



marxism & sciences



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includes A. G. Novokhatko’s commentary.*

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Five years is not a long time in the life of a journal, but it may be long enough for an initiative to begin confronting the question of its own form. A journal begins, after all, with an intention: to make certain questions discussable, to bring particular intellectual traditions and fields of inquiry into relation, to create a space in which work that might otherwise remain dispersed can encounter other work. If the initiative survives, however, intention gradually becomes activity. Manuscripts arrive, arguments are accepted and rejected, disagreements emerge, responsibilities are distributed, procedures develop, and relations are established among authors, reviewers, editors, and readers. What began as an intellectual project acquires a history of its own.

The question of form then ceases to be secondary. Yet form should not be confused with formalisation. Intellectual activity does not become more serious simply by acquiring more rules, procedures, categories, and standardized modes of presentation. Forms that initially facilitate an activity can eventually constrain it; conventions created for particular purposes can become ends in themselves. The familiar architecture of academic publishing offers enough examples: an argument is expected to assume the dimensions of an article, an article to follow a recognizable sequence of sections, and a piece of research to demonstrate its legitimacy through conventions that can sometimes become increasingly independent of the knowledge being produced. What was a means of communicating inquiry can thereby begin to determine what counts as inquiry.

But the opposite conclusion would be equally mistaken. The absence of explicit forms does not liberate intellectual activity from mediation. It merely leaves its forms implicit, habitual, or dependent upon particular individuals and relations of trust. A collective intellectual undertaking cannot indefinitely substitute goodwill for procedures, any more than scientific inquiry can substitute a prescribed procedure for the development of its object. Sometimes an inherited form must therefore be loosened; elsewhere, an implicit form must be made explicit. The relevant question is not whether intellectual activity should have form, but whether its forms remain adequate to the activity they are supposed to enable.

This question has become increasingly concrete for *Marxism & Sciences* as the journal enters its fifth year. Some of the developments we

announce with the present issue may initially appear unrelated: we have begun a new publication channel, “Studies”; following collective discussion, we have adopted an Editorial Governance Framework; and a new publishing portal is under construction and will be launched together with Issue 10. The present issue itself also contains a debate in which contributors disagree over questions that touch directly upon the journal’s intellectual concerns. These are developments at different levels—intellectual, editorial, institutional, and technical. Yet each poses, in its own way, the same practical problem: what forms are adequate to collective intellectual activity?

The answer cannot be unanimity. A journal with an identifiable intellectual orientation is not thereby a journal in which its contributors, or its editors, must agree. Indeed, an intellectual project incapable of accommodating substantive disagreement would have difficulty developing beyond the propositions with which it began. But neither is disagreement intrinsically productive. The mere coexistence of positions is no more a debate than the mere coexistence of disciplines constitutes a unity of knowledge. For disagreement to become intellectually consequential, positions must be sufficiently determinate to confront one another, arguments must be answerable, and the conditions must exist under which criticism can produce further thought. The problem is therefore not how to protect an intellectual project from disagreement, but how to give disagreement a form in which it can become part of that project’s development.

Siyaveş Azeri

On behalf of the editorial collective of Marxism & Sciences



Introduction: The Social Form of Knowledge and the Possibility of Emancipation

Siyaveş Azeri, Melda Yaman, Faik Onur Acar

The false choice between unity and fragmentation

The present issue of *Marxism & Sciences* is our first non-thematic issue. Its contributions address different objects and pursue different questions; they have not been assembled around a common topic. This raises a problem that a thematic issue, precisely by virtue of its organizing theme, can leave unexamined. What constitutes the unity of Marxist inquiry when its objects cannot be gathered under a single heading? Is such unity anything more than the fact that the authors work within, or engage critically with, a Marxist intellectual tradition?

One answer would be to treat the issue as a collection of inquiries whose diversity requires no further explanation. On this view, the sciences constitute distinct fields of knowledge, each with its own object, methods, and criteria of validity. A journal such as ours would provide a meeting place for their results. The breadth of its contents would then be its principal achievement. Yet an accumulation of knowledge, however extensive, does not by itself establish the relations among the objects investigated. The coexistence of different inquiries is not the same as their unity.

An apparently opposite answer would seek that unity in a theory or method common to all the contributions. Marxism would supply the general principles, and each science would apply them to its particular material. The unity of inquiry would thus be secured in advance, before the investigation of any determinate object. But this solution merely reverses the first. Where the encyclopedic conception accepts the separation of the sciences as given, the methodological conception attempts to overcome it by imposing upon them an equally given unity. Both proceed

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as though the objects of knowledge were already constituted independently of the activity through which they are investigated. Their difference concerns only whether these objects should subsequently be collected or brought under a common conceptual scheme.

The difficulty is not resolved by choosing between these alternatives. Scientific inquiry does not begin with an inventory of finished objects to which methods are then assigned. In the course of investigation, an object is progressively determined: relations initially treated as external may prove constitutive, familiar distinctions may lose their explanatory force, and what first appeared to be a self-contained thing may emerge as a moment of a wider process. The object with which an inquiry begins is therefore not necessarily the object it comes to know. Nor can its method remain indifferent to this development. The determination of the object and the development of the means by which it is investigated belong to one process.

This does not mean that thought produces the reality it investigates. The world does not owe its existence or its determinations to our concepts. Rather, the activity of knowing must discover and reconstruct relations that are not established by the investigator's will. An inquiry can be mistaken precisely because its object is not whatever the inquiry takes it to be. The inseparability of method and object thus provides no warrant for reducing reality to knowledge. It requires us, on the contrary, to distinguish the real object from its immediate appearance and from the conceptual forms through which we initially apprehend it.

But if the object and method of each inquiry develop together, what remains of the Marxian effort to grasp totality? Does the rejection of a universally applicable method leave us with nothing but a plurality of inquiries, each enclosed within its own determinations? Or must we introduce a third term that guarantees their unity?

The question cannot be answered by naming such a term and allowing it to perform the work of investigation. To invoke totality, dialectics, or even practice as an explanatory principle applicable in advance to every object would be to restore the methodological solution in another vocabulary. Yet the alternative need not be the abandonment of unity. We may instead ask after the common generic root of scientific inquiry itself.

Scientific knowledge is a historically developed form of human social activity. Human beings investigate an objective world through capacities that are neither merely individual nor recreated anew by each in-

investigator. Concepts, instruments, techniques, problems, and discoveries are inherited, transformed, and made available through the activity of others. Even an inquiry carried out in apparent isolation presupposes this accumulated social history. The possibility of knowing an object is inseparable from the practical and social development through which human beings have acquired the means to investigate it.

This common ground does not abolish the specificity of scientific objects. It cannot tell us in advance what a biological process, a mathematical relation, or a historically determinate social form must be. Nor does it imply that all sciences share an identical procedure. It establishes, rather, that their differences develop within a common history of human engagement with the world. Their unity is neither the sum of their results nor the identity of their methods. It is a problem to be investigated through the relations that constitute scientific activity and its objects.

This brings us to a further difficulty. If knowledge production is social activity, why do its branches so often confront one another as independent domains? Why does their differentiation appear to entail the absence of any constitutive relation among them? The question is not whether the sciences ought to be united by a common programme, but how their existing unity takes the form of separation. To address it, we must move from the generic social character of inquiry to the historically specific relations within which knowledge is produced.

The appearance of independent sciences

The differentiation of the sciences is a real achievement of human knowledge. The investigation of living organisms, celestial motion, and historically specific social relations gives rise to distinct problems, concepts, and techniques. Such differences cannot be overcome by declaring that all sciences concern the same world. Their unity must be established without dissolving the specificity of their objects.

Yet the differentiation of scientific activity does not establish the essential independence of its branches. That an inquiry develops concepts and procedures appropriate to its object does not mean that the object exists in isolation from the relations investigated by other sciences. Still less does it mean that the activity of knowing it can be understood apart from the social conditions of its own development. The boundaries within which a discipline operates may be necessary to a particular investigation without being absolute boundaries of the reality investigated.

The apparent independence of the sciences is therefore not simply an error of thought. It has an objective basis in the differentiation of

knowledge-producing activities, their institutions, and the forms through which their results are produced and circulated. To criticize this appearance is not to deny the reality of specialization, or to demand that every investigation immediately encompass the whole. It is to ask why differentiated activities come to confront one another as self-sufficient domains, and why the relations that make their coexistence possible appear external to them.

The question leads beyond the organization of scientific institutions. It directs us toward the historically specific social form of the division of labour through which knowledge production, like other human activities, is constituted as a moment of a social totality.

The capitalist social form of the division of labour

The division of labour is not, in itself, the source of this apparent independence. The differentiation of human activities, the development of specialized capacities, and the increasing complexity of their products are conditions of social development. The question is not why human beings undertake different activities, but through what relations those activities acquire their social character. A division of labour does not exist apart from its social form: the manner in which distinct activities are related is constitutive of what they are and how they develop.

Under capitalism, the social interdependence of productive activities is established through relations that confront their participants as external necessities. Activities carried out separately become moments of a common process of reproduction, but their social connection is not constituted through the conscious determination of a common purpose. The labour of others appears to each producer through the conditions of exchange, competition, and the reproduction of their own activity. What is social in substance thus takes the form of relations among apparently independent producers and their products. Their independence is neither absolute nor merely imagined: it is the historically specific form in which their dependence upon one another is realized (Marx 1992, 165–167).

This is the *asocial sociality* of capitalist relations. The social whole is not assembled by subsequently connecting activities that were independent to begin with. Their apparent independence is itself constituted through the relations that make them parts of that whole.

Knowledge production develops within this same social world. The differentiation of scientific labour has its own histories and responds to real differences among the objects investigated; it cannot be deduced directly from the commodity form. Yet the apparent self-sufficiency of

scientific activities cannot be understood without examining the historically specific relations through which they are sustained and made social. Their separation is not simply the absence of connections. It is a form in which their connections exist—and one that can make those connections appear as powers belonging to disciplines, institutions, or their products themselves.

Fetishism and the objective appearance of separation

The apparent independence of differentiated activities cannot be explained simply by a failure to recognize their interconnections. Under capitalist relations, the social character of activity assumes forms in which the relations constituting it confront individuals as powers independent of their own practice. This is the problem of fetishism. It is not merely that people attribute autonomy to things, institutions, or processes that are in fact connected. Rather, historically determinate social relations acquire an objective form in which their social character is obscured. The appearance is real as an appearance: it arises from the way the relations themselves are constituted (Ibid., 164–165).

A critique of this appearance must therefore do more than restore missing connections between already established objects. To show, for example, that scientific research depends on technology, that technology depends on labour, or that both depend on economic resources is necessary but insufficient. Such an account can leave each sphere intact as an independent entity and treat their unity as the result of their subsequent interaction. The more difficult task is to investigate how the spheres themselves, together with the boundaries that seem to separate them, are historically constituted. This does not render every disciplinary distinction illusory. It makes the claim of *self-sufficiency*, the assumption that a sphere can be adequately understood from within its apparently given boundaries, an object of criticism.

Fatih Müldür's contribution, "Ascending' Theory to Reality: Materialist Dialectic and Revolutionary Practice," addresses a related problem at the level of materialist method. Beginning with Feuerbach's break from earlier materialisms, Müldür argues that Marx's decisive advance lies in grasping human activity not as an object of contemplation but as practical-critical, transformative activity. On this account, theory is neither an autonomous realm of abstractions nor a passive reflection of an independently completed reality: it emerges within social practice and returns to it as a moment of its transformation. Müldür thus presents materialist dialectics as a unity of logical, theoretical, and practical-critical activity, rather than a method externally applied to its object.

The significance of this argument for our present question is that the independence of thought cannot be overcome by merely declaring its dependence on material life. Its relation to that life must be reconstructed through the historically determinate activity in which thinking itself becomes possible and effective. The same demand applies to the sciences: their unity cannot be supplied from outside their objects, but must be investigated through the social relations in which knowledge is produced. That investigation now requires a closer account of how knowledge-producing activity is reproduced within capitalist society.

Knowledge production within the totality of capitalist reproduction

The social conditions of knowledge production become clearer once we distinguish an activity's immediate purpose from the relations through which it is reproduced. Scientific work may be undertaken in a capitalist enterprise, a public university, an independent research institute, or outside any formal institution. Its results may become commodities, enter production as technical innovations, circulate without payment, or remain unused for decades. These differences cannot be disregarded. In particular, the fact that an activity takes place under capitalism does not make it directly productive of surplus value. Yet neither does its distance from immediate commercial exchange place it outside the social totality in which its material means, institutional conditions, and possibilities of continuation are secured.

Capitalist reproduction is not the aggregate outcome of activities pursuing unrelated ends. It is a historically specific process in which the production of wealth is subordinated to the self-expansion of value (Ibid., 167–169). This imperative does not determine every scientific question or discovery in advance; nor does it exhaust the purposes for which knowledge is produced. It nevertheless mediates the conditions under which research can be sustained, the uses to which its results are put, and the forms in which knowledge becomes socially available. Scientific activity can pursue ends irreducible to valorization while depending upon resources and institutions whose reproduction is conditioned by it. Its relative autonomy is thus a real, but socially constituted, relation.

Kamir F. Gemal's review article, "Revisiting Harvey's Anti-Value: A Critical Review of International and Brazilian Literature," brings a further determination of this totality into view. Through a critical reconstruction of David Harvey's concept and its subsequent uses, Gemal ar-

gues that anti-value should not be conceived as an external force confronting value, but as an immanent determination of value itself: the ever-present possibility that value will fail to be realized or will undergo devaluation. The movement of capital is therefore inseparable from the possibility of its interruption. Gemal's examination of the concept also insists on distinguishing anti-value from non-value and other negative categories rather than gathering different processes under an insufficiently determined name.

This intervention matters to our argument because the unity of capitalist reproduction is not a harmonious coordination of its differentiated moments. The relations that make activities parts of a common process also generate tensions and limits within that process. As Gemal's discussion of devaluation indicates, the very conditions through which capital reproduces itself can threaten its continued movement. To grasp a social totality, then, is neither to deny the specificity of its moments nor to assume that their interdependence guarantees their compatibility. It is to investigate the determinate relations through which they are constituted, sustained, and brought into contradiction.

The question that follows is whether these relations can be understood simply as a particular *organization* of otherwise independent activities. If not, we must specify what is meant by their social form.

Social form is not merely organization

If the unity of capitalist reproduction is constituted through relations that also generate its contradictions, it cannot be adequately understood as a problem of organization alone. Organization concerns the arrangement and coordination of activities: how tasks are distributed, decisions made, resources allocated, and results communicated. These are indispensable questions. Yet they do not, by themselves, tell us why activities take the particular social forms they do, or why the relations among them confront their participants as necessities independent of their collective will.

The distinction becomes apparent when we consider the division of labour. A change in the organization of production may alter who performs a task, how workers cooperate, or who exercises authority over the labour process. But the capitalist character of that process cannot be established, or overcome, simply by describing its organizational arrangements. It concerns the form in which labour becomes social, its products acquire value, and the reproduction of human life is mediated by the accumulation of capital. These determinations are not additional features attached to an otherwise complete organization of production.

They constitute the historically specific relations within which that organization exists (*Ibid.*, 470–480).

The same distinction applies to knowledge production. Greater cooperation among disciplines, wider access to research, and more democratic scientific institutions may transform the conditions under which knowledge is produced and shared. None of these developments should be dismissed. But connecting scientific activities more effectively does not, in itself, explain the social relations through which they have come to exist as apparently independent activities. An interdisciplinary programme can bring together the results of different inquiries while leaving their objects, institutional boundaries, and conditions of reproduction unexamined. Coordination may overcome particular obstacles created by separation without yet grasping the form of separation itself.

The distinction is not between activities that are connected and activities that are not. It is between taking their connections as relations among already constituted elements and investigating the social relations through which those elements acquire their determinate character. This is why the unity of the sciences cannot be achieved by an organizational decision. The question is not simply how knowledge-producing activities might cooperate, but how their existing forms of separation and cooperation are themselves constituted.

The unity of inquiry and the material reproduction of life

The unity of the sciences is neither an identity that precedes their differentiation nor a connection subsequently imposed upon independent fields. It must be reconstructed through the determinate relations in which their objects and activities develop. Under capitalism, this unity assumes a contradictory social form: knowledge-producing activities are moments of a common process of reproduction, yet their interdependence confronts them as an external condition. Their apparent independence is not the absence of social relations, but one of the forms those relations take.

The historically specific unity imposed by capitalist reproduction must, however, be distinguished from the common social and practical ground of scientific inquiry. Knowledge does not originate in valorization, even when the conditions of its production and application are mediated by it. This distinction allows us to grasp both the capitalist form of scientific activity and the possibility of its transformation without treating capitalism as the necessary foundation of knowledge itself.

The inquiry must therefore move beyond the forms in which knowledge is produced to the material conditions that make its production possible. Scientific activity presupposes living human beings, their historically developed capacities, and their practical engagement with nature. The reproduction of knowledge cannot be separated from the reproduction of human life. It is to the relations among labour, nature, and social necessity that we now turn.

From knowledge production to the reproduction of life

The preceding discussion concluded by locating the production of knowledge within the reproduction of human life. This is not a move from one self-contained sphere to another. It develops the same argument: scientific activity presupposes living human beings, historically formed capacities, material means, and a practical relation to nature. Economy, society, and nature cannot therefore be treated as independent domains, any more than labour, freedom, and the human relation to nature can be understood separately. Human beings live only by continually producing and reproducing the material conditions of life. They transform natural materials, cooperate with one another, sustain bodies and capacities, and reproduce the social relations through which these activities are organised. What appears as “the economy” is a historically specific organisation of this broader material process.

Labour is central to this process, but only if it is not identified with employment or reduced to the labour that directly produces commodities. At the most general level, labour mediates the interchange between human beings and nature. It is an enduring condition of human existence because food, shelter, care, and the other means of life do not appear in forms ready for human use. Yet this general necessity never exists outside determinate social relations. What is produced, whose needs count, how labour is divided, and who controls its conditions and products are historical questions.

Capitalist relations give particular answers to these questions. The production of use values is subordinated to valorisation; the capacity to labour assumes the form of a commodity; and access to the means of life is mediated by money. Competitive accumulation then confronts individuals and institutions as an objective imperative, directing investment, reorganising labour, shaping technological development, and sacrificing human needs and ecological conditions to the expansion of value. Capitalism thereby presents its own imperatives as necessities of social life. But the need to reproduce life is real, whereas the need to

produce profit is not transhistorical. What appears as the neutral demand of “the economy” is a historically specific command over social labour and natural wealth.

The hidden conditions of capitalist reproduction

The material reproduction of life extends beyond the immediate production process. Living bearers of labour-power must be sustained from day to day and renewed across generations. Food has to be prepared, homes maintained, children raised, illness attended to, and physical and emotional capacities restored. These activities are not supplementary services added after production. They are necessary moments of social reproduction, even though many of them are not organised through the wage relation or directly subordinated to capital. They reproduce not only labour-power but living persons, social capacities, and relations.

The apparent separation of economy from household and of production from reproduction conceals this dependence. Much of reproductive labour is unpaid or poorly paid, performed disproportionately by women, and naturalised as a familial obligation rather than recognised as socially necessary labour. Patriarchal relations make women responsible for sustaining others and permit men to benefit from and exercise power over women’s labour and bodies. Capital, in turn, presupposes the reproduction of labour-power while neither fully organising nor guaranteeing it. When public services are withdrawn, care is commodified, or households are made to absorb the effects of economic and ecological crisis, this burden is intensified rather than eliminated. The reproduction of life cannot be derived from the circuit of capital, although capital continually reshapes its conditions.

Nature is subjected to a parallel abstraction, but the parallel should not efface the difference between living activity and natural processes. Capital treats soil, water, energy, and ecosystems as inputs into production or as assets capable of bearing a price. Their qualitative differences, temporal rhythms, and limits are translated into the terms of cost, return, and substitutability. Yet ecosystems cannot be regenerated according to the temporal demands of accumulation, and destroyed conditions of life cannot necessarily be replaced by another commodity.

Crises of care and ecological crises thus disclose distinct but related limits of capitalist reproduction. Neither reproductive labour nor nature lies simply outside capital: both are reorganised through capitalist relations. Yet neither can be reduced to value production and accumulation. Capital presupposes living and natural processes that it does not create, while its own reproduction can exhaust the people and undermine the

ecological conditions on which it depends. Crisis is not an external disturbance imposed upon an otherwise autonomous economy. It exposes the material dependencies that capitalist forms organise and conceal.

Freedom and the social organisation of necessity

These relations alter the question of freedom. Freedom cannot mean release from every form of dependence, because human beings remain dependent on nature, on one another, and on the labour required to sustain life. Nor can formal rights secure freedom while the majority must sell their labour-power in order to live and while socially necessary activity is governed by accumulation. The relevant question is how dependence and necessary labour are socially organised. Who decides what is necessary? How is indispensable work distributed? Which necessities arise from human and ecological requirements, and which are imposed by capitalist social relations? Emancipation begins by making these distinctions politically contestable.

Joshua Graf's contribution, "Labour, Nature, Freedom and Universalism: Communism between Capitalist Longevity and Radical Break," develops this problem through Marx's critique of bourgeois freedom. Graf rejects the familiar claim that Marx sacrificed individual liberty to equality or collective purpose. Marx's objection was instead directed at an abstract conception of freedom that isolates the individual from the material and social conditions of action. The formally free worker enters the market as the owner of labour-power but must sell that capacity because the means of subsistence and production are controlled by others. Juridical freedom is real, yet its capitalist form is inseparable from a material compulsion that sharply limits what most people can do with it.

Against the image of the naturally independent individual, Graf reconstructs freedom as relational and historically conditioned. Human beings enlarge their capacities through cooperation, accumulated knowledge, and a division of labour; the development of individuality therefore depends on social powers. Communism, in this account, is directed towards the free development of individuals rather than their subordination to an undifferentiated collective. Its material premise is the reduction of necessary labour time and the expansion of disposable time. Yet Graf also resists a simple opposition between labour and freedom. Some labour remains indispensable, while consciously chosen and collectively organised activity may itself become a field for developing human capacities. The task is not to imagine the disappearance of necessity, but to transform our relation to it.

This argument gives political content to Marx's distinction between the realm of necessity and the realm of freedom. The realm of necessity cannot simply be left behind: human beings must continue to reproduce themselves and regulate their interchange with nature. Its organisation can nevertheless become freer. Necessary labour can be reduced, shared more equally, performed under better conditions, and directed towards democratically determined ends. Such a transformation requires more than a change in ownership. It must challenge inherited divisions between productive and reproductive labour, mental and manual activity, free time and work, as well as the gendered and racialised allocation of exhausting tasks. Disposable time for some cannot constitute communist freedom when it rests on necessities rendered invisible and borne by others.

Ecological limits sharpen rather than cancel this conception of freedom. Graf argues that a communist politics cannot universalise the resource-intensive forms of consumption enjoyed by privileged groups in the capitalist centres. Such a model is neither materially possible nor normatively desirable. At the same time, ecological politics cannot impose an abstract programme of scarcity on regions and populations whose needs remain unmet. Freedom must be reformulated through collective decisions about sufficiency, differentiated needs, and planetary limits. A post-capitalist society would also inherit damaged ecosystems, unequal productive capacities, and the growing labour of mitigation, adaptation, and care. Communism must therefore be understood both as a radical break with accumulation and as a transformation undertaken within conditions produced by capitalism.

Ecological limits and the problem of mediation

Pietro Daniel Omodeo's "The Dialectics of Ecological Civilization and Degrowth" approaches the same field through a critical examination of John Bellamy Foster's recent eco-Marxism. Omodeo recognises the force of Foster's account of the metabolic rift, unequal ecological exchange, and the contradiction between endless accumulation and nature's regenerative capacities. Particularly important is Foster's critique of "natural capital." Pricing ecosystems appears to acknowledge their importance, but it converts their distinct qualities into exchangeable assets and encourages the belief that destroyed processes can always be replaced. Against this financialisation of nature, ecological critique must insist on physical limits, non-substitutability, and the irreversibility of many forms of damage.

Omodeo nevertheless argues that identifying capitalism as the source of ecological destruction does not by itself yield an adequate philosophy of nature or a viable politics of ecological socialism. He questions Foster's attempt to ground ecology in a general dialectics of nature when this risks effacing the specificity of consciousness, praxis, and political conflict. The alienation of labour and the destruction of ecosystems are connected through capitalist relations, but they are not identical processes. Their unity cannot be secured by applying the same philosophical category to human subjects and natural systems; it must be demonstrated through the historically specific relations that organise both the exploitation of labour and the appropriation of nature.

The same demand for mediation informs Omodeo's political criticism. Foster presents planning, Chinese "ecological civilization," and degrowth in the affluent North as elements of an ecosocialist transition. Omodeo accepts the necessity of planning and the inadequacy of growth as a measure of social well-being, but challenges the inference from these premises to the endorsement of a state model. Official declarations cannot establish that planning is democratic, ecologically effective, or rooted in popular mobilisation. Nor does state direction by itself overcome productivism, technocracy, or the subordination of needs to geopolitical competition. Ecological planning must remain subject to ideology critique, including when its claims are made in the name of socialism.

Social necessity and emancipation

Read together, the two contributions show why social necessity is a central problem of emancipation. Graf demonstrates that freedom acquires material content only through the social organisation of labour, time, and need. Omodeo shows that an ecological alternative requires planning, but that planning becomes emancipatory only when its ends, forms of knowledge, and institutions are open to critical and collective determination. Both therefore displace the opposition between freedom and constraint. Capitalism does not leave necessity behind; it subjects material necessity to the impersonal compulsion of accumulation. A communist and ecological politics would have to distinguish unavoidable natural conditions from socially produced compulsions and bring the organisation of necessary activity under democratic control.

This returns us to the question of knowledge with which this section began. Collective decisions about needs, ecological thresholds, technology, and the distribution of labour require scientific inquiry, but science cannot stand outside the relations it helps to organise. Claims about natural limits, technical possibility, and social necessity are produced

within institutions and conflicts that shape what can be known and whose knowledge counts. The discussion that follows therefore turns from the material reproduction of life to science as a social practice. If freedom depends on the conscious regulation of our relations with one another and with nature, the production and organisation of knowledge become part of the practical problem of emancipation itself.

Knowledge as the Production of the Future

What must be remembered at this point is that every form of knowledge production means the production of the future.

When the connection between the knowledge produced and its own conditions of production is not established, the knowledge produced unwittingly reproduces the very conditions under which it was produced. The price of failing to adopt a critical attitude toward these conditions is, in this sense, to reproduce them. The totality and critical character of Marxism, however, precisely because it establishes the connection between the two, constitute the opportunity for changing the existing conditions.

In societies where the capitalist mode of production is dominant, it is evident that capital needs knowledge production even just to reproduce itself. In other words, capital is dependent on the production of knowledge—that is, on those who produce knowledge. Relative surplus value—that is, the production of new knowledge—will necessarily continue for as long as the capitalist mode of production persists.

Yet the capitalist mode of production conceals this dependency on the producers of knowledge and gives the impression that it is itself the sole and real subject. Another meaning of commodity fetishism lies here. As noted earlier, this appearance corresponds to a concrete reality. Production of knowledge, unfortunately, takes place within the conditions and forms that capital provides.

Even within the capitalist mode of production, there are certain facts that, however much capital may try to conceal them, cannot be eliminated. First, whatever its kind and whatever purpose it is produced for, knowledge is the objectification of existing conditions, that is, their negation. In other words, knowledge carries within itself, by virtue of its very form, the determination of the conditions that are its source, and therefore the possibility of a critique directed at them. Precisely for this reason, knowledge has the power to encompass the contradictions of the very system out of which it arose. In this way, the capitalist mode of production itself creates the possibility of intervention against itself.

At this stage, knowledge is not yet critical; it is merely a determination pertaining to existing conditions. Yet it is pregnant with other forms of knowledge. The distance that the human being takes from the world through every kind of knowledge—and through action as a form of knowing—is its fundamental determination, and this distance can direct the spontaneously negative, critical attitude toward a constructive, positive step. This may be called the second stage of the knowledge in question: the negation of the negation.

This second, critical form of knowledge carries two meanings at once. And these meanings coincide with one another exactly. First, it is critical in the sense of discovering the causes, sources, and conditions of the knowledge in question; and second, in the sense of locating, on the plane of thought, the contradictions within that knowledge. These two seemingly separate paths are, in fact, two different forms of the same path.

The Marxist critical method comes into play precisely at this point. It weaves together these two seemingly separate paths even as it points to their unity.

In its first form, by making the connection between the knowledge produced and the conditions of its production itself into material for knowledge, it incorporates the process of knowledge's production into knowledge itself. In other words, it does not focus solely on the solution that the produced knowledge offers; it also includes in its answer why the problem in question arose and why it came to be treated as a problem.

In its second form, the contradictions within the knowledge produced are brought to light and unfolded on the plane of thought. It is inevitable that the findings that emerge in the course of this analysis will find their correlate on the plane of material conditions as well.

In both forms—the first on the plane of material conditions, the second on the plane of thought—the negation of the knowledge produced takes place. In the first, the material sources of the contradictions that knowledge harbors on the plane of thought are laid bare; in the second, the contradictions on the plane of thought are analyzed through to the end, and it becomes clear that they are an expression of contradictions in practice.

In both cases, the plane of thought and the material conditions are brought together, and in this way a new field of practice is produced. This is itself an indication that thinking is practice. These new fields of practice, in turn, show how the problem of knowledge is bound up with

the problem of emancipation. Grasping the material sources of the contradictions in thought provides the possibility of eliminating them in practice.

In this way, on the one hand, it is shown that knowledge is historical; on the other, it becomes possible to make history otherwise. It thus becomes apparent that what is realized through the mediation of the production of knowledge is, in every case, the future itself. There is knowledge that has closed its eyes to the contradictions of capital and thereby produces the future of capital. And there is knowledge that, produced from a critical, holistic outlook that also investigates the conditions of capital's own production and reproduction, produces our future. In this context, it becomes clear that we must now speak not of the political use of knowledge, but of knowledge—and the production of knowledge—as politics itself.

This question of knowledge production as politics also provides the ground for the exchange between Joost Kircz and Sascha Freyberg on Bogdanov's 1918 theses on proletarian science. Kircz's critique raises the difficulties involved in attributing a class character to scientific knowledge itself, whereas Freyberg asks whether Bogdanov's intervention can nevertheless be reconstructed as a critique of the social organization, control, and accessibility of knowledge production. Their disagreement therefore concerns more than the historical assessment of Bogdanov: it poses the question of where the politics of science resides—in the epistemic content of knowledge, in the social relations through which knowledge is produced, or in the relation between the two. Since the exchange is introduced separately in this issue, we need not rehearse its arguments here. What matters for our present discussion is that the controversy makes explicit the problem with which this movement is concerned: scientific knowledge cannot be separated from the social relations of its production, but neither can its content simply be reduced to those relations.

Contradiction in Knowledge

Isabel Jacobs and Jiří Růžička's article, "Critique of Systemic Reason: Josef Cibulka and Evald Ilyenkov on Cybernetics and Artificial Intelligence," can be said to focus on precisely this point through the Soviet and Eastern European debates on cybernetics.

The article explains, from a critical standpoint, the positions of Ilyenkov and Cibulka within these debates. As the article describes it, cybernetics—or, in the contemporary context, many of the questions reappearing around artificial intelligence—solves the problems it addresses

within pre-established rules and directives, but it cannot take these problems themselves as its own object. In other words, it cannot pass to the stage of negation. Precisely for this reason, on the conception of thinking reconstructed by Jacobs and Růžička, it cannot properly be said to think. It is at this point that the singularity of the human being, as the sole being capable of thought, emerges.

The human being can ask themselves why problems arise in the first place. This stems from the fact that the human being is not merely a brain in a vat but also has a body. For the human being does not think outside of, or in spite of, the body; on the contrary, since thinking is practice, it thinks with the body just as it thinks with the brain. Precisely for this reason, the human being can pass to the stage of negation mentioned above: it can search for the material basis of every question and for the contradictions of every answer.

Unlike cybernetics, the human being can take its own manner of questioning or thinking—that is, its own activity—as an object. The problem, in this context, stems from a misunderstanding of what thinking is. Indeed, Ilyenkov and Cibulka make precisely this problem their own.

The very notion that cybernetics or artificial intelligence thinks demonstrates, today, the power of the capitalist mode of production in general and of commodity fetishism in particular. The attribution of autonomous thinking and creativity to artificial intelligence can, from this perspective, itself be read as a contemporary form of fetishism: socially accumulated human capacities, objectified in technological systems, confront their producers as capacities apparently belonging to the systems themselves. The logic of capital has been adopted, and it has come to be believed that the one who thinks and creates is capital itself. This holds true not only for the period the article addresses but, unfortunately, for the present day as well. The article's contemporary value lies precisely in its exposure of this fact.

The discussion of quality and quantity in the article's second part, where Cibulka's criticisms are presented, points implicitly to this same situation. Just like capital, cybernetics and artificial intelligence evaluate reality purely in terms of quantity, stripping it of all qualities, and they render even qualitative differences functional within this quantitative logic.

The importance of the difference between quality and quantity also shows itself in the political domain. Because artificial intelligence operates by processing determinations within formally constituted systems,

its capacity to represent qualitative differences should not be confused with grasping the genesis of one quality from the internal contradictions of another. An artificial system can reproduce an account of the transition from feudalism to capitalism; what is at stake for Cibulka is whether it can reconstruct that transition as a qualitative transformation arising through historically determinate contradictions. Once this distinction is lost, even the difference between capitalism and socialism risks being represented as a difference among states of a system rather than as a problem of historical transformation.

The question of embodiment raised here receives a further determination in the archival text published in this issue, Kyrill Potapov's translation of Evald Ilyenkov's "Towards the Concept of 'a Human's Body' versus 'the Human Body'." Ilyenkov's apparently peculiar distinction between these two formulations concerns precisely the inadequacy of treating the human body as a naturally given biological entity to which specifically human capacities such as thinking, language, consciousness, purposive activity are subsequently added. What makes a body human cannot be located within its anatomical organization considered in isolation. The human body is formed historically through practical activity, through its relations with other human beings and with a world already transformed by accumulated social practice. Its capacities are therefore neither reducible to biological properties nor detachable from their material embodiment: they are socially developed capacities of a corporeal being. This bears directly on the problem pursued throughout this movement. If thinking is understood as an activity of such a socially formed body, the comparison between human intelligence and artificial intelligence cannot be adequately posed as a comparison between two information-processing systems, one biological and the other technological. What disappears in such an abstraction is precisely the practical and social process through which human capacities become human capacities in the first place. The issue is consequently not whether a machine can reproduce particular operations performed by human beings, nor whether increasing computational complexity will eventually cross some quantitative threshold into "human" thought. It is what kind of activity thinking is, and what relations constitute the being capable of it. Ilyenkov's formulation thus returns us, from another direction, to the problem with which this introduction began: neither an object of knowledge nor the activity through which it becomes knowable can be adequately grasped as an isolated, self-sufficient entity. Their

determinations emerge through relations and mediations that inquiry must reconstruct rather than take as externally given.

Conclusion: The Unity of Critique as a Practical Problem

The question with which we began can now be posed more concretely. If the unity of Marxist inquiry cannot be supplied by a common theme, by an encyclopedic accumulation of distinct knowledges, or by the application of an invariant method to independently constituted objects, where does this unity reside? The preceding movements suggest that the question itself must be reformulated. Unity is not something that inquiry adds to a fragmented reality. The fragmentation with which inquiry begins is already a determinate form of a social world whose apparently autonomous spheres are constituted through relations that connect them. The task is therefore neither to abolish their differences conceptually nor to assemble them externally, but to reconstruct the mediations through which their difference and their unity are produced.

This is why totality cannot function as a methodological guarantee. To invoke the whole before investigating its determinations would merely substitute the word *totality* for the knowledge that remains to be produced. The totality is not given to thought as a finished object standing above its moments; it becomes intelligible through the investigation of the relations by which those moments acquire their determinate forms. Labour cannot be adequately understood without the natural conditions and social relations through which it is performed; freedom cannot be abstracted from necessity and the organization of material reproduction; knowledge cannot be separated from the historically developed capacities, institutions, instruments, and divisions of labour through which it is produced; and thinking cannot be reduced to an operation performed by an isolated mind or reconstructed as information processing detached from socially formed, embodied human activity. What initially appear as different objects of inquiry repeatedly lead beyond themselves, not because a philosophical system commands them to do so, but because their own determinations do.

There is therefore a difference between recognizing that everything is somehow connected and grasping a social totality. The former remains an abstract proposition and can coexist perfectly well with the treatment of its terms as essentially independent. The latter requires the reconstruction of *specific mediations*. Under capitalism, these mediations possess a peculiar character. Human activities become increasingly interdependent while their social connection confronts those who

perform them as an external necessity. The expansion of social cooperation thus accompanies the apparent autonomization of its moments: economy, politics, science, technology, nature, and even human capacities themselves can appear as separate domains related only subsequently to one another. Marxist critique begins neither by accepting these separations nor by denying them. It asks how they are produced, what social relations they express, and under what conditions they might cease to assume their present form.

This also gives a more determinate meaning to the common generic root of inquiry proposed at the beginning. Scientific activity belongs to the historically developed practical relation of human beings to an objective world, but this generic sociality exists only through definite historical forms of cooperation, division, conflict, appropriation, and reproduction. The sciences consequently possess neither an eternal unity waiting to be discovered beneath their differences nor an essential fragmentation that interdisciplinary cooperation might subsequently repair. Their unity is itself historical.

The unity of Marxist inquiry is therefore ultimately a *practical problem*. This does not mean that theoretical distinctions can be dispensed with in favour of political commitment, or that the truth of an inquiry is determined by the purposes it serves. It means that the divisions whose forms thought encounters are themselves bound to historically determinate forms of human activity. Their critique consequently points beyond a rearrangement of knowledge. If the fragmentation of intellectual and material activity belongs to a social form in which collective capacities confront human beings as independent powers, overcoming that fragmentation cannot consist simply in better communication among disciplines, greater coordination among institutions, or the construction of a more comprehensive theoretical system. It concerns the practical transformation of the relations through which human beings produce their material life, their knowledge, and themselves.

Perhaps this is also what a non-thematic issue of *Marxism & Sciences* can make unusually visible. The contributions gathered here do not acquire unity because we have retrospectively assigned them a common subject. Their different objects, dialectics and revolutionary practice, value and anti-value, labour and freedom, ecology and social reproduction, cybernetics and artificial intelligence, the politics of scientific knowledge, and the socially formed human body, should not be made interchangeable. What brings them into relation is precisely the move-

ment through which the investigation of apparently discrete objects encounters the social and material mediations constitutive of them. Their disagreements are no less important than their convergences, because totality is not theoretical unanimity. It is the problem that arises when inquiry refuses to mistake the apparent independence of its objects for their complete determination.

The first non-thematic issue of this journal therefore does not mark a departure from the question announced in its name. It renders that question more explicit. *Marxism & Sciences* has never needed to mean Marxism placed beside the sciences, as though one constituted a worldview and the others supplied independent bodies of knowledge to which it might subsequently be applied. The conjunction is more demanding. It names an inquiry into the relations through which knowledge, nature, labour, technology, and human activity become differentiated moments of one historical world. Their unity cannot be presupposed. It has to be discovered through inquiry, criticized in its historically determinate forms, and, where the relations constituting it confront human beings as alien powers, practically transformed.

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Biographies

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“Ascending” Theory to Reality: Materialist Dialectic and Revolutionary Practice

Fatih Müldür

ABSTRACT: Starting with Feuerbach, materialism in philosophy shifts its focus from pure material interactions to the human essence in order to explain phenomena. This signifies a radical break from tradition. Feuerbach’s approach, which explains the basis of all phenomena, especially religion, as the “human essence”, significantly influenced the materialist approaches that came after him, including Marx and Engels. For Marx, however, Feuerbach’s approach loses its material basis, as it ignores the revolutionary essence of practical human activity, although it is the most reconcilable approach among existing philosophies. On the other hand, the materialist dialectic developed by Marx, together with Engels, shows the very material and objective essence of phenomena arising from human activity. This method is based on revolutionary practice, revealing the material and real basis of thought and the transformative power of human activity, rather than the “relation of thought and reality” mis-formulation. This method, moreover, sees the theoretical not in a plane of abstractions isolated from reality, but in the thought that emerges in human action, again turning to it and transforming it. In other words, this method “ascends” theory into reality by seeing it as immanent to human activity, not in a supersensible realm. The present study aims to demonstrate the revolutionary practical essence of the materialist dialectical method.

KEYWORDS: Marxian, materialism, dialectic, thought, activity, practice.

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Preliminary Points

Throughout the history of philosophy, a profound conflict has persisted between two fundamental perspectives: idealism and materialism.¹ Idealism, with its transcendental and/or innatist assumptions, explains existence through spiritual forces and processes. Materialism, contrarily, prioritizes matter and material reality, emerging through scientific and technical advancements. Engels states that the history of thought is essentially a chronicle of the struggles between these two camps, and most philosophical ideas can be traced back to one of these poles (Engels 2010b, 366). The first forms of materialism, later called atomism, appear in the works of ancient philosophers such as Leucippus (fl. 5th c. BCE) and Democritus (c. 460–370 BCE). Accordingly, the universe is composed of indivisible, invisible atoms whose changes in “size” and “shape” constitute the nature of all things (Guthrie 1969, 393). Epicurus (341–270 BCE) later expands on this idea by adding “weight” to the properties of atoms and proposing a notion of spontaneous deviation in their motion. This deviation, according to Epicurus, suggests an inherent self-sufficiency within atoms, a concept Karl Marx finds particularly significant as it liberates atomism from strict determinism (Marx 2010c, 46).^{2,3} Lucretius (c. 99–55 BCE) further develops these ideas in his work *De Rerum Natura*, asserting that nothing can come from nothing and everything is composed of atoms, with even the most solid-seeming objects containing space and motion within them (Lange

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1. The opposition between idealism and materialism often carries residues of the older mind–body (or soul–body) dualism. In this framework, however, following Ilyenkov, “the ideal” is not an immaterial substance or a private mental entity. Ideals are objective in the sense of being socially objectified forms: stabilized, norm-governed patterns of human activity that are realized through and in material carriers—signs, artifacts, institutions, and practices—and reproduced historically in collective life. Although such forms can be internalized as individual thought, their determinacy is socio-historical and practical rather than “spiritual” in a metaphysical sense, and it cannot be reduced to neural events alone.
 2. Epicure’s approach is often discussed in the history of philosophy with what he took from Democritus. In terms of the philosophy of “atoms and the void,” there is a fundamental identity in their approaches; however, Marx argues in his doctoral dissertation that they have two separate philosophies of nature, which produce completely different results. For related discussion see: Marx’s doctoral dissertation titled “Difference Between the Democritean and Epicurean Philosophy of Nature” (Marx 2010c).
 3. According to Marx, Lucretius is therefore right when he says that the “deviation” expressed by Epicurus broke the “bonds of fate” [*fati foederali*]; and “it can be said of the atom that the declination is that something in its breast that can fight back and resist.” (Marx 2010c, 49).

1877, 132–135). In the 17th century, materialism re-emerges with renewed vigor, driven by scientific and technical advancements. Pierre Gassendi (1592–1655), revives ancient atomism within the empiricist framework of the New Age (Lange 1877, 254). With his religious beliefs, Gassendi adopts Epicurus’s concept of atoms and integrated it into scientific discourse, arguing that the initial motions of atoms are of divine origin (Lange 1877, 265). Thomas Hobbes (1588–1679) further advances materialist thought by viewing all aspects of nature, including human behavior, through the lens of matter and cause-effect relationships (Hobbes 1651/1998, 71–81). Hobbes’s approach suggests that even religious concepts can be understood mechanically, emphasizing a materialist perspective (Hobbes 1651/1998, 261). The Age of Enlightenment in the 18th century marks a significant era for materialism. Philosophers like La Mettrie (1709–1751) and Diderot (1713–1784) play pivotal roles in shaping modern materialist thought. La Mettrie, in his work *Man a Machine*, depicts humans as complex machines (La Mettrie 1747/1996, 26), with bodily reactions analogous to mechanical movements and thoughts as parts of the brain (La Mettrie 1747/1996, 31). Diderot takes a slightly different approach, proposing that sentience is a characteristic inherent to matter itself (Diderot 1830/1966, 189), evolving from insentient to sentient states through physical interactions (Diderot 1830/1966, 190). In this period, there are significant contributions to materialism from other Enlightenment thinkers like Locke (1632–1704), Hume (1711–1776), and Rousseau (1712–1778),⁴ who emphasize empirical observation and rationality.

Despite its progress, materialism faces challenges, particularly in explaining the unique ways humans interact with nature and society. For much of its history, materialism has depicted humans as mechanically determined beings, subject to physical laws governing matter. However, this perspective begins to shift with the ideas of Feuerbach in the 19th century. Feuerbach marks a radical departure from traditional materialism by focusing on human essence and social interactions, rather than purely material interactions. This shift highlights the limitations of viewing humans solely as matter-determined beings and emphasizes the importance of considering human nature and society. However, even

4. In this section, the basic theses of the empiricist philosophies in question, the assumptions of the innatist idealist philosophies that stood against them, or the position of Kantian transcendentalism could be discussed and evaluated in relation to the developments of the period. However, such a discussion was not entered into, as it would expand the scope of the article too much.

Feuerbach's effort in materialism, as shown in the following section, remains quite naive compared to the method of materialism presented by Marx and Engels, i.e., the materialist dialectical method. Crucially, contemporary understandings of materialism often remain confined to these initial perspectives, reproducing similar theoretical problems. Addressing these persistent limitations requires a re-examination of the materialist dialectical method, specifically to demonstrate that it functions not merely as an epistemological tool, but as a framework where logical, theoretical, and practical-critical activities are unified. This intervention is necessary because existing Marxist philosophy often remains fragmented: it either confines dialectics to a formal epistemological method of "reflection" —detached from the subject's activity— or reduces praxis to external political activism devoid of its internal theoretical necessity. This paper corrects this limitation by establishing that the materialist dialectical method is a unified framework where logic, theory, and practical-critical activity constitute a single, immanent movement. Unlike purely epistemological readings, it argues that theory is not a passive mirror but a practical tool that "ascends" to reality; and unlike purely activist readings, it demonstrates that political practice is the necessary realization of this theoretical-logical movement within social relations. Consequently, the analysis aims to establish that within this dialectic, the theoretical is inherently practical, and the practical domain is simultaneously political.

Feuerbach's (Metaphysical) Moment in Materialism

The 19th-century German philosopher Ludwig Feuerbach was the one who transcended the traditional mechanical understanding of materialism and reinterpreted it in a human-centered way for the first time. When he first published his work, *The Essence of Christianity* [EOC], in 1841, Hegel's philosophy was being discussed in Germany. Hegel's method, which states that "everything that is rational is real, and everything that is real is rational," liberated the mind stuck in its shell in Kant's philosophy and removed the limits of the "absolute." While Hegel's idealist followers interpreted Hegel's thought in question as "reality is only in the rational," his materialist followers interpreted it as "reality must be transformed in order to become rational." These debates were later described as a split inside the Hegelian school into a Right, a Centre, and a Left (often called the "Young" or "Left" Hegelians). Strauss articulates this Right/Centre/Left vocabulary in his *Streitschriften*, where he explicitly sets out the three Hegelian positions (Strauss 1837/1980, 95; 120–121; 126). For Strauss, the key issue was

theological: whether (and how far) Hegel's idea of the unity of divine and human nature could "contain" the Gospel story as history. He argues that there are three answers: that Hegel's idea supports (i) the whole Gospel narrative, (ii) only part of it, or (iii) none of it; and he labels these, respectively, as the Right, the Centre, and the Left (McLellan 1969, 4–5). He also stresses that the boundaries were not sharp—for example, a "centre" position existed, and later political alignments did not always match earlier religious ones (McLellan 1969, 5–6). In this conventional mapping, Feuerbach is placed on the Left because he pushed the critique of Christianity beyond attempts to reconcile Hegel with orthodox doctrine and toward an anthropological account of religion; as McLellan notes, "By the end of 1843 the influence of Feuerbach was supreme among all those Young Hegelians who did not attach themselves to Bruno Bauer" (McLellan 1969, 104–105). When Feuerbach's EOC was published, the book profoundly influenced a group of revolutionary thinkers, including David Strauss, Bruno Bauer, Arnold Ruge, and later Karl Marx and Friedrich Engels, and was considered a pioneering work among Left Hegelians (Engels 2010b, 362–364). The work was translated into many languages while Feuerbach was still alive and brought Feuerbach great fame in Europe. While the impact of the book continues to increase due to the new breath Feuerbach brought to materialism against idealist thoughts, his other important work, *Principles of Philosophy of the Future* [PPF], which is a complementary work of EOC, was first published in 1843.

Feuerbach, who was interested in theology in the early years of his life, later turned to philosophy. While he was initially under the influence of Hegel's philosophy, he formed his own philosophical line over time. Engels describes his break from Hegelian philosophy and his turn towards materialism as the development of a Hegelian towards materialism: "Feuerbach's evolution is that of a Hegelian—a never quite orthodox Hegelian, it is true—into a materialism" (2010b, 369). Feuerbach himself explains this journey of transformation: "God was my first thought, reason the second, and man the third and the last." (2012a, 292). Indeed, EOC is his fundamental work in which he places human beings at the basis of philosophy and establishes a materialism within this framework.

The materialism that Feuerbach puts forward in the EOC derives its dynamism from the effort to lift the metaphysical veil over religious phenomena. In the EOC, which generally includes Feuerbach's criticism of religion, Feuerbach first examines human essence in general, then the

essence of religion in general; then, it deals with *the real anthropological essence* and *unreal theological essence of religion*. The main purpose of the work is to reveal that the basis of all phenomena is the human essence, starting from the phenomenon of religion.

According to Feuerbach, the phenomenon of religion arises from the fact that humans are essentially different from animals (1841/1881, 1). While animals do not have any religion, human beings do. So, what is the cause of this essential difference? According to Feuerbach (1841/1881, 1), this difference is “consciousness” in its most general sense. To clarify this process, one must consider that consciousness involves not only the physical and neural (thinking) realization of bodily impressions, but also the power of sensory discrimination, where external objects are perceived and evaluated. Nevertheless, it is not possible to say that this basic sensory consciousness—which might manifest as a simple physical reaction—does not exist in animals. The transition to a specifically human, “socialized” consciousness requires language as its core infrastructure. As a necessary precondition, the naming and comparing of different sensory effects demand a linguistic framework to enable communication and socialization. This linguistic mediation stands as a necessary precondition of true consciousness, transforming raw impressions into shared social reality.

On the other hand, only human has an essence that makes their own species and existence their own object, which means that they can make other essences their own object. There is no such consciousness in animals (Feuerbach 1841/1881, 1). According to Feuerbach, for this reason, unlike animals, humans have a “twofold” life, one internal and the other external: “The inner life of man is the life which has relation to his species, to his general, as distinguished from his individual, nature” (Feuerbach 1841/1881, 2). While animals communicate among each other—for instance, through alarm calls—the animal exists in nature only as itself. Consequently, unlike the human being, the animal lacks a distinction between an inner and outer life. Human, on the other hand, exists both as himself and as “I and You.” These aspects that make humans different from animals are both the basis and the object of religion. Religion is the consciousness of eternity in humans (Feuerbach 1841/1881, 2). Thinking about eternity means thinking about and approving the infinity of human’s ability to think. Just as religion expresses the consciousness of eternity in human, the absolute essence of human expresses the divine essence (Feuerbach 1841/1881, 9).

Furthermore, according to Feuerbach, since human's object is nothing other than their own objective essence, "Such as are a man's thoughts and dispositions, such is his God; so much worth as a man has, so much and no more has his God" (1841/1881, 12). With this approach, Feuerbach equates their god with human, and human with their god: "Whatever is God to a man, that is his heart and soul; and conversely, God is the manifested inward nature, the expressed self of a man—religion the solemn unveiling of a man's hidden treasures, the revelation of his intimate thoughts, the open confession of his love-secrets." (1841/1881, 12–13). According to him, religion is man's first and mediate self-consciousness. The emergence of religion in both human history and the individual's own history and its coming before philosophy is due to the fact that human transfers this essence outside themselves without seeing it in themselves. This means that a person turns their own essence into their own object. Therefore, for Feuerbach, the history of religions is the history of human's failure to comprehend their own essence by objectifying it. Every development in religion means that people understand themselves more closely.

Feuerbach, who reveals the essence of man and religion in general within this framework, tries to show the "real," i.e. "anthropological essence" of religion in the first part of the book. He first says that human and God are two separate essences, that human being is finite and has a set of deficiencies, and God is infinite and has perfections, and that they are opposite essences. This is what is attributed to God and man in religions. However, according to him, God is first the emergence of human's own essence as an essence opposed to themselves (Feuerbach 1841/1881, 35). So how does this divine essence appear as a real essence separate from the human? Feuerbach sees the source of this to be the understanding (1841/1881, 36). Because the understanding has no desires, passions and therefore weaknesses, and the features attributed to God are the features of the understanding. Besides, God, as the morally complete essence, is nothing other than "the realized idea, the fulfilled law of morality, the moral nature of man posited as the absolute being" (Feuerbach 1841/1881, 46) and therefore the "intellectual essence," the human essence. On the other hand, this morally competent self-concept is a design that tells people what they should be and forces them to act, putting them in tension with themselves. This design creates a feeling of worthlessness and the torment of sinfulness in people. Getting rid of this is only possible by "becoming aware that love is the highest, absolute power and truth, and regarding the Divine Being not only as a law,

as a moral being, as a being of the understanding, but also as a loving, tender, even subjective human being” (Feuerbach 1841/1881, 47). The consciousness of love is the reconciliation of human with their own essence, which appears before them as an alienated essence. In the first part of the book, Feuerbach tries to show the human-centered emergence of various beliefs and acceptances from the history of religion in general and Christianity in particular, in an attempt to prove that the divine essence is the human essence, starting from these concepts.

In the second part of the book, Feuerbach tries to show the unreal theological essence of religion. Accordingly, religion is a phenomenon that binds human happiness and every emotion that opposes it. The person who believes is happy, the person who does not believe is cursed: “Blessed is he that believeth, cursed is he that believeth not.” (Feuerbach 1841/1881, 186). According to Feuerbach, religion appeals not to reason but to the world of emotions. The essence from which stems “all good, but especially such as takes possession of man apart from his volition, such as does not correspond with any resolution or purpose, such as transcends the limits of the practical consciousness” (1841/1881, 187), namely God, belongs to the emotional world, not to the rational one, making any doubt about it a problem of conscience. So, the main indicator of the unreal theological essence of God is that it attaches itself not to reason but to emotion. The devil, Satan, standing in front of it is the negative side, the evil side of the human essence. God and the devil are separated and qualitatively opposing parts of the same essence. Therefore, in the history of religion, not believing in the devil has been considered as atheism as not believing in God (Feuerbach 1841/1881, 188). Feuerbach discusses and demonstrates the “unreal” essence of religious concepts and elements in religion in general and Christianity in particular. This part of the book discusses the contradictions in the existence of God, the revelation of God, the essence of God, the speculative doctrine of God, the trinity and consecration rituals in the Christian faith, and between love and faith, and explains that the content and object of religion is completely human, the secret of theology is anthropology, and the divine essence is the human essence (Feuerbach 1841/1881, 270).

In EOC, Feuerbach puts forward the idea that human attributes their basic qualities to God, that all these qualities are actually human, and that God emerges from human essence in every sense. In this way, the metaphysical dust cloud has dispersed for the facts and concepts of religion and God. Indeed, God is no longer anything other than human.

The sacred, which becomes visible in God, is actually the sanctification of humans' own qualities. In other words, religion and the world of God, as the domain of the sacred, are the domain of essential qualities that are detached from human essence and become sacred.

The *Principles* (PfP) addresses questions concerned with the history of modern philosophy (§ 1–18), the criticism of Hegelian philosophy (19–30) and the principles of new philosophy (31–65) (Feuerbach 1843/2012c). With PPF, Feuerbach aims to complete the project in EOC of showing that the divine essence is the human essence and that the secret of theology is anthropology. Here, Feuerbach treats modern philosophy as speculative philosophy or as a philosophical form of theology. Accordingly, speculative philosophy is the rational adoption and analysis of God; this philosophy is “true, consistent, rational theology” (Feuerbach 1843/2012c, 178 §4–5). Speculative philosophy transforms God, which is the object of human in theology, into the human subject and turns it into a “thinking self” (Feuerbach 1843/2012c, 180–181 §7). On the other hand, since the most competent form of the “new” philosophy is Hegel’s philosophy, Feuerbach’s criticism is also linked to Hegel’s philosophy (Feuerbach 1843/2012c, 200 §19). Hegel starts his method from thought, i.e. consciousness, he connects his idealism to the concept of the absolute (Geist), and his system is completed in this absolute. According to Feuerbach, Hegel rationalizes theology while absolutizing thought. As a matter of fact, while Hegel consubstantiates thought and existence, he infers existence from thought.

On the other hand, the “new” philosophy, which started with Feuerbach, goes beyond previous philosophies and sees the human essence in religion and God and puts nature at its center. By transforming theology, it “makes anthropology, together with physiology, the universal science” (Feuerbach 1843/2012c, 243 §54). As for thought, the new philosophy takes thought neither as a divine consciousness nor as an absolute essence; thought is merely the thought of reality. In other words, Feuerbach argues that “The laws of reality are also the laws of thinking” (Feuerbach 1843/2012c, 235 §45). At this point, it is important to note that for Feuerbach, these “laws” are not subjective, human-made dictates imposed upon an otherwise lawless nature. Instead, he asserts that because the human mind is an integral part of nature, the objective structures and “pertinent dictations” of reality are precisely what constitute the content and rules of true thinking. Feuerbach’s analysis maintains that the objective necessity of the object itself dictates the logic of the mind, and any law of thought that does not find its basis in

the sensible object lacks truth. Moreover, what distinguishes human from animals is not just thinking, but their entire essence. Thinking is the necessary result of this essence (Feuerbach 1843/2012c, 241–242 §53). Feuerbach also bases the new philosophy on the “truth of love”. According to him, “The old philosophy maintained that that which could not be thought of also did not exist; the new philosophy maintains that that which is not loved or cannot be loved does not exist” (Feuerbach 1843/2012c, 227 §35). As a result, according to Feuerbach, the new philosophy is “the complete and absolute dissolution of theology into anthropology, a dissolution in which all contradictions have been overcome” (1843/2012c, 241 §52).

Feuerbach’s materialism radically differs from the previous ones. Accordingly, human beings, who are seen as the result of the natural forms and movements of atoms or matter in traditional materialism, become the essence of existence within objective nature for the first time. In this view, the basis of all phenomena is the human essence, and this essence has taken on different appearances throughout history. The main task is to see and reveal the human essence in all phenomena. The basis of everything is nature, and humans also emerge in nature. However, this does not mean that human beings exist solely according to atomic movements or functions like a machine. Human beings are essentially separate from everything else in nature. They are the only beings who can turn their own essence into their own object. The human essence separates from itself, appears as other essences, and returns to itself as an essence opposed to itself (Feuerbach 1841/1881, 33–34). In Feuerbach, the emergence of all phenomena, especially religion, is based on this.

Feuerbach’s materialism is a revolutionary moment compared to the “vulgar” mechanical materialism of the previous century. Although Feuerbach started from matter, he shifted his attention from matter and focused on humans in order to explain the phenomena. This is the first striking approach in which human determination is underlined. So much so that this approach turns Feuerbach into a hero among revolutionary materialists. This aspect is visible in Marx and Engels’ observations:

Then came Feuerbach’s *Wesen des Christenthums*. With one blow it pulverized the contradiction, by plainly placing materialism on the throne again. Nature exists independently of all philosophy. It is the foundation upon which we human beings, ourselves products of nature, have grown up. Noth-

ing exists outside nature and man, and the higher beings our religious fantasies have created are only the fantastic reflection of our own essence. The spell was broken; the “system” was exploded and cast aside, and the contradiction, shown to exist only in our imagination, was dissolved—One must have experienced the liberating effect of this book for oneself to get an idea of it. Enthusiasm was universal: we were all Feuerbachians for a moment. (Engels 2010b, 364)

At the time of the prevalence of Hegelian philosophy, Feuerbach was first in radically criticizing it, shattering its supposedly unbreakable shells and initiating the transformation of materialism. Marx and Engels also accept this revolutionary essence of Feuerbach’s philosophy. This is because he showed the way to make the subject of Hegel’s philosophy into a predicate and the predicate into a subject, thus starting from humans instead of starting from thought. In Hegel’s idealism, “Thought” or the “Absolute Spirit” was treated as the primary, active *subject*—the force that created and directed reality. In this framework, the material human being was merely a *predicate*, a secondary manifestation or result of that thought. Feuerbach flipped this structure: he argued that the concrete, living human is the true, independent *subject*, while “thought” is merely a *predicate*—an attribute or a product produced by humans. Marx acknowledged this breakthrough, saying, “Feuerbach is the only one who has a serious, critical attitude to the Hegelian dialectic and who has made genuine discoveries in this field. He is in fact the true conqueror of the old philosophy” (Marx 2010d, 328).

However, despite all these innovations, Feuerbach’s philosophy should be understood as the necessary historical threshold that allowed materialism to reclaim its ground, even if it could not by itself complete its journey towards the most perfect and scientific form of materialism. Marx and Engels agree that Feuerbach’s system provided the indispensable foundation for their own departure, yet remained incomplete as it inevitably leads back to idealism when slides into a metaphysical ground. This slide occurs not because of a simple failure of thought, but because, although Feuerbach places “man” at the center, he treats the human essence as an abstract, static, and internal “species” quality rather than the result of social and historical relations. By overlooking *praxis*—the revolutionary, practical-critical activity through which people change their circumstances—he views the world as something to be merely observed (contemplated) rather than transformed. Consequently, his materialism remains “intuitive” or metaphysical because it

deals with an idealized version of humanity isolated from the actual historical and political flow of society.

Importantly, despite Marx's generally radical critical attitude and the radical difference between his approach and Feuerbach's, his criticism of Feuerbach is not an "attack" despite his sometimes- harsh language. As Bloch puts, "The departure from Feuerbach took place respectfully and above all as a correction [...]" (1954/1996, 251). Indeed, from Marx's point of view, Feuerbach has a special place in current philosophy. In his letter to Arnold Ruge on March 18, 1843, Marx wrote, "Feuerbach's aphorisms seem to me incorrect only in one respect, that he refers too much to nature and too little to politics. That, however, is the only alliance by which present-day philosophy can become truth" (2010e, 400). Marx finds the foundation on which Feuerbach's philosophy is based problematic and develops his criticism accordingly. After his letter to Ruge, Marx aphoristically puts forward the fundamental problems of Feuerbach's system (and philosophy in general) in his *Theses on Feuerbach*, which he wrote in 1845, and in *The German Ideology*, which he co-authored with Engels⁵ in 1845–46. *Theses on Feuerbach* have a special place both in the joint works of Marx and Engels and in Marx's personal works, with their aphoristic structure and giving the most concise form of the method that Marx puts forward together with Engels. For the first time, in the *Theses*, there is a direct and radical criticism of Feuerbach and of materialism in general:

The chief defect of all previous materialism—that of Feuerbach included—is that things [Gegenstand], reality, sensuousness are conceived only in the form of the object, or of contemplation, but not as human sensitive activity, practice, not subjectively. Hence it happened that the active side, in contradistinction to materialism, was set forth by idealism—but only abstractly, since, of course, idealism does not know real, sensitive activity as such. Feuerbach wants sensitive objects, really distinct from conceptual objects, but he does not conceive human activity itself as objective activity. In *Das Wesen*

5. *Historical note:* The MEGA² editorial introduction to the *German Ideology* materials (I/5) indicates that the surviving manuscripts (1845–1847) were first conceived for publication as a self-edited quarterly journal (*Vierteljahrsschrift*) rather than as a conventional book. It further records that this quarterly project was initially planned under the editorship of Marx, Engels, and Moses Heß, and that after the journal plan failed, Marx and Engels considered book-form alternatives (first a two-volume, then possibly a one-volume version, ultimately without contributions by other authors) (Marx and Engels 2017, 726; 731). The same introduction also documents plans to include texts by other authors (especially for the projected second volume of the *Vierteljahrsschrift*), including Georg Weerth and Wilhelm Weitling among others (Marx and Engels 2017, 727; 771).

des Christentums, he therefore regards the theoretical attitude as the only genuinely human attitude, while practice is conceived and defined only in its dirty-Jewish form of appearance. Hence he does not grasp the meaning of “revolutionary,” of practical-critical, activity. (Marx 2010g, 6)

This single paragraph identifies the chief defect of hitherto materialism, including Feuerbach’s, in treating reality as a mere object or intuition, independently of practice. Unlike materialism, for the first time in Hegel’s idealism, reality is taken as practical activity, even though in the form of abstract thinking only. As for Feuerbach, unlike Hegel, he wants sensory objects separate from intellectual objects, but he does not understand the importance of “revolutionary and practical-critical” activity. The disregard of “praxis” throughout the history of traditional materialism and even in Feuerbach’s materialism means, reproducing the traditional the traditional problem of how differentiated realities, one sensible and the other supersensible, relate to each other. Because, no matter how material it is built on, ultimately the human essence clings to the traditional formulation of “generalization” and “abstraction” in order to reach “consciousness,” one of its essential qualities. Thus, the material basis becomes mysterious and “detaches itself from itself and establishes itself as an independent realm in the clouds” (2010g, 7). Marx draws attention to this in the fourth thesis (Ibid.) when he states that Feuerbach starts from the fact of the duality of the world, one “religiously conceived” and the other real. According to Marx (Ibid.), Feuerbach only placed the religious world on a material basis and left aside the actual work that needed to be done. Engels, similarly, states, “Feuerbach broke through the system and simply discarded it” (2010b, 365). Since Feuerbach did not explain how his material basis detached from itself to settle “on the clouds like an autonomous kingdom”—in other words, how this “human essence” transformed into a religious essence through internal contradictions—he left these contradictions unresolved and failed to revolutionize them in practice (Marx 2010g, 7). In other words, Feuerbach’s limiting the sensible world to simple intuition or perceptions was a crucial first step; however, by starting from the abstract concept of “human” instead of “real historical human” (Marx and Engels 2010a, 39), it remained a form of “intuitive” materialism that awaited its completion in seeing the importance of practical-revolutionary human activity.

On the other hand, human essence is the expression of social human being. While human exists in society through their practical activity, they reconstruct themselves and the relationships in which they exist.

However, from a Feuerbachian perspective, the abstract human individual, “isolated” from the historical flow (Marx 2010g, 8), stands in the middle with their (generic) human essence instead of practice. They have a religion because of their essential qualities, they create a God essence, and they know that at best these essences are opposite essences alienated from their own essence. While Feuerbach presupposes that the “abstract human individual” in question has a general essence (in terms of species), they see (in an idealistic manner) the “reconciliation” of this essence with opposing essences that are disconnected from it and alienated from it, only in “love,” which is the supreme power. The basic principle in relationships with others is love. Everything else follows from this principle. In other words, the human essence that Feuerbach aims to show in the essence of phenomena throughout his philosophical thought system eventually comes to be connected to the concept of love. Therefore, on the one hand, Feuerbach advises to turn to the concrete and reality, on the other hand, he builds, in Engels’ words, the “religion of love” (2010b, 377) and turns to “humanism” based on a morality of partnership. Feuerbach, who begins his analysis with a materialist tone based on nature, adopts an idealist attitude when it comes to humans. That is why Engels said, “He [Feuerbach] can never completely cease being an idealist. In the field of nature, he is materialist; but in the human sphere he is an idealist” (Engels 2010a, 480).

From the perspective of Marx and Engels, Feuerbach overcomes crude/vulgar traditional materialisms by realizing that the human being is a “sensible object.” However, he does not regard humans as “sensory activities” within their given social relations, but instead idealizes them with the concept of a “human being” who has only senses and only establishes relationships of love and friendship with other “humans” (Marx and Engels 2010, 40–41). This leaves his materialism as a form of “intuitive” *metaphysical* materialism. With the criticisms of Marx and Engels, Feuerbach’s statement “Backwards I fully agree with the materialists, but not forwards” (Grün 1874 quoted by Engels 2010b, 369),⁶ which he actually meant by mechanical materialism, comes true ironically: In the final analysis, he is not with a revolutionary materialism.

6. This sentence quoted by Engels (2010b) from K. Grün, Ludwig Feuerbach in seinem Briefwechsel und Nachlaß sowie in seiner Philosophischen Charakterentwicklung, Vol. II, Leipzig and Heidelberg, 1874, p. 308.

Marxian Materialism and Revolutionary Practice

The materialist dialectical method introduced by Marx and Engels and the practical-critical revolutionary aspect inherent in it constitute the most sophisticated form of both materialism and dialectics as a whole.

It has already been mentioned how important Marx found Feuerbach, especially after EOC. However, in his letter dated 24 January 1865 to Schweitzer, editor of *Der Social-Demokrat* newspaper, Marx does not hesitate to describe Feuerbach as philosophically “poor” when compared to Hegel, despite all his radicalism (2010f, 26). The reason for this is the masterful use of dialectics in Hegel’s philosophy, despite all its idealist hard shell. In his Afterword to the Second German Edition of *Capital-I*, Marx openly declares himself “the pupil of that mighty thinker” against those who treated him as a “dead dog” behind Hegel’s back in Germany at the time (2010b, 19). Because, according to Marx, “The mystification which dialectic suffers in Hegel’s hands, by no means prevents him from being the first to present its general form of working in a comprehensive and conscious manner” (2010b, 19). In this context, it is necessary to mention a few important points regarding the dialectical methods of Hegel and Marx. To navigate this dense philosophical issue, it is helpful to first identify the internal mechanics of Hegel’s method.

First, Hegel shows that the knowledge of existence emerges in the dialectical movement of Spirit in his philosophy, which he puts forward in its most basic form in his works *Phenomenology of Spirit* and *Science of Logic*, starting from consciousness and passing through various moments and reaching the absolute subject. In Hegel’s method, the passage of “consciousness, which is the immediate existence of Spirit” (Hegel 1807/1977, 21 §36) from one moment to another indicates a continuous movement in the form of resolving one contradiction and moving on to another. The key point here is that for Hegel, reality is not static but a dynamic process driven by internal contradictions. This movement is negation, the negation of negation, and its own movement, which continues in the form of a new negation on another plane and emerges from the spiritual substance itself. Essentially, Hegel argues that consciousness moves forward by constantly encountering and overcoming the internal contradiction between its own subjective knowing and the objective reality it faces. Moments of objectivity in consciousness, one of which is *knowing* and the other of which is *negative to knowing*, constitute a totality with an internal contradiction because they appear as forms of consciousness. This is also the non-identity of “I” and “non-I”

(spiritual substance) in consciousness. This non-identity is the principle that enables the movement of consciousness as negation. This movement, which seems to take place outside of consciousness, is actually a movement directed by consciousness itself. In other words, this is the movement of consciousness itself (Hegel 1807/1977, 21 §§36–37). What matters for Marx in this complex spiritual journey is Hegel's greatest merit: his conception of reality not as a collection of static objects, but as a continuous *becoming*, *change*, and *process*. According to Hegel, the driving force of this development is "contradiction." Marx appropriates this dynamic method; however, he maintains that "With him it [dialectics] is standing on its head. It must be turned right side up again, if you would discover the rational kernel within the mystical shell" (2010b, 19). In other words, Marx positions his dialectical method not only as different from Hegel's, but also as its opposite because he insists that thought is a 'translated' form of material reality, rather than an independent subject called "the Idea" (Marx 2010b, 19).

To clarify the transition from Hegel to Marx, we must see how they differ regarding "mediation." In Hegel's dialectics, the resolution of the apparent contradiction between the subject and external reality, which emerges as a negation from consciousness, takes place through the "concept." The concept emerges when one of the moments that "seem to be separated" in consciousness as the subject and external reality is the mode of existence of the other (1807/1977, 21 §§36–37). In this way, the concept overcomes the contradiction on this plane and carries the moments that first separated (appeared to be separated) from an immediate unity to a mediate unity plane. However, this plane is another plane of contradiction and this movement continues constantly. In this view, concept, subject, reality and everything else emerge from this dialectical movement. While this revolutionary essence remains central to Hegel, Marx takes this 'upside down' method, puts it on its logical feet, and starts from the material basis. What Marx rejects is not the movement itself, but the way Hegel deduces the history of nature and society from pure thought. However, what he does is not, as Feuerbach does, to recognize the material basis and then let it slip away. For in Feuerbach's analysis, in the end, the two isolated essences remain, one the human essence and the other nature. His "general human" stands on the natural basis and relates to society through a reconciliatory bond of "love," which Feuerbach explicitly presents as the "principle of reconciliation" between the universal and the individual, the divine and the human

(Feuerbach 1841/1881, 48). This eliminates the dialectical and materialist essence of his method. In Marx's critique, the problem is that Feuerbach does not grasp mediation as a practical, transformative relation: "sensuousness" remains framed as object or contemplation rather than "sensuous human activity, practice" (Marx 2010g, 3). Feuerbach cannot find the mediating movement of the relationship of human essence to society and nature. Or at best he takes it as "religion," which he describes as an indirect self-relation: "religion is man's earliest and also indirect form of self-knowledge," because human nature is first encountered as if outside itself (Feuerbach 1841/1881, 13). In Hegel, however, albeit idealistically, the contradiction is resolved in the Idea. Since in Hegel, humans relate to nature and society through concepts arising from the movement of thought. This also explains the relationship between thought and reality. In Hegel, although both of them originate from "Idea," the mediating moment in the relationship between thought and reality is "concept." The subject transforms nature, history and itself through its concepts. Therefore, when Marx compares Feuerbach with Hegel, he does not hesitate to see Feuerbach as philosophically "poor," who imagines humans as passive subjects who do not participate in the formation of history.

Hegel's dialectics, which deduces the history of nature and society from thought, promises that all movement will be completed in The Absolute Spirit and all contradictions will be resolved. Marx investigates the material roots of Spirit itself by questioning why, if all contradictions are resolved in Spirit, social relations are constantly produced and reproduced in the form of a class society. Marx takes the "acting agent" as a fundamental Notion as early as his doctoral dissertation where he contrasts Democritus' and Epicurus' atomic theories; in the former's atoms are subject to a predetermined uniform falling motion; in the latter's they deviate from the straight line and hence acquire agency and become subjects of activity. As a result, Marx distances himself fundamentally from both Hegel's idealism and Feuerbach's materialism of the 'contemplative subject.' Together with Engels, Marx demonstrates that establishing the "new philosophy" Feuerbach referred to is only possible through the 'materialization' of dialectics, which best reveals the laws of thought. Materialist dialectics takes the acting subject as the sole transformative power of all history and nature.

In the face of Hegelian idealism, Marx acknowledges the significance of Feuerbach starting his analysis from religious phenomena, yet he criticizes his materialism for remaining bound within this phenomenal

limit. Feuerbach's analysis remained at the phenomenal level because he limited the human essence to an abstract and silent "species" quality inherent in the individual's nature, rather than conceiving it as the ensemble of historical and social relations. By disregarding the practical human activity, or *praxis*, which produces social relations, he failed to grasp the dynamic social essence lying behind the object of contemplation. In contrast to Feuerbach, Marx's method, while starting from phenomena, does not bind itself to the phenomenal; rather, it aims at grasping the essence, namely the social relations, of which the particular phenomenon under study is merely a form of existence. It is the establishment of this dialectical link between phenomenon and essence that ensures the methodological unity of Marx's system. It is precisely for this reason that, in order to reveal the essence of the capitalist mode of production, which is a complex web of social relations, Marx selects the "commodity" as the starting point of his analysis: "the smallest cellular unit which carries the entire social characteristics of the system in its genetic codes"⁷ and constitutes the most concrete *form of appearance* of these relations within capitalist society.

When analyzing the commodity, Marx thinks of it as a contradictory whole that has a dual existence: use value and exchange value. The useful aspect of the commodity corresponds to its use value. Exchange value, on the other hand, appears "at first sight, presents itself as a quantitative relation, as the proportion in which values in use of one sort are exchanged for those of another sort, a relation constantly changing with time and place." (Marx 2010b, 46). Therefore, the conditions that determine it appear to express a random process. But Marx shows that this is not the real story.

When talking about value, Marx states in its simplest form that "the value of each commodity is determined by the quantity of labour expended on and materialised in it, by the working time necessary, under given social conditions, for its production" (2010b, 196–197). Therefore, value is the social substance crystallized in each commodity (Marx 2010b, 48).⁸ Value is the expression of the average social labor time required to produce a commodity, and every commodity enters the exchange market as the carrier of value. According to Marx, "Social labour

7. This statement is an excerpt from a statement used by Siyaveş Azeri in his graduate course titled "Marx and the Marxian Method," which he gave at Mardin Artuklu University in 2015 and which I followed.

8. In Marx's own words: "[...] When looked at as crystals of this social substance, common to them all, they are—Values." (Marx 2010b, 48).

time exists in these commodities in a latent state, so to speak, and becomes evident only in the course of their exchange” (2010a, 286). This emphasizes that value emerges in the sphere of production but is realized only in the sphere of exchange. However, while the production of use value is a necessary material condition (for nothing can have value without being useful) the fundamental historical prerequisite for the production of value is *the commodification of labor power*. It is this specific condition that transforms the labor process into a process of *value creation* (Wertbildung). As Marx stated, “Just as commodities are, at the same time, use values and values, so the process of producing them must be a labour process, and at the same time, a process of creating value” (2010b, 196). The labor process, in this context, is an activity that comprises labor itself, the instruments of labor, and the object of labor.

Labor, as an abstraction, expresses the relationship that humans establish with nature to maintain their lives. In this abstraction, the human being, as an opposing force of nature within nature, incorporates the material beings of nature into their own existence through labor in order to survive. Their labor expresses a purposive and tool-mediated process of activity. Humans transform both external nature and their own nature through this tool-mediated activity. This purposive and tool-mediated human activity turns anything in nature into an object of labor the very moment it is directed towards it. The subsequent process involves the continuous transformation of that object and of the human being itself as the acting subject. At each moment of activity, the object turns into a labor product that has passed through labor processes and whose nature has been altered. It is the activity itself that changes and transforms the human being as the acting subject as much as it does nature. This is an abstraction that demonstrates the centrality of human activity, that is, of revolutionary practice.

The main point for Marx is that the human being has never been a merely natural being; therefore, all labor processes occur within specific social relations and forms. Indeed, regardless of the social format, any object appears before a human being not merely as ‘natural’, but as a product of a certain labor. As acting subjects, humans encounter one another within relations of production. In *Capital*, Marx demonstrates most competently that all these processes now take place specifically within capitalist relations of production. Within these relations, as a result of the separation of the labor process from the conditions of labor, labor power assumes a specific character: it produces commodities and itself takes the form of a commodity. The owner of labor power “freely”

sells the use value of their labor power, which has taken the form of a commodity, to the capitalist, whom they encounter as an “equal” in the market. The capitalist acquires the right to use this commodity and to appropriate every product it produces for a certain period of time. In the relations of production established upon this specific commodity, which produces as it is consumed, the entire movement operates in favor of the capitalist. This process, which includes the production of value and surplus value as a continuous cycle, ensures the exploitation of labor and the continuity of mechanisms of value production, and therefore of capital. Law, religion, the state, the economy, and all other phenomena re-emerge in specific ways as different manifestations of this process.

Marx’s analysis elucidates the history of social humanity by breaking the spell of the Hegelian Spirit and revealing its essence on the basis of material and concrete human activity. In this way, Marx demonstrates that the fundamental reality of the human being resides neither in nature nor in some supernatural realm, but in social relations themselves. Therefore, the roots of all phenomena related to social life must be sought here, not in the abstract constructs of thought or pure nature. Meanwhile, it is essential to note that “pure thought” and “pure nature” are themselves human notions—conceptual categories we create to interpret a world from which we cannot be truly detached. Consequently, the origins of thought, which Hegel views as the source of reality, must be traced back to material processes themselves. This signifies that consciousness is not an independent power that creates the world, but is instead the “ideal” expression of the real life-process and social activity of humans. By situating the genesis of thought within these material conditions, Marx provides the basis for resolving the traditional tension between thinking and being. Much like the traditional philosophical problem regarding the dualism of thought and reality—and the question of how a relationship between them is even possible—the debate concerning the reality or unreality of thought “isolated from practice” remains, in Marx’s view, a purely “scholastic” question (Marx 2010g, 3). However, according to Marx, “All social life is essentially practical. All mysteries which lead theory to mysticism find their rational solution in human practice and in the comprehension of this practice” (Marx and Engels 2010a, 5). Thus, thought derives its reality solely from practice. Indeed, in Marx’s method, thinking is not a mental production composed of “abstract” concepts in the traditional sense of “mental distillation” (Ilyenkov 1982), but a practical activity and a real process in which the

“concrete is reproduced.” In other words, thinking is a continuous movement that proceeds reciprocally from the social to the individual and back again. Concepts emerge as “tools of mental activity” (Azeri 2013, 1095–1123) within this movement. Accordingly, conceptual systems are not planes of abstraction isolated from reality; on the contrary, they are tools of action that return to human activity and transform it through concepts. For this reason, theory “isolated” from practice is nothing but a meaningless aggregate of abstractions. Therefore, theories are not mental formulations rising *above* reality, but practical tools that “rise *to* reality” within human activity itself. Isolating theory from practice and elevating it to an “autonomous kingdom above the clouds” is to see the world upside down. This approach reflects the bourgeois perspective, as it mirrors the structural division between mental and manual labor inherent in class society, where theoretical contemplation is detached from the material production of life. This is, therefore, not a merely epistemological problem, as it might seem, but a deeply political one.

Marx’s theory of value serves as a prime demonstration of this methodological unity between theoretical abstraction and concrete reality. It presents the most perfect example of how the theoretical is elevated to the level of the real. While value theory appears as a systematic set of formulations involving abstract concepts, it does not remain in the realm of ideas. Instead, it functions as a theoretical-practical unity that exposes the essential social relations and the historically specific forms of human social activity of the capitalist mode of production. This unity captures a system that is as opportunistic as it is contradictory; despite its immanent crises, capitalism demonstrates a historical resilience that allows it to adapt and persist even through catastrophic social destruction or massive population losses. Crucially, these relations and forms of activity are not understood as mechanical or deterministic rules; rather, they reflect the contradictory dynamics through which the material life-process is produced and reproduced. By grasping the “value” form, Marx does not merely define a concept; he reveals how the concrete life processes of real people are regulated, how labor is exploited behind the appearance of equal exchange, and how social relations assume the form of relations between things. Thus, the theory of value proves its reality by demystifying the actual functioning of capitalist society and by providing the tools to transform it.

The necessary consequence of Marx’s materialist dialectical method is that all logical and theoretical tools of action provided by this method

conceive of the human being ‘in social activity’ simultaneously as a political subject. Participating in social relations is, in essence, no different from participating in political relations. Therefore, even the most seemingly natural actions of the social individual occur within the totality of social relations, in which political action is inherent. Actions as mundane as eating lunch to satisfy hunger or taking a bus to cross the city possess direct or indirect political determinations, just as much as the struggle of a female worker demanding equal pay for equal work. This is because each of these actions presupposes a web of relations involving capitalist production, in which labor power is exchanged as a commodity, alongside processes of value production, the capital-labor contradiction, and the monetary economy. Therefore, the social human is equally a political subject. As Marx demonstrates, human beings, as political subjects within existing production relations, are also determined by class in terms of how they participate in these relations and their position within them. In this polar opposition between the capitalist/bourgeoisie and the working class/proletariat, Marx argues that the only class capable of standing against the capitalist class is the proletariat (Marx and Engels 2010b, 494). Therefore, the “emancipation” of humanity is only possible with the revolutionary practical activity of the proletariat. The development of capitalism has eliminated all other classes and made the existence of only these two classes possible. Because the condition of existence of capital is that the means of production are subject to the laws of private property and concentrated in the hands of the capitalist, and the owner of labor power can only confront the capitalist by “freely” selling the labor power that has become a commodity. This unique relationship dissolved all social structures in the past, abolished all classes, and created this polar opposite class structure. However, defining this polarization merely as a sociological stratification or limiting it to the economic sphere would be a misinterpretation of Marx’s concept of class. As Azeri (2015, 439–460) argues, class in the Marxian sense is not a static identity but a dynamic social relation of production that structures the totality of human life. Therefore, the opposing but necessary unity of these two classes in capitalism shows, on the one hand, the contradictory nature of capital and, on the other hand, the possibility of the abolition of these relations. This possibility is nothing other than the practical revolutionary action of the proletariat.

It is crucial to note that the dominance of capital over labor does not manifest itself solely in the immediate production process; it shapes

every aspect of social existence. Consequently, various forms of inequality, discrimination, and oppression—whether based on gender, race, or ethnicity—should not be viewed as phenomena independent of, or external to, class antagonism. On the contrary, these are the specific forms of appearance of the fundamental contradiction between capital and labor within the totality of social relations (Azeri 2015, 439–460). Since capital, as a “Subject,” subjugates all human relations to the logic of value production (Postone 1993, 75–77), every struggle against the specific manifestations of this dehumanization is inherently linked to the class struggle. Thus, the proletariat is not merely one interest group among many, but the universal class whose emancipation necessitates the abolition of all forms of oppression rooted in the self-expansion of value (Hekmat 1994, Introduction section). Therefore, social movements addressing these specific inequalities are actualized within the dynamics of class antagonism, and their ultimate resolution lies in the overturning of the capitalist mode of production that constantly produces and reproduces these disparities. As emphasized in the *Manifesto*,

The essential condition for the existence, and for the sway of the bourgeois class, is the formation and augmentation of capital; the condition for capital is wage-labour. Wage-labour rests exclusively on competition between the laborers. The advance of industry, whose involuntary promoter is the bourgeoisie, replaces the isolation of the laborers, due to competition, by their revolutionary combination, due to association. The development of Modern Industry, therefore, cuts from under its feet the very foundation on which the bourgeoisie produces and appropriates products. What the bourgeoisie, therefore, produces, above all, is its own grave diggers. Its fall and the victory of the proletariat are equally inevitable. (Marx and Engels 2010b, 496)

Notwithstanding, all thought and analysis so far, including Feuerbach’s radical anti-religious ‘new’ philosophy, have either failed to see or ignored the practical nature of the real socio-historical human and the specific character it takes on under capitalism. That is why “The philosophers have only interpreted the world in various ways; whereas the point is to change it” (Marx 2010g, 8). Philosophy, in the Marxian sense, should be realized to this end. Moreover, philosophy and therefore thought must be materialist—not in the sense of reducing ideas to mere matter, but in the sense that it grasps the material world not as a static object of contemplation, but as the product of sensuous human activity and social practice. It must be dialectical, showing the concrete social-human essence of phenomena. Dialectics is nothing but “the real logic of real thinking” (Ilyenkov 2007, 20).

The materialist dialectical method is the continuous dialectical relationship of logic, theory, and practical-critical activity itself. This method emerges from the real activity of the real person, is mediated through the logical and conceptual, and transforms this activity itself by returning to the concrete socio-historical activity of the real person. Because in materialist dialectics, the theoretical is inherently practical; and the practical is simultaneously political (and/or vice versa). Its essential revolutionary dynamic necessitates constant transformation.

Conclusion

As a philosophical methodological approach, materialism, until Feuerbach, tries to explain nature and equally human phenomena in terms of material substance and its properties. For the first time, with Feuerbach, the focus was on the human essence instead of the view of traditional materialism based solely on material interactions. Representing a radical break from previous materialisms, Feuerbach's philosophy posits the human essence as the basis of all phenomena, beginning with religion. With this analysis, Feuerbach profoundly influenced later materialist approaches, including that of Marx and Engels. While Marx acknowledged Feuerbach's approach as the most reconcilable among existing philosophies, he criticized it for "emphasizing nature too much while giving little space to politics." Consequently, while establishing the human essence as a material reality, Feuerbach's materialism stops short of securing its specific material basis because it overlooks the transformative essence of practical human activity, a limitation that Marx addresses by moving beyond a form of substance materialism reminiscent of French materialism.

In contrast, the materialist dialectic developed by Marx and Engels demonstrates that the objectivity of social phenomena is constituted not by fixed substances, but by historically specific forms of human social activity. This method grounds revolutionary practice by revealing the transformative power of this activity and exposes the real foundations of thought, which can only emerge within this praxis. Therefore, this method does not derive human reality from autonomous thought; nor does it reduce thought to a mere physiological reflex of the body. Rather, it grasps the forms of thought as the necessary ideal moments of the concrete, social, and historical totality of human practice. Moreover, this method "ascends" the theoretical to the level of reality by conceiving it as immanent in human activity, rather than residing on a plane of abstractions isolated from reality. In other words, the theoretical emerges from human activity and transforms it by returning to it. Revolutionary

practical-critical activity constitutes the very essence of materialist dialectics. According to this method, the theoretical is inherently practical, while the practical is simultaneously political. The human being is a *zoon politikon* who alters and transforms both their own nature and the world through social practical activity. Indeed, the human being possesses the sole transformative power of history and society: revolutionary practical-critical activity. The core novelty of this work resides in its articulation of the materialist dialectical method as the essential unity of logic, theory, and practice. It corrects the “scholastic” separation of thought from reality by showing that the “abstract” conceptual system is a practical tool for the reproduction of the ‘concrete’ life-process. This account of praxis differs from epistemological interpretations by situating thought within the sensuous activity of the social subject rather than in a detached realm of ideas. Furthermore, it moves beyond purely activist readings by establishing that revolutionary practice is the necessary, logical expression of the social-human essence within its historical conditions. This power, however, is not a metaphysical abstraction; it is fundamentally rooted in the biological grounding of the human organism as a sensuous nature-being. As humans transform external nature through tool-mediated activity, they simultaneously transform their own internal nature—their physiological structures and cognitive-psychic capacities. Consequently, the comprehension of this revolutionary activity must encompass its transformative potential within the subject’s biological and psychic totality. This requires addressing how the alienation inherent in the capitalist mode of production manifests not only as social oppression but as a profound fragmentation of the subject’s mental life. Within this materialist framework, psychiatric disorders and psychic distress are understood as the “un-real” appearance of a distorted life-process, where the subject’s own “conceptual cognitive organs” are alienated and turned against their own integrity. Thus, revolutionary praxis is not merely a social reorganization; it is the reclamation of the subject’s biological and psychic agency from the dehumanizing rationality of value production.

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Biography

Fatih Müldür is a PhD candidate in Philosophy at Boğaziçi University. At Mardin Artuklu University, he became associated with *Thesis Twelve: Mardin Value-Form Circle* (2014), initiated by Siyaveş Azeri, and participated in Azeri's working groups on Hegel, Marx, and Contemporary Russian Thought. He presented papers in France at the University of Reims' Interdisciplinary Research Center on Language and Thought (CIRLEP) conferences *Res per nomen* 6, 7, and 8 (2017; 2019; 2022). His work has appeared in international journals and edited volumes. His article “The Grammar of the ‘Abstract’, the Language of the ‘Universal’: A Vygotskian–Ilyenkovian Methodological Criticism of Chomsky's Linguistic Theory” was published in *Socialism and Democracy* (June 2023), offering a Vygotskian–Ilyenkovian critique of the central “universal” and “abstract” categories in Chomsky's philosophy. He also published a study on Chomsky's nativist approach in *Kaygı* (2016). Further contributions include “A Marxian–Ilyenkovian Criticism of Saussure's use of the ‘Concrete’ and the ‘Abstract’” (2018), “Sign and the Dynamic Construction of Meaning: A Marxian–Vygotskian Critique” (2020), and “An Overview on the Relationship between Ontogenesis of Syntactic Structures and Polysemy through the Example of Turkish Language” (2023), published as chapters in international collections. Müldür's current project, “Extended Cognition: From Clark and Chalmers to Vygotsky on the Role of Activity in Construction of Knowledge,” aims to make a distinctly Vygotskian epistemological intervention into contemporary philosophy of mind. Focusing on the internalism/externalism axis, it reopens the question of how the boundaries and sources of mind and knowledge are theorized, and argues for the centrality of activity in the construction and stabilization of knowledge.



Labour, Nature, Freedom and Universalism: Communism between capitalist longevity and radical break

Joshua Graf

ABSTRACT: Marx is praised as an honorable fighter for equality, even by many political opponents. At the same time, it seems to be the broadly accepted consensus that he sacrificed individual freedom to loftier ideals of justice and equality. This narrative must be retired, as it does not hold up to scrutiny; Marx saw great value in freedom and individuality. However, he did not share the liberal anthropologist view of the abstract concept of freedom. Instead, he insisted on the need for social cooperation to realize further degrees of personal freedom. He understood that freedom does not exist as a formal category, but only ever in relation to a specific need in a human-nature interaction. For this reason an understanding of Marx's conceptualization of work and society is indispensable. Building on that some general challenges for a Communist society dealing with contemporary challenges can be extrapolated.

KEYWORDS: Marx, labour, freedom, economy, communism.

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Introduction

It seems strange that Socialists and Communists praise Marx as the most important thinker on liberation and human emancipation, when simultaneously his reputation among bourgeois intellectuals could hardly be worse. Marxism, and especially Communism, are harshly criticized for being inherently totalitarian and having no respect for individual rights. It is sometimes granted that Marx's supposed fight for "social justice" and the common good is honorable, but that its overall implications lead directly to Stalin and North Korea. It is a well-known rebuttal of Marxist ideas that their supposedly egalitarian approach undeniably erases any forms of individuality. Even Marxists like Michael Brie declare that while the goal of providing a good life for everyone is extremely honorable, Communism suffers under a severe lack of a concept of individual freedom (Brie 2022, 39). One sees that the history of real existing Socialism overshadows Marx's actual approaches to freedom. While it is true that Marx did not share the hegemonic bourgeois concept of personal freedom as a naturally given right guaranteed by the state, this does not mean that he denied the crucial importance of freedom. Furthermore, the common narrative that Communism erases freedom in exchange for pure equality must be debunked, as it could not be further removed from the actual stated ideas of Marx.

In this article, I have two objectives. Firstly, I aim to provide a concise refutation—underpinned by numerous direct quotations—of conventional prejudices against Marx, such as those that still persist in the dominant discourse and have recently become more frequent. Although some important clarifications on this matter already exist, this strikes me as a politically pressing task in view of the prevailing and increasing repression against Marxists (see, for example: Leipold 2025; Hoff 2026, 24), which thrives on such accusations. Secondly, my aim in writing this article is to contribute to the internal Marxist debate on the relationship between freedom and necessity, as well as to the dialectical relationship between individuality and community in the future communist society and on the path towards it. For that I seek to use Marx's more anthropological elaborations as well as his criticism of capitalism, to reflect on how Communism must deal with the challenge of surpassing bourgeois notions of freedom and equality in a world which is deeply marked by capitalist destruction. I draw on existing literature, which I believe already entails important insights about a "Communist vision" of freedom. My goal is then to extrapolate two core thoughts about the rela-

tionship of Communism and freedom in Marx and the secondary literature to show how they must be interwoven to enrich the inner-Communist debate about the practical relevance of freedom in a potential Communist society.

The two sides of Communism

As stressed, one of my aims is to enrich the debate about freedom under Communism. To do so, it is inevitable to briefly discuss what is understood under Communism, given that it is a term, which almost immediately evokes harsh reactions by supporters, as well as opponents, even if there is no precise and shared definition. Therefore, it is necessary to clarify how I will use the word in this article. To begin with it is central to emphasise that unlike Peter Hudis argues (2012, 190) Socialism and Communism are not used inseparably by Marx or Engels. Although Hudis is certainly right, that there exist some imprecise usages of both terms, this should not lead us to becoming blind for the actual differences, which existed between the two historical movements (Graf 2025a, 56–65; Leopold 2015, 35). Marx and Engels clearly self-identified themselves as Communists and therefore this will also be the term used by me. Nevertheless Hudis is of course correct, when he remarks, that Marx never introduced today's popular distinction between Socialism as a first phase and Communism as a higher stage (Hudis 2022, 365), as this distinction comes from Lenin, not Marx (Lenin 1974, 461).

Besides that, it might be insightful to take a closer look at what Marx meant by Communism. Here I see two popular meanings.

Firstly, as already touched above, Communism is designated as a state of society, in which private property is transcended, and a community of goods is achieved through the revolutionary victory over Capitalism. This reading is most famously applied in the notorious *Critique of the Gotha Programme* (Marx 2010a, 75–99).

Secondly, Communism does not only describe a future and more elevated state of society, but also the path towards it. In this meaning the term Communism refers to a historical tendency inherent to bourgeois society to (hopefully) entail its own negation. This reading is most prominent in the manuscripts of the so-called *German Ideology*, in which Communism is characterized as the “*real* movement which abolishes the present state of things” (Marx and Engels 2010a, 49). This meaning is crucial as it refers to the materialist and therefore scientific self-understanding of Marxism in demarcation from “Utopian Socialism.” It points out that Communism is not merely a thought project, but that its concrete circumstances must be derived from the material world that exists

and that should be transcended through it. Hopefully it will become clear why both meanings must be thought together, although in peculiar cases, the one meaning might be more appropriate than the other.

Combining those two elements, I will follow the brief definition given by Ernest Mandel, who explains that Communism designates

Both a classless society without property, without ownership—either private or nationalised—of the means of production, without commodity production, money or a state apparatus separate and apart from the members of the community, and the social-political movement to arrive at that society. (Mandel 1990, 87)

Humans, animals and the body: Revisting some anthropological considerations of Marx

When trying to discuss the relationship between labor, freedom and individuality in an alleged future communist society, it is imperative to start with the undeniable biological circumstances. For providing a materialist analysis, at least two tasks must be fulfilled. Firstly, the palpable material conditions of human life must be acknowledged. Secondly, drawing on this, one must see how those overtemporal conditions always only exist under peculiar concrete, historical and social relations. Drawing on those methodological assumptions, it makes sense to start the examination with one presumably basal but still undertheorized category: the human body.

As Søren Mau (2026, 5) remarked; Marx by performing his break with Ludwig Feuerbach, turned to a more intense engagement, with “human corporeality.” As early as the *Germany Ideology*, Marx and Engels insisted upon the central importance of harnessing nature as a consequence of the peculiar circumstances of the human body. They write

Men can be distinguished from animals by consciousness, by religion or anything else you like. They themselves begin to distinguish themselves from animals as soon as they begin to *produce* their means of subsistence, a step which is conditioned by their physical organisation. By producing their means of subsistence men are indirectly producing their material life. The way in which men produce their means of subsistence depends first of all on the nature of the means of subsistence they actually find in existence and have to reproduce. (Marx and Engels 2010a, 31)

Following this line of argumentation humans must be considered overwhelmingly incapable of surviving in raw nature. Although this seems to be quite near, to the argumentation of the radical right-wing thinker Arnold Gehlen, who conceptualized humans as “Mängelwesen/ deficient beings” (Gehlen 2016, 16), the conclusions could not be further apart.

Whilst Gehlen derived the necessity of domination and nation states as ethnic communities, Marx saw it as a potential strength of humanity, to be capable of changing one's natural surrounding to a degree, which remains unmatched in the animal kingdom. The human body entails many capacities as well as many natural boundaries (Fracchia 2005, 43). The peculiarity of humans to be dependent of consciously harnessing nature leads to a double-bind situation for them. Their life process can be seen as more vulnerable. This, at least implicitly, means that community and division of labour are necessary conditions for human flourishing. On the other hand, it leads to humanity's extraordinary position, that allows them to gradually liberate from natural dependencies and scarcities. This progress of overcoming scarcity functions over cultivation of land and the implementation of tools and machines (Mau 2021, 104). Speaking with Benjamin Franklin, Marx once characterized humans as "tool-making animals" (Marx 2010b, 189).

To be precise here, Marx did not deny that other non-human animals could also coordinate their material surroundings in quite astonishing fashion (Sommer and Stache 2023, 10). Also, Marx's dialectical anthropology does not evoke a necessary ontological distinction to other animals, but rather a historically constructed progress of distinguishing oneself through the act of labor (Stache 2019, 77).

Furthermore, Marx does not only distinguish humans from other animals for their usage of tools and machine but also because of the cognitive operation, which humans already perform before the actual start of their work:

A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality. At the end of every labour process, we get a result that already existed in the imagination of the labourer at its commencement. (Marx 2010b, 188)

The peculiar material reality of human's physiology itself entails the historical possibility of a rationally organized society. The special suitability of mankind for developing history and collective progress is written in to their physiognomy.

Labour as an overtemporal condition of human life

Marx understood labour as an inevitable characteristic of human life. Throughout all human history there has been a necessity to carry out

certain tasks. Contrary to broadly held assumptions Marx did not believe work to be the only source of wealth. In the first volume of *Capital*, both workers and nature are described as the “original sources of all wealth” (Marx 2010b, 503). In his famous *Critique of the Gotha Program* he states very clearly that nature itself must be appropriated as one source of wealth. He writes:

Labour is *not the source* of all wealth. *Nature* is just as much the source of use values (and it is surely of such that material wealth consists!) as labour, which itself is only the manifestation of a force of nature, human labour power. (Marx 2010a, 81)

On the creation of use values Marx explained:

labour is an activity which adapts material for some purpose or other, it needs material as a prerequisite. (Marx 2010c, 278)

Consequently, he points out that natural resources and human labour must be understood as an intertwined relationship. Humans themselves are natural beings. However, in their interaction with nature, they use the available resources and transform them into use values. This means that nature provides raw materials which are rarely suitable for direct use. In the first volume of *Capital* Marx clarifies:

Labour is, in the first place, a process in which both man and Nature participate, and in which man of his own accord starts, regulates, and controls the material reactions between himself and Nature. He opposes himself to Nature as one of her own forces, setting in motion arms and legs, head and hands, the natural forces of his body, in order to appropriate Nature’s productions in a form adapted to his own wants. By thus acting on the external world and changing it, he at the same time changes his own nature. He develops his slumbering powers and compels them to act in obedience to his sway. (Marx 2010b, 187)

Earlier in the text he remarks:

Productive activity, if we leave out of sight its special form, viz., the useful character of the labour, is nothing but the expenditure of human labour power. Tailoring and weaving, though qualitatively different productive activities, are each a productive expenditure of human brains, nerves, and muscles, and in this sense are human labour. (Marx 2010b, 54)

Therefore, labour in a very general sense can be described as a human attempt to use the natural conditions given for its own purposes. Humans thus interact with nature and modify it to serve their needs. In the *Grundrisse*, Marx explains:

All production is appropriation of nature by the individual within and by means of a definite form of society. (Marx 2010d, 25)

In the first volume of *Capital*, he points out:

The labour process, resolved as above into its simple elementary factors, is human action with a view to the production of use values, appropriation of natural substances to human requirements; it is the necessary condition for effecting exchange of matter between man and Nature; it is the everlasting Nature-imposed condition of human existence, and therefore is independent of every social phase of that existence, or rather, is common to every such phase. (Marx 2010b, 194)

As a result of these general anthropologic considerations, Marx ascribes to labour in general a fundamental role in all human societies. Underneath the abstraction of all precise designations of labour processes under various historical social formations, the fundamental concept of labour defined as the expenditure of brain and muscles can be described as an inevitable necessity. This is what Marx clearly emphasises:

So far therefore as labour is a creator of use value, is useful labour, it is a necessary condition, independent of all forms of society, for the existence of the human race; it is an eternal natureimposed necessity, without which there can be no material exchanges between man and Nature, and therefore no life. (Marx 2010b, 53)

Reading Marx against the myth of Prometheism

It has been rightfully established, that the peculiarities of the human body and brain go hand in hand with a unique chance for mankind to consciously form its environment. It is furthermore true, that consequently Marx ascribed increases in productivity as a liberating function for the development of humanity and its capabilities. This generally positive attitude towards the liberating capacities of productivity and machinery led to a well-trodden reproach of Marx for his allegedly “Promethean attitude,” as Anthony Giddens claimed (Giddens 1981, 60). Despite its prevalence, this allegation cannot hold water. As Kohai Saito (2016) has shown Marx was far from not considering the disastrous environmental results of capitalist accumulation. Instead, with the shift towards Justus von Liebig’s research Marx grasped humans as being forced to make use of their environment, whilst still seeing humans themselves as part of the environment (Pineault 2025, 24–30). The claim, that Marx thought of mankind to be situated above nature is untenable. Instead he clearly stated that humans must be aware of their dependency of nature.

Nay more, in this work of changing the form he is constantly helped by natural forces. We see, then, that labour is not the only source of material wealth, of use values produced by labour. As William Petty puts it, labour is its father and the earth its mother. (Marx 2010b, 53)

Moreover, also Engels warned that interfering with natural cycles without considering possible long-term consequences could ultimately outweigh the supposed benefits of technological domination over nature:

Let us not, however, flatter ourselves overmuch on account of our human victories over nature. For each such victory nature takes its revenge on us. Each victory, it is true, in the first place brings about the results we expected, but in the second and third places it has quite different, unforeseen effects which only too often cancel the first. (Engels 2010a, 460–461)

Humans are natural beings. They are forced to harness nature. To do so they often use (highly developed) tools. Nature and work are both the roots of all accumulated wealth. The starting point of human history is not a form of romantic connection between humans and nature, but the difference between humans and their ability to provide themselves with the goods needed to survive. It is the primitive disparity between humans and the ability of their natural conditions to fulfill their needs (Mau 2021, 109). The fulfillment of needs is particularly closely tied to the achieved level of productivity. Here Marx explains:

natural wants, such as food, clothing, fuel, and housing, vary according to the climatic and other physical conditions of his country. On the other hand, the number and extent of his so-called necessary wants, as also the modes of satisfying them, are themselves the product of historical development, and depend therefore to a great extent on the degree of civilisation of a country. (Marx 2010b, 181)

In the *Grundrisse*, Marx states:

Hunger is hunger; but hunger that is satisfied by cooked meat eaten with knife and fork differs from hunger that devours raw meat with the help of hands, nails and teeth. (Marx 2010d, 29)

With the evolution of productivity, human needs increase as well. The starting point of a materialist analysis must therefore be the necessity for (re-)production of life (Haug 1973, 4). For that it has been shown that Marx assigned the special human capacity to make use of its surrounding environment an inherently progressive role, as it marks the necessary precondition for human development as a “history of liberation” (Arndt 2023, 161). He did so without uncritically embracing the potential threats inherent to a deep alteration of nature.

Marx's critique of bourgeois freedom

As stressed Marx worshipped the act of working as a progressive effort of humanity to materially fulfill its given special capability to increase living standards. Also, it has been briefly indicated, that Marx aimed at human flourishing and “freedom” from its naturally given dependence. Nevertheless, the section above operated on a very abstract and over-temporary level of discussion. For now, it is mandatory to discuss how labour and freedom are intertwined in the actually existing society of Capitalism. For that purpose, I intend to highlight how abstract and formal bourgeois freedom, turns into unfreedom and domination for a major part of society, the working class.

In *Capital* volume one, Marx grants that capitalist society seems to be very free, when taken at surface level. He admits that the sphere of circulation is really characterized by glorious attributes of freedom and equality:

This sphere that we are deserting, within whose boundaries the sale and purchase of labour power goes on, is in fact a very Eden of the innate rights of man. There alone rule Freedom, Equality, Property and Bentham. Freedom, because both buyer and seller of a commodity, say of labour power, are constrained only by their own free will. They contract as free agents, and the agreement they come to, is but the form in which they give legal expression to their common will. Equality, because each enters into relation with the other, as with a simple owner of commodities, and they exchange equivalent for equivalent. Property, because each disposes only of what is his own. And Bentham, because each looks only to himself. The only force that brings them together and puts them in relation with each other, is the selfishness, the gain and the private interests of each. Each looks to himself only, and no one troubles himself about the rest, and just because they do so, do they all, in accordance with the preestablished harmony of things, or under the auspices of an allshrewd providence, work together to their mutual advantage, for the common weal and in the interest of all. (Marx 2010b, 186)

What becomes clear in this passage is an important distinction between the legal status of capitalist workers and feudalist servants. It is not a hoax that under bourgeois relations freedom rules. Formal, legal freedom is, in fact, granted. This is one aspect of freedom for workers, and it should not be dismissed as a chimera. However, Marx spoke of workers under capitalism as being free in two senses:

For the conversion of his money into capital, therefore, the owner of money must meet in the market with the free labourer, free in the double sense, that as a free man he can dispose of his labour power as his own commodity, and that on the other hand he has no other commodity for sale, is short of

everything necessary for the realisation of his labour power. (Marx 2010b, 179)

Formal and legal freedom is only half of the truth. Workers under capitalism are also free from access to any means of production. Consequently, they are separated from what they need to live. As a result, the “dull compulsion of economic relations” (ibid., 726) forces them to work not for any specific capitalist, but for the capitalist class as such.

In his famous study about the conditions of the English working class, Engels already deciphered the irony of this free choice for workers. The bourgeoisie formally grants a freedom of choice to the workers, which does not exist because rejecting the “offer” to work would necessarily mean dying from poverty and starvation (Engels 2010b, 376).

Where this compelling threat of starvation lacked, not even formal freedom was granted. As David McNally pointed out, the reliance on the “dull compulsion” enabling abstract freedom to satisfy capital’s need for cheap labour, depended on the lack of alternatives to make a living outside of the market system. Where this force did not exist, as there was still enough open land to be conquered by self-supplying peasants juridical freedom and equality was not granted, but capital’s need for cheap labour force was met by open slavery (McNally 2025, 34). Overall, the history of liberalism in its formal form remained a privilege of a small group of mainly white, rich men (Losurdo 2011). It was this hypocritical standpoint, that led Marx to speak of proletarians as “modern wage slaves” (Marx 2010e, 68). Actual freedom, so goes the argument, was neither granted the still existing formal slaves, nor the “modern” slaves and therefore the bourgeois sanctimonious self-image was deconstructed.

Returning to the capitalist centers, Marx referred to this new form of unpersonal domination, which is drastically different from the former feudal forms of personal dependency:

These external relationships, far from abolishing the “relationships of dependence,” merely dissolve them into a general form; they are rather the elaboration of the general *foundation* of relationships of personal dependence. Here, too, individuals enter into relation with each other only as determinate individuals. These *objective* relations of dependence, in contrast to the *personal* ones, also appear in such a way that the individuals are now ruled by *abstractions* whereas previously they were dependent on one another. (Marx 2010d, 101)

Marx understood that freedom in an abstract manner does exist under bourgeois circumstances. It was exactly this freedom which he scrutinized.

This type of individual freedom is therefore, at the same time, the most sweeping abolition of all individual freedom and the complete subjugation of individuality to social conditions which assume the form of objective powers, indeed of overpowering objects—objects independent of the individuals relating to one another. (Marx 2010c, 40)

For Marx, freedom and the abolition of freedom can go hand in hand. This is the case with bourgeois freedom for the “outlawed proletarians” (Marx 2010b, 731). Under class domination, abstract freedom and formal equality “turn out to be inequality and unfreedom” (Marx 2010d, 180). It was exactly the abstractness that systematically subsumed all people, regardless of their economic position, under a formal freedom, which necessarily reproduced poverty and a lack of prospects for the poor masses. The abstract approach towards freedom is epistemologically highly questionable, for various reasons. It is an ahistorical approach which lays upon a false methodological individualism (Heinrich 2020, 82). If one argues that Marx did not grant this sort of ahistorical and antisocial freedom much worth, it is true, however, it seems highly doubtful that one could use this as an argument.

Bruno Leipold highlighted how Marx used the narratives of political liberty, as they were articulated from the bourgeoisie in their conflict against the old ruling feudal classes and contrasted them to the lived experience of workers in daily factory business (Leipold 2024, 304–307). For this purpose, Marx used politically connotated formulations, to portray the owning class, as arbitrary rulers, speaking of them as “factory autocrats” (Marx 2010b, 428). Whilst claiming liberal rights in political terms, where they benefited, they did not let participation count in their realm of economy and private property. When outcalling the bigotry of the economic ruling class and their half-sided approach towards freedom (and equality) Marx went beyond the established formal juridications. Thereby it becomes clear, that Marx surpassed the necessary limitations of bourgeois freedom in regard of the quantity of people to which it applied. The accusations against him, treating him as an enemy of freedom are obviously flawed (Leipold 2025).

Additionally, it must be stressed, that Marx’s critique of bourgeois freedom also entails another perspective. Not only is freedom realized in bourgeois society quite exclusive, it is also one-sided to say the least. Marx’s argumentation further considers, how even the bourgeois class

is captured in its own structural compulsions and insofar not open to actually decide freely on some basic topics. Although capitalists can rule quite arbitrarily in their enterprises, this does not mean that they are “free,” if freedom is defined in a more emphatic sense. Being the “personifications of economic categories” (Marx 2010b, 10), of which they benefit, which however also force them to subsume under the rule of capital accumulation to survive in competition, they are unfree in a deeper sense. They are unfree to match some environmental and social standards, even if personally they wanted to, as it would put them at the risk to perish in competition (Heinrich 2018, 102–107). It is the merit of this tradition in Marxism, to deliver compelling arguments against a moralistic critique of bourgeois society, by insisting that the decisive question is not, whether an individual capitalist might be “morally” good or bad. Nevertheless Bruno Leipold makes an even more nuanced point, compared to proponents of the *Neue Marx-Lektüre*, which erases the unintended yet existing danger of sounding like an apologetic towards the executing capitalists, immanent to the core argument of the *Neue Marx-Lektüre*. He remarks, that whilst it is true that capitalists themselves must subordinate under the impersonal imperatives of the market, they only have to do so, under the accepted precondition, that they want to fulfill their social role as capitalists, to benefit from worker’s exploitation: “Marx thought that we had to understand that it was only the capitalist’s will, *as a capitalist*, that was dominated by the market” (Leipold 2024, 338). Or as Peter Schadt explains, the competition of the capitalists, including its compelling imperatives, is nothing but the “result” of *multiple capitalists’ interests* in maximizing profits (Schadt 2020, 114–115).

Beyond this, the same logic applies to the proletarians competing for (the best) jobs, who are forced to pursue their own interest on the cost of others. Resulting from their economic subordination they are unfree to establish a connection to their fellow human beings in a truly solidaric way. However, as Leipold rightfully observes, the proletarian precarity makes it impossible for them, to opt-out of the system and to simply consume their accumulated wealth, as there is none (Leipold 2024, 339). The market imperatives, executed by the empirical individual capitalists remain ubiquitous for the proletarian.

Moreover, one can make this argument on an even more basal level. Not only all individuals, but society as a whole, is basically stripped of the ability to freely deliberate political decisions, as it must always keep

in mind the success of the national capitalist economy as an inescapable precondition of its existence.

On a political ground capitalism and its necessary priority on profit-maximization denies (or at least shrinks down) a form of social freedom, which would consist in the collective ability to prioritize some social goods over others, even if they are not financially attractive. What this shows is, that the break with Capitalism must be situated on a deep ground. It is not enough to exchange singular operative persons. It is even not sufficient to solely overcome the capitalist class as a whole, whilst the general categories of commodity production and competition remain untouched.

In conclusion, Marx's access to bourgeois freedom relies on at least three core arguments. First of all, he truly acknowledges that abstract freedom is granted (in the developed capitalist centres) and that this is real progress compared to feudalist personal domination. Secondly, he dialectically shows how even this formal freedom, shifts into actual unfreedom for the major part of society, which lacks access to the necessary goods of lives and therefore becomes compelled to sell themselves "piecemeal" (Marx 2010f, 203). Thirdly, Marx's argument is located on a more political level, as it touches the (im-)possibility of freely chosen collective deliberation and practice mechanisms.

Going beyond liberal freedom with Marx's materialist approach

As seen, Marx was far from supporting the hegemonial narrative of freedom as an innate right of man. He was clearly opposed to this kind of supertemporal and abstract conceptualization of freedom. While liberal ideas conceptualise humans as being born free but finding themselves caught in shackles, Marx had a completely different approach to freedom. He was aware of the inherently social character of laws and rights, but more importantly of humans themselves. He did not think of humans as being free in a general manner, but as always being embedded in certain material and social relations, which decide to which degree freedom is possible or not. As Pierre Charbonnier grasped it "nothing is more material than freedom" (Charbonnier 2020, 9) because to be actually free to pursue one's interests demands remarkable material foundations.

It is inaccurate to conclude that Marx did not care about freedom. Quite the opposite: he supported the struggles for freedom and emancipation of the oppressed world wide (Graf 2025b, 379–384). For him free-

dom, in its liberal fashion was a progressive temporary achievement underpinning the activities of the Communist movement and freedom in its more developed Communist sense, was a status achieved through the collective organization of use values by the association. Here a serious difference between classical individualistic notions of freedom and the Marxian account comes into play. For Marx, other humans, are not an alarming threat to one's sacral freedom, but they are needed to realise the material conditions of acting in accordance with one's interests. He bluntly states: "Freedom in this field can only consist in socialised man" (Marx 2010g, 807).

Here he reflects the impossibility of humans living a decent life of material wealth without a high degree of cooperation. Elsewhere he became even more precise:

Man is a *zoon politikon* in the most literal sense: he is not only a social animal, but an animal that can isolate itself only within society. (Marx 2010d, 18)

In addition to this, he explicitly emphasizes the individual's dependency on the collective:

The further back we go in history, the more does the individual, and accordingly also the producing individual, appear to be dependent and belonging to a larger whole. (ibid.)

Consequently, one sees that Marx has a completely antagonistic approach to the problem of freedom, individuality, and society, in contrast to bourgeois methodological individualism. Not only does he not see society as the ultimate threat to individual freedom, he goes so far as to insist upon the inherent social content of individuality. Community and society become a precondition for the realization of individuality.

For Marx, freedom exists only in relation to an object of which one can be free. Under communism, for instance, people are free from class-based domination. However, fulfillment of basic needs must be seen as a precondition for everything else. Meaning: individual development can only be realised when more basal inquiries are already met. For this, cooperative production is central. Furthermore, humans rely upon other humans as partners to fulfill their needs and to follow their own goals.

One very simple example helps to illustrate this. One can play football on his own. One can shoot and pass against a wall. However, the game and the fun will be severely restricted because of a lack of the teammates and opponents required to play a normal game. Many of the most joyful actions, such as tackling or shooting on a goal with a goalkeeper,

require the existence of teammates. Here interaction and cooperation with other humans is the foundation of self-fulfillment. One could also go further, and ask who produces the ball, or the wall to kick against. It is dubious to argue that people are free by nature but tied up in shackles through society. Quite the opposite is true. People need material conditions and social interactions to follow their very purposes. Cooperation to efficiently produce use values is an inevitable precondition towards a liberated life.

Drawing on this basic, but crucial insight we can now spend some time debating the perhaps most prominent passage from Marx about the relationship of freedom and necessity in a potential Communist society. In Volume 3 of *Capital* Marx writes:

In fact, the realm of freedom actually begins only where labour which is determined by necessity and mundane considerations ceases; thus in the very nature of things it lies beyond the sphere of actual material production. Just as the savage must wrestle with Nature to satisfy his wants, to maintain and reproduce life, so must civilised man, and he must do so in all social formations and under all possible modes of production. With his development this realm of physical necessity expands as a result of his wants; but, at the same time, the forces of production which satisfy these wants also increase. Freedom in this field can only consist in socialised man, the associated producers, rationally regulating their interchange with Nature, bringing it under their common control, instead of being ruled by it as by the blind forces of Nature; and achieving this with the least expenditure of energy and under conditions most favourable to, and worthy of, their human nature. But it nonetheless still remains a realm of necessity. Beyond it begins that development of human energy which is an end in itself, the true realm of freedom, which, however, can blossom forth only with this realm of necessity as its basis. The shortening of the working day is its basic prerequisite. (Marx 2010g, 807)

This shows that freedom itself remains only possible within the objective reality of corporeal materiality. In a very basal sense freedom must remain relative to some degree, as for example there exists no freedom against the objective laws of nature. Besides this obvious insight, this touches the relationship of necessity and freedom. Humans, by their material reality as natural beings, are forced to fulfill their physical needs. This highlights the strict materialist approach inherent to scientific Communism. Freedom can only mean a status acquired through a collective and rationally organized use value focused economy and no

lofty entity as it serves in bourgeois society. Freedom can never be absolute, as it is always tied to concrete political and economic circumstances, which still possesses materiality.

To conclude. Marx did not deny the relevance of personal freedom but rejected conceptualizing freedom in an abstract manner of methodological individualism. On the contrary, he reflected on the conditions of relative freedom. Humans cannot overcome the basal necessity of working and modifying nature to their purposes. Furthermore, they depend on each other and a form of cooperation to guarantee the needed material and social conditions for their individual pursuit of happiness. Freedom is always relative, and restrictions can be found in the material and social circumstances. However, those restrictions can be partly overcome by cooperation and productivity. It therefore makes sense to speak not of freedom in an abstract sense but of a gradual, always unfinished process of liberation (Arndt 2023, 167). Additionally, one could also distinguish between various degrees of freedom. People incrementally free themselves of burdens which they find in their given circumstances. Marx is by no means an enemy of freedom, but an opponent of bourgeois abstract concepts, which do not reflect material and social conditions. As we will see in the next chapter, achieving a high degree of individual freedom is, in fact, the goal of a communist society.

The relationship between freedom, labour and individuality under Communism

We have already read in his own words that for Marx the “realm of freedom” only begins where the “realm of natural necessity” is transcended. Broadening this “realm of freedom” is the goal of production under communism. While the “realm of necessity” cannot be abolished completely, society seeks to drastically minimize the time of the working day it must spend on it.

Free development of individualities, and hence not the reduction of necessary labour time in order to posit surplus labour, but in general the reduction of the necessary labour of society to a minimum, to which then corresponds the artistic, scientific, etc., development of individuals, made possible by the time thus set free and the means produced for all of them. (Marx 2010c, 91)

In *Value, Price and Profit* Marx reiterated the significance which he ascribed to free time available for resting and for higher self-fulfilling activities:

Time is the room of human development. A man who has no free time to dispose of, whose whole lifetime, apart from the mere physical interruptions by sleep, meals, and so forth, is absorbed by his labour for the capitalist, is less than a beast of burden. (Marx 2010h, 142)

It can be said that Marx ascribed labour a significance for the realisation of “real freedom.” Despite this, the first condition for this free work is that the individual is not forced to do it but rather finds creative joy in it.

Under Capitalism, necessary labour should be diminished, not to enhance free time and the possibility for individual development, but to increase profit rates and to increase unpaid time. Under Communism, diminishing the time needed to create certain existential goods remains a goal. But the ultimate goal now becomes maximizing the time and material conditions for free chosen activity. This means not only that enough free time must be created, but also that the needed use values for individual self fulfillment must be produced. Consequently Communism does not demand ascetism. Long before his mature economic studies, in the *philosophical-economical manuscripts* from 1844, Marx already mocked contemporary communists for advocating a primitive communism. Even back then, when he was far from having a mature understanding of the bourgeoisie society, he insisted that an increase in living standards should be affirmed and not rebuked as some sort of degenerated modern vice (Landa 2018, 3 ff.). While politics under real existing socialism often despised luxury and material wealth, their putative stylite Marx had a completely different approach.

In the *Grundrisse*, Marx reformulates his positive opinion of consumerism and material wealth:

Real economising—saving—consists in the saving of labour time (the minimum production costs, and their reduction to the minimum). But this saving is identical with the development of the productive power. Hence in no way *renunciation of enjoyment* but development of POWER, of the capacity to produce and hence of both the capacity for and the means of enjoyment. The capacity for enjoyment is a condition for it, and hence the basic means for it, and this capacity is created by the development of an individual disposition, productive power. (Marx 2010c, 97)

In another passage he defines “*luxury*” as “the opposite of *natural necessities*” (Marx 2010d, 452). He clarifies:

Necessary needs are those of the individual reduced to a natural subject. (ibid.)

As established above, Marx was no supporter of destruction of natural resources. He did not define wealth in purely material terms. On the other hand he was not against a materially good life for everybody. His Communism was not hostile to the good life, but sought to establish a new valurisation of quality rather than pure quantity of cheap goods.

In this qualitative definition of wealth, Marx included certain forms of performing labour. He even criticized Adam Smith for having too negative an approach towards labour:

But equally A. Smith has no inkling that the overcoming of these obstacles is in itself a manifestation of freedom—and, moreover, that the external aims are [thereby] stripped of their character as merely external natural necessity, and become posited as aims which only the individual himself posits, that they are therefore posited as self-realisation, objectification of the subject, and thus real freedom, whose action is precisely work. (Marx 2010d, 530)

Here the ambivalence of labour becomes clear. On the one hand, it is an imposition, which requires the expenditure of “brain, muscles, nerves,” and so on. On the other hand, it provides the opportunity to realize personal aims. This is why Marx went so far as to admit that labour could become an act of “real freedom” when it is carried out as “self-realization.” It is crucial to emphasize the conditions, that must be met for work to become “self-realization.” Marx admitted that this could never be the case under present or historic forms of forced labor:

Of course, Smith is right that in its historical forms of slave labour, serf labour and wage labour, work is always repulsive and always appears as *externally imposed, forced labour*, and as against that not-work as “liberty and happiness.” This holds doubly: it is true of this antagonistic work and of everything connected with it, it is true of work which has not as yet created the subjective and objective conditions (or also of the pastoral, etc., state which has lost them) for work to become *travail attractif*, to be the self-realisation of the individual, which in no way implies that work is pure fun, pure amusement, as in Fourier’s childishly naive conception. Really free work, e.g. the composition of music, is also the most damnably difficult, demanding the most intensive effort. (Marx 2010d, 530)

Free work begins only after the “realm of natural necessity” is left behind. However this does not mean that “realm of freedom” and “realm

of labour/work” are opposites. In the *Grundrisse*, Marx even describes this free labour as the “living, form-giving fire” (Marx 2010d, 286). Here inspiration coming from the “Utopian Socialism” can hardly be overseen. This does not mean that this work is easy. The scientific or artisan actions people carry out demand a high degree of skill and concentration. Under Communism, increasing the time available for this kind of self-fulfilling work is the goal of production. Therefore Marx goes so far as to define free labor in a higher communist society as “not only a means of life but life’s prime want” (Marx 2010a, 89). It becomes clear that freedom and discipline including labour are by no means necessary contradictions. Not only because a certain discipline and accountability will remain inevitable in the remaining “realm of necessity” to successfully plan and perform a shared economy, but also because self-development demands self-discipline. In this regard James makes an interesting point. Freedom and constraint and not even freedom and subordination under another person’s command must be contradictions, as long as this subordination was chosen freely to attain a common goal (James 2017, 284). As an example for that one could think of a football team, all voluntarily agreeing on listening to the Coach and to follow his instructions, convinced that this will help them to achieve their shared goal. For a communist society this means that freedom and subordination must not stand in contradiction, as long as the latter is temporary and chosen by the individual to ultimately follow its own pursuits. Ultimately this brings up the question of “revolutionary subjectivity.” Famously Marx argued for the necessity of a revolutionary transitional period also because of the requirement of self-alteration to become a suitable Communist subject (Marx and Engels 2010a, 214). As shown, considering the supertemporal reality of material necessity makes it imperative of Communist subjects to self-organize after abandoning the “dull” compulsions of poverty and starvation, which previously forced them to work. Insofar free subjects must foster a culture of reliance to perform the supertemporarily needed exercises after the economic force is overcome. Communist liberation requires a complete alteration of one’s relationship to labour and duties. People need to acknowledge that the new society actually matches their interests and relies on their proactive participation. Given that, Battistoni argues, that it makes sense to speak of “freedom in necessity” (Battistoni 2025, 216). Freedom would then mean choosing without monetary or political constraints how to organize the economy so that it serves to meet the interests of the people living in it.

It has been established that the Communist society would radically redefine wealth not in the form of commodities and money but in time and material circumstances enabling individuals to grow and flourish. In this regard some basic, often joyless tasks may remain necessary, but they serve a higher goal. Here Robert X. Ware warns us to uncritically apply the categories of a realm of “freedom” