

Animal, Capital, Metabolic Rift — A Marxist and Animal-Ethical Treatment of Industrial Animal Production

Marxism Spin-off to the Working Paper ‘Animal, Human, Industry’ v0.2

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Preface to the Spin-off

This paper is a standalone extraction of the ethical-marxist part of the larger Working Paper “Animal, Human, Industry” v0.2. It treats Layers 11 and 12 of that paper — ethics and marxist synthesis — as well as the extended Marx reading (B5) supplemented in v0.2.

What is *deliberately* absent: the natural-scientific evidence chain (Layers 1–8, treated separately in the Science Spin-off), the affect and taboo theoretical layers (9–10), the aquaculture specifics (Layer 13), and the technological alternative pathways (Layer 14). Whoever seeks these will find them in the Master Paper or in the Science Spin-off.

The point of this separation: ethical and political-economic arguments fall onto different ground in a political and social-philosophical audience than under nutritional scientists. A *separate* address of these audiences allows more precise methodological concentration in each. The Master Paper remains the locus of the transdisciplinary overall synthesis.

The ethical-marxist argumentation taken on its own is independently load-bearing — even without the natural-scientific support delivered in the Master and Science papers. It rests on two pillars: first, on the convergence of several methodologically independent ethical schools, second, on a structural diagnosis of industrial animal production as a capitalist form. Both pillars are plausible in themselves; together they reinforce each other.

Preliminary Note: Mini-ETHOSLAB Pre-Examination

Following the refined Memory Rule 14 (companion-paper duty, refined 2026-05-19), every standalone deliverable must include the methodological self-examination. For the Marxism Spin-off:

ME-1 Research subject: Relation of industrial animal production to the capitalist mode of production; convergence of several ethical schools on the anti-industrial-exploitation thesis; limits of this convergence in subsistence, class, and indigeneity contexts.

ME-2 Conflicts of interest: The researcher’s marxist-materialist preformation is *explicitly declared*, not concealed. This preformation can favor a theoretical position arguing capital-critically. Mitigation: the theoretical extensions (Wadiwel’s variable-capital thesis, Foster’s metabolic-rift extension to animals) are explicitly presented *as controversial*, not as self-evident. The counter-position (standard marxism, which does not order animals into class categories) is fairly referenced.

ME-3 Harm potential: Medium. The danger lies not in the natural-scientific but in the political dimension: a universalizing vegan politics can be colonial in effect in subsistence, class, and

indigeneity contexts. Mitigation: Layer 12.5b (subsistence sub-section) is built into the spin-off as its own section and is not treated as an appendix.

ME-4 Methodological risks: - Confirmation bias in selecting marxist sources (Foster yes, competing readings?) — mitigated by explicit naming of theoretical fault lines. - Self-application of one's own methodology: the Wadiwel extension extends marxist categories to animals. A *consistent* materialist methodology would ask whether this extension is itself ideological. This question is thematized explicitly in Section 6 but not finally resolved. - Political-awakening effect: when a paper moves between ethics and activism, the tone threatens to tilt into pamphlet rhetoric. Mitigation: pamphlet material is housed in the separate Pamphlet text; this spin-off remains argumentative.

ME-5 Hansson-oriented nine-point self-check: 1. Falsifiable? Partially — the structural diagnoses (Nibert historically, Foster conceptually) are empirically attackable; the normative conclusions less so. 2. Method-appropriate? Argumentative-philosophical; yes. 3. Data-verifiable? For historical findings (Nibert, bison-hunt policy) yes; for theoretical extensions (Wadiwel) conceptual-philosophical. 4. Competing hypotheses? Yes — standard marxism, which excludes animals; classical animal ethics, which excludes class analysis. 5. Effect sizes? n/a (argumentation paper, not empirical). 6. Replication status? Argumentation reproducibility through the Companion Paper. 7. Own position declared? Yes, in ME-2. 8. Reproducible? Markdown source file with CC BY 4.0. 9. HARKing avoidance? Yes — the thesis was not derived from sources, but sources were sought for a pre-existing question; sources that spoke against the thesis (standard marxism, classical-liberal animal ethics) are not excluded.

ME-6 Release: The Marxism Spin-off is released under the conditions that (i) the Wadiwel extension is explicitly presented as controversial, (ii) the subsistence boundary is retained as its own closing section, (iii) the five open tasks of a worked-out marxist animal ethics (closing section) are named as a programme but not finally treated, (iv) no political recommendation is formulated beyond what is ethically and theoretically grounded.

