conditions for the natural reproduction of a non-human worker, this does not involve the sale of labour power by its owner. But then, what is the difference between slave and animal labour?

Slaves, too, are commodities. It is not just their labour power that is bought, but their person as well. As Marx writes in *Capital*, Chapter 8 on the working day, 'The slave owner buys his worker in the same way as he buys his horse. If he loses his slave, he loses a piece of capital, which he must replace by fresh expenditure on the slave-market.'³³ Unlike machines, animals are living individuals with the capacity to produce more than they cost to reproduce their labour power. A sheep can produce a lot of wool with only a little pasture land, a bee a lot of honey with just some wild flowers and a hive. Contrary to a machine, which simply transmits its value without creating any additional value, a living individual (human or non-human) can produce goods worth more than the cost of reproduction. But unlike slaves, animals demand neither a wage nor freedom from bondage. It is therefore an interspecies relational difference – the capacity of practical reason to imagine a goal and to turn it into a law that the will can follow – that determines the possibility of a contract and thus of a wage.³⁴

In this respect, the fundamental difference between human and non-human work lies in human beings' symbolic, moral and political capacity to suspend their own exploitation by negotiating a contract or by pursuing a politics of emancipation.

The fact that there exist forms of non-human work does not mean that all work should be regarded under a single lens (either from a philosophical standpoint or through the framework of political economy), because non-human work can never produce surplus value, despite it always contributing in a decisive way to the form-

ation of wealth. The specificity of the wage form – the compensation for the sale of labour power by its holder – thus resides in the human discursive possibility of negotiating a contract or organising political struggle.

Interspecies alliances

Non-human resistances to capitalist labour seem to provide an alternative image of nature to that of ‘the moderns’. The intensification of natural productive processes in the service of valorisation leads to a reduction of nature’s passive modes of existence. Contrary to the idea – even if this idea is not entirely false – that modernity has reduced nature to a collection of completely passive objects, it could be argued that the environmental history of capitalism involves a pathological, disruptive and alienated intensification of nature’s productivity with profit as its aim. As a result, living beings that do not produce value appear as superfluous beings, an ecological excess population with respect to a regime of accumulation. Under contemporary capitalism, therefore, nature no longer figures as a pure passivity. It is not a collection of inert objects that can simply be appropriated; on the contrary, it is a set of productive processes whose utility depends solely on their potential for valorisation.

Does this mean we need to rethink the composition of the proletariat from an ecological point of view? Three positions seem defensible: the first would be to assert the absurdity of any consideration of the interests of living beings as exploited subjects. This position is certainly the most widely shared, and not incomprehensible from the point of view of human physical, cognitive and psychic capacities for political commitment. But it leaves aside the real experience of forms of domination and alienation experienced by non-human living beings. The second option would be to rethink the ecological composition of the working class, i.e., to think of exploited living beings as part of a class itself fragmented by interspecific differences. Such an option has the advantage of emphasising the shared experience of capitalist domination of labour, but shifts the problem to the articulation of interspecific differences within the class. It will be humans who take the lead in organising the multispecific class. A final solution, on the contrary, aims to propose interspecific alliances, i.e., the consideration of non-human interests while acknowledging the

possibility that human and non-human interests may diverge. But here again, two interpretations are possible: either the alliance has a tactical function in the effective overturning of relations of domination (as in the case of the Amaranth seed bombs in Argentina); or the alliance aims to name a moral, even theological-political pact, which would anticipate within contemporary practices the possibility of other relations between humans and non-humans, relations that spare divergent interests. These two interpretations are certainly not mutually exclusive, but the second invites us to relativise the importance of an anti-capitalist political strategy based on interspecies alliances, without denying its real interest in anticipating the world to come.

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Translated by Giovanni Menegalle

Notes

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3. Charlotte E. Blattner, Will Kymlicka and Kendra Coulter, eds., *Animal Labour: A New Frontier of Interspecies Justice?* (Oxford: Oxford University Press, 2020).
4. Ted Benton, ‘Humanism=Speciesism: Marx on Humans and Animals’, *Radical Philosophy* 50 (1988), 4–18.
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6. Jocelyne Porcher, *Vivre avec les animaux une utopie pour le XXI^e siècle* (Paris: La Découverte, 2014).
7. An illustration of this can be found in the work of Paul Burkett, who distinguishes work and nature, taking for granted that work is an exclusively human activity and nature external to the entire labour process. Two funda-

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8. Jocelyne Porcher and Tiphaine Schmitt, 'Les Vaches collaborent-elles au travail? Une question de sociologie', *Revue du MAUSS*, 35:1 (2010), 235–261.
 9. Porcher and Schmitt, 235–261.
 10. Porcher and Schmitt, 235–261.
 11. Jocelyne Porcher, 'Les Vaches rêvent-elles du travail? Bien-être animal et souffrance au travail. Entretien avec Jocelyne Porcher et Lise Gaignard', ed. Romain André et al., Jefklak, April 2017, https://jefklak.org/wordpress/wp-content/uploads/2017/04/PorcherGaignard_SiteJK.pdf.
 12. Jocelyne Porcher, Nicolas Lainé and Sébastien Mouret, 'Hommes et animaux domestiques. Le travail en partage', *Revue d'anthropologie des connaissances* 17:1 (2023), 8. See Kendra Coulter, *Animal, Work, and the Promise of Interspecies Solidarity* (New York: Palgrave Macmillan, 2016), 60.
 13. Karl Marx, *Economic and Philosophic Manuscripts of 1844* (Moscow: Progress, 1977), 73.
 14. Judith Butler has put forward a 'perspectivist' reading of this naturalist account of organic and inorganic bodies. See Judith Butler, 'The Inorganic Body in the Early Marx: A Limit-Concept of Anthropocentrism', *Radical Philosophy* 2.06 (Winter 2019), 3–17. For a critique of this perspectivist reading see Paul Guillibert, *Terre et capital. Pour un communisme du vivant* (Paris: Amsterdam, 2021), 74–77.
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 17. Barbara Noske, *Humans and Other Animals: Beyond the Boundaries of Anthropology* (London: Pluto Press, 1989).
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 21. Jocelyne Porcher, Nicolas Lainé and Sébastien Mouret, 'Hommes et animaux domestiques, Le travail en partage', *Revue d'anthropologie des connaissances* 17:1 (2023), 1.
 22. Tim Ingold, *The Appropriation of Nature: Essays on Human Ecology and Social Relations* (Manchester: Manchester University Press, 1986).
 23. See, for example, Tom Regan, *The Case for Animal Rights* (Berkeley: University of California Press, 2004); Peter Singer, *Animal Liberation* (New York: Harper Perennial, 2009).
 24. Léna Balaud and Antoine Chopot, *Nous ne sommes pas seuls. Politique des soulèvements terrestres* (Paris: Éditions du Seuil, Anthropocène, 2021).
 25. Balaud and Chopot, *Nous ne sommes pas seuls*, 326.
 26. Donna Haraway, *When Species Meet* (Minneapolis: University of Minnesota Press, 2008); Barua, 'Nonhuman labour, encounter value, spectacular accumulation', *Transactions of the Institute of British Geographers* 42 (2017).
 27. Balaud and Chopot, *Nous ne sommes pas seuls*, 143.
 28. Jamie Lorimer, *The Probiotic Planet: Using Life to Manage Life* (Minneapolis: University of Minnesota Press, 2020).
 29. Haraway, *When Species Meet*, 55 (my emphasis).
 30. Howard T. Odum and Jan E. Arding, 'Emergy Analysis of Shrimp Mariculture in Ecuador', Working Paper, University of Rhode Island, Coastal Resources Center, 1991; Nicolas Georgescu-Roegen, *The Entropy Law and the Economic Process* (Cambridge, MA: Harvard University Press, 1971); Alf Hornborg, 'The Commodification of Human Life: Labour, Energy and Money in a Deteriorating Biosphere', *The Palgrave Handbook of Environmental Labour Studies*, eds. Nora Räthzel, Dimitris Stevis and David Uzzell (Cham: Springer International, 2021), 677–697.
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 32. Marx, *Capital, Volume One*, 274.
 33. Marx, *Capital, Volume One*, 377.
 34. Marx, *Capital, Volume One*, 283–284.