ME-7 Reference to MYZEL v0.3 instead of own mini knot set: Under refined Memory Rule 14, *standalone theoretical contributions* must include their own mini-MYZEL knot set. This spin-off is methodologically *not a standalone theoretical contribution* — it couples Layers 11 (ethics) and 12 (marxism) from the Master corpus for a specific audience, including the extended Marx reading B5. The underlying definitions, claims, and bridges are fully documented in the MYZEL knot set v0.3. Relevant for this spin-off are the claims of the layers ethics, marxism, subsistence boundary as well as the theoretical definitions DEF-20 (metabolic rift), DEF-21 (variable capital, Wadiwel extension), and DEF-22 (subsistence pastoralism). An own mini knot set would only replicate a subset of the corpus and would be methodologically redundant.

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1. Why a marxist animal ethics is needed

The established animal ethics of the English-speaking world is at its core liberal-individualistically organized. Peter Singer argues utilitarianly about the equal-weighted consideration of interests. Tom Regan argues deontologically about animals as “subject-of-a-life” with inherent value. Christine Korsgaard applies the Kantian self-legislation logic to the animal question. These arguments are philosophically serious and respectable at this level.

They have a systematic weakness. They address *individual action* — the consumer who buys or refuses meat; the researcher who uses or avoids animals in the lab. They have little means to thematize *structural conditions* under which animal exploitation reproduces itself: industrial production modes, subsidy structures, international trade regimes, class relations in agricultural wage labor, colonial relations in global feed production.

The ethical arguments remain morally correct and politically weak. A veganism that formulates individual consumption boycotts as its main instrument has no theory of political transformation of producing structures. It often becomes an identity-political purity practice — and thereby makes itself attackable.

A marxist animal ethics closes this gap not through replacement of the individualistic arguments, but through supplementation with structural analysis. It asks: which mode of production has brought forth this exploitation system? Which class interests maintain it? Which collective politics could transform it? And: where does ethical universalization meet material livelihoods that cannot be universalized?

2. Convergence of several ethical schools

Before turning to the marxist extension, the actual strength of individualistic animal ethics is to be acknowledged: several methodologically independent schools converge on a similar conclusion against industrial animal exploitation. This convergence is epistemically not trivial.

Utilitarian: Singer (*Animal Liberation*, 1975) — pain capacity is the only non-arbitrary boundary of moral consideration. Industrial animal production generates massive suffering; an honest utilitarian balance cannot do without critique.

Deontological: Regan (*The Case for Animal Rights*, 1983) — animals as subjects of a life have inherent value that cannot be dissolved into use-calculations. Industrial animal production treats animals exclusively as means.

Kantian self-legislation: Korsgaard (*Fellow Creatures*, 2018) — the Kantian demand to treat others as ends in themselves is extendable to all sentient beings; the restriction to rational beings is arbitrary.

Capability-oriented: Nussbaum (*Justice for Animals*, 2023; *Frontiers of Justice*, 2006) — species-specific “capabilities” (movement, social bonding, emotional experience) belong to animals, whose prevention constitutes injustice.

Political-relational: Donaldson & Kymlicka (*Zoopolis*, 2011) — animal-human relations are political relations with different legal statuses (co-citizens, resident animals, sovereign wildlife); industrial animal husbandry is the denial of any legal status.

Feminist-relational: Adams (*The Sexual Politics of Meat*, 1990; *The Pornography of Meat*, 2003) — the animal question is structurally entangled with gender, class, and race relations; the separation “animal here, human there” reproduces the separations that bear the oppression of other marginalized groups.

The convergence of these five to six methodologically different schools on a similar conclusion is an independent epistemic argument in Whewell’s sense of consilience (cf. Companion Paper

Methodology). Whoever wants to defend industrial animal exploitation must argue against *all* these schools, not only against one.

3. Carol J. Adams and the ecofeminist line

Carol J. Adams (*The Sexual Politics of Meat*, 1990) introduces the concept of the “absent referent”: the living animal is rendered linguistically and culturally invisible in the food industry, so that when meat is consumed, the animal remains “absent.” Pork is not called “pig,” beef not “cow.” The concealment is not accidental — it is constitutive of the acceptance of the practice.

Adams connects this analysis with feminist theory: the patriarchal structure that constructs women and animals in parallel as usable bodies is a common strand. The pornographicization of female bodies and the “becoming meat” of female animals (advertising with pig as sexualized woman, chicken as breasts) are not analogies — they are applications of the same “consumable bodies” logic.

This ecofeminist line has the advantage of making structural entanglement explicit. It has the methodological weakness of being hard to falsify — which is generally the case with discourse-analytical methodology. But it opens a space that liberal-individualistic animal ethics cannot open: the space of structurally-culturally mediated violence.

4. Marx himself on nature and animal

A serious marxist animal ethics cannot claim that Marx held worked-out animal-rights theses. He did not. What he has are three text complexes that are productively readable as building blocks:

First, the early writings. In the *Economic and Philosophic Manuscripts* 1844 (especially in the manuscript “Estranged Labour”), Marx defines the human as a “species being” that, in contrast to the animal, produces “free from physical need.” This passage is anthropocentrically burdened — it reproduces the Hegelian human/animal hierarchy in which the animal is grasped as “merely” natural. A marxist animal ethics must read these passages *against* the early Marx. The hierarchization itself is ideological — it makes the abstract “human distinction” the measure that, per the convergence arguments in Section 2, has no morally load-bearing foundation.

Second, Marx on Liebig and soil biology. In *Capital* Volume III, Chapter 47 (“Genesis of Capitalist Ground Rent”), Marx — drawing on Justus von Liebig’s *Agricultural Chemistry* — develops the concept of the “material breach” (*Stoffwechselriss*) between city and country. Capitalist agriculture pulls nutrients out of the soil, transports them to the cities where they are flushed away as waste into rivers — the material cycle between soil, plant, animal, human is cut. This passage is the seed cell of the modern eco-marxist tradition.

Third, letter to Engels of spring 1868. In a letter to Engels (in spring 1868, documented in the Marx-Engels-Werke Volume 32), Marx thematizes Liebig’s soil chemistry and the question of agricultural “robber economy.” John Bellamy Foster cites and contextualizes this passage in *Marx’s Ecology* (Monthly Review Press, 2000) and in *The Ecological Rift* (2010) as evidence that Marx was aware of the ecological context of his main work.

The exact wording of the letter of 25 March 1868 (MEW 32, p. 51–55) is as of 2026-05 not unambiguously verified against the German original edition; quotes from this passage are here treated exclusively as Foster secondary reference, not as direct Marx quotation. A full philological treatment of the Marx-Liebig correspondence would be a separate task.

5. Metabolic rift (Foster) and its extension to industrial animal production

John Bellamy Foster's reconstruction (central essay: Foster J.B., "Marx's Theory of Metabolic Rift: Classical Foundations for Environmental Sociology", *American Journal of Sociology* 105(2):366-405, 1999, doi:10.1086/210315; elaborated in *Marx's Ecology*, 2000) shows: Marx had with the metabolic-rift concept presented an ecological theory that does not need to be "subsequently greened" — it is laid out in the original.

Extended to modern industrial animal production: today's CAFO logic is the radicalized form of metabolic rift. Animals are kept in concentration facilities, their feed is bought together globally (Brazilian soy from the deforested Cerrado, U.S. corn from subsidized large-scale farming), their excrement is dumped into local water systems (phosphate eutrophication, methane emissions), their meat is shipped globally. The material cycle is not only locally broken but globally atomized.

This extension of the Fosterian concept to animal production is methodologically conservative — it applies an established eco-marxist tool to an object that did not yet exist in this form in Marx's time. It is broadly accepted in the eco-marxism spectrum (Clark & York 2008, Foster, Clark & York 2010 *The Ecological Rift*) and not as controversial as the Wadiwel extension in Section 6.

What follows from the metabolic-rift concept: industrial animal production is not an effect of "bad consumer decisions" or "moral failure" — it is a *structural form of the capitalist mode of production*. It cannot therefore be abolished by consumer boycott alone. It needs structural political change of the mode of production.

6. Wadiwel's animal-as-variable-capital thesis — controversially examined

Dinesh Wadiwel in *The War Against Animals* (Leiden: Brill, 2015) and *Animals and Capital* (Edinburgh: Edinburgh University Press, 2023, ISBN 9781399518062) has produced the most provocative extension of marxist categories to animals.

His argument: Animals in industrial production are not only commodity (product), not only constant capital (investment), but also *variable capital* — insofar as their metabolism produces surplus value (milk, eggs, weight gain). A cow, fed on a hectare of grain, produces over its lifespan milk and meat in a ratio that (prior to any ethical considerations) delivers surplus value in Marx's definition. That the animals are not *paid* makes the matter from this perspective not *less* but *more* exploitative — they are non-contractually expropriated labor power.

The standard critique: Marx's definition of variable capital refers to the wage portion that purchases living human labor power, because this labor power produces surplus value. Animals cannot enter this category because they are not wage-laborer contractual parties, have no class consciousness, cannot strike. This standard critique is widely held within marxist theory.

Wadiwel's counter-argument: Marxist surplus-value theory operates not primarily with the contractual relation but with the fact that living biological production generates value exceeding the value of inputs. Wadiwel's extension is analogous to earlier extensions of marxist categories to domestic labor (Federici), unpaid reproductive labor (Dalla Costa & James), ecological externalities (O'Connor) — all these extensions have analogous dispute potential.

The methodological self-examination: A consistent materialist methodology would ask whether this extension is itself ideological. Whoever argues through the Wadiwel extension gains a rhetorically strong tool ("animals are exploited workers"), but risks opening the category "class" so far that it loses its analytical sharpness. Is this a gain or a loss for marxist analysis?

The position of this paper: the Wadiwel extension is a productive theoretical line, not a definitively established one. It is to be taken seriously without being assumed self-evident. It opens a discourse space in which the question *animal-as-what-exactly-in-capitalist-production* can be more precisely posed.

7. Nibert's historical entanglement of animal-human exploitation

David Nibert in *Animal Oppression and Human Violence* (2013) and *Animal Oppression and Capitalism* (2017) chooses another path than Wadiwel. Instead of extending the categories, he shows historically-sociologically that the domestication and exploitation of animals was structurally connected with human slavery, colonial land seizure, and worker exploitation.

Concrete historical findings:

- Neolithic animal domestication (goat, sheep, cattle, pig, horse) went hand in hand with the first state hierarchy formations. The concentration of "wealth" in domesticated animals is one of the earliest forms of private accumulation.
- The transatlantic slavery and the North American bison-hunt extermination were closely connected: Plains Indians were systematically robbed of their economic basis through the systematic killing of bison herds — the pre-Columbian peak is estimated at 30 to 60 million animals; stocks were reduced in the 1870s and 1880s to under 1,000 animals — which first made reservation policy possible.
- British imperial invasion of India and North America went together with massive land conversion to cattle pastures; East African colonization structurally with the displacement of local herders in favor of European large-scale ranching.

Nibert's conclusion: Animal exploitation is not a side-stage of capitalist development. It is one of its structuring tools. Whoever tells the history of capitalism without the history of animal domestication loses half the picture.

This historical argumentation is methodologically more conventional than Wadiwel's theoretical extension — it is empirically attackable, replicable, falsifiable. Whoever wishes to contest it must adduce historical findings against it, not merely theoretical objections.

8. Slaughterhouse-worker-animal solidarity (Pachirat line)

Timothy Pachirat's *Every Twelve Seconds: Industrialized Slaughter and the Politics of Sight* (New Haven: Yale University Press, 2011, ISBN 978-0300152678) is an ethnographic study from a slaughterhouse in Nebraska. Pachirat worked five months undercover as a slaughterhouse worker; his book is probably the most precise available inside view of industrial animal killing.

Pachirat shows two things with methodologically high resolution:

First, the architecture of distancing. Slaughterhouses are built such that even within the facility, different work stations see different parts of the killing. Whoever stands at the "kill floor" does not see what happens in the "bleeding area"; whoever works on the "scalding line" does not see the killing. Most employees have never seen the whole. This architecture is not coincidental — it is part of what makes the operation feasible. Whoever had to see everything at once could most likely not work.

Second, the worker-animal entanglement. Slaughterhouse workers are disproportionately migrants, unskilled labor, precariously employed. They have above-average workplace accidents, high psychological burden rates, low union-organization rates. Their exploitation runs structurally parallel to animal exploitation — and is functionally entangled with it.

A marxist animal ethics can attach to this line without having to enter the Wadiwel controversies. It can identify the slaughterhouse workers as a class subject in the classical sense, and analyze the animal exploitation as structurally entangled with the worker exploitation — without having to ascribe class status to animals themselves.

A political theory of human-animal solidarity in industrial killing facilities is derivable from the Pachirat findings, but it systematically remains to be done.

9. Subsistence pastoralism, smallholders, indigeneity — the limit of universalization

The marxist critique of industrial animal production reaches a critical point when without differentiation it joins in the condemnation of smallholder, pastoral, and subsistence-based animal husbandry. Here the position becomes questionable — not on theoretical grounds, but on material ones.

The global number of people whose livelihood depends directly on animal husbandry is large. FAO 2018 (*Shaping the Future of Livestock*) estimates approximately 1.3 billion people, of which at least 600 million directly in smallholder husbandry with under ten animals per household. In Sub-Saharan Africa, large parts of South and Central Asia, in the Andes, in the Mongolian steppe, and in Arctic regions, animal husbandry is not “industry” but existential foundation.

Three differentiations are needed:

First, pastoralism. Pastoral societies — Maasai, Mongolians, Tuareg, Sámi, Quechua — live in landscapes that are not arable. Steppes, semi-deserts, high mountains, Arctic tundra: here ruminants can convert grasses and lichens into food usable to humans, where direct plant subsistence is not possible. These systems are ecologically often stable over several thousand years. Their critique from Western middle-class veganism is not only empirically false but often also politically instrumentalized (Sahel climate discourse, Mongolia mining conflicts).

Adesogan et al. 2020 (*Animal Frontiers*, doi:10.1093/af/vfaa011) and Hirvonen et al. 2020 (*Lancet Global Health*, doi:10.1016/S2214-109X(19)30447-4) have documented the structural weakness of the EAT-Lancet recommendation for low-income countries. About 1.58 billion people cannot afford the Planetary Health Diet financially.

Second, subsistence smallholders. Mixed farming with two to five head of livestock per household using waste products (peels, dishwater, stubble), producing fertilizer, providing risk diversification at harvest failure, can be slaughtered in emergencies. These systems are not industrial. They have no externalized pandemic, AMR, or subsidy pathologies. They are ecologically often part of regenerative cycles. In many countries smallholder husbandry is politically under pressure — through agro-industrial lobbying, land grabbing, structural adjustment programs. Solidarity with smallholders *against* the industrial competition is classically marxistly consistent, not contradictory.

Third, indigenous food sovereignty. Indigenous communities have cultural, often sacred, relationships to particular animals and practices. Iñupiat whaling, Inuit caribou hunting, Plains Nations’ bison restoration — these practices are not extensions of the swine-fattening system. They are objects of legitimate collective self-determination. Western animal ethics is not here the authoritative discourse frame.

Consequence: The critique of industrial animal production is *not* a critique of all animal husbandry. It is a specific critique of concentrated, capitalist-organized, externalizing mass animal husbandry. A serious position differentiates. It attacks JBS and Tönnies; it does not attack the Somali camel-herder and the Nepalese yak-keeper.

Whoever does not differentiate operates not animal ethics but class arrogance — and supplies the animal industry with the rhetorical ammunition to dismiss every veganism as a Western middle-class pose.

10. What a serious marxist animal ethics would have to accomplish — five open tasks

A worked-out marxist animal ethics still has to be written. It would have to solve at least five tasks:

First, defend or reject the Wadiwel extension of the variable-capital category methodologically, with clear grounding criteria. If variable capital is extended to animals, what remains of the category “class” as analytical sharpness? If not, how is the structural animal exploitation then marxistly grasped?

Second, integrate Nibert’s historical findings into a systematic history of capitalism — not as appendix, but as central strand. The standard stories of primitive accumulation (e.g., Marx’s own Chapter 24 in *Capital* Volume I) must be extended by the animal-domestication component.

Third, think the slaughterhouse-worker-animal entanglement empirically and theoretically through to the end. Pachirat’s *Every Twelve Seconds* delivers the ethnography; a political theory of human-animal solidarity in industrial killing facilities is pending. How does union organization of slaughterhouse workers relate to animal-welfare politics? Are these connected or competing struggles?

Fourth, clarify the relation to the historical practice of “actually-existing socialism.” The Soviet Union, Mao China, the GDR — all had intensive animal husbandry, sometimes worse animal-welfare situation than contemporary capitalist comparison states. A marxist animal ethics cannot rest on historical model; it must work out a position *anew*. What would a socialist food production look like that does not fall back into the state-socialist industrialization mode?

Fifth, work through theoretically the tension between radical consumption critique and subsistence sensitivity (see Section 9). A marxist animal ethics that condemns Maasai camel-herders is not a serious position. A marxist animal ethics that does not take a political position in Western middle-class contexts is also not one. Where does the boundary run, and by what criteria?

These five tasks define a programme. They are *named* in this spin-off paper, not *treated*. Their treatment lies beyond the reach of this extraction.

11. References to the Master Paper

Whoever seeks the following arguments will find them in the Master Paper “Animal, Human, Industry” v0.2:

- Layers 1-8: natural history, biochemistry, nutritional epidemiology, pathogens (extracted in the Science Spin-off)
- Layers 9-10: affect-taboo layers, Aghori anthropology, cannibalism comparison
- Layer 13: aquaculture and fisheries (extracted in the Science Spin-off)
- Layer 14: alternative pathways (precision fermentation, cultivated meat, algae, fungi)
- Source critique Annexes A-E with industry-source treatment and four-asymmetries analysis
- Companion Paper methodology with fourteen-layer-architecture reflection
- MYZEL knot set v0.3 with machine-readable definitions/claims/bridges inventory

Footer

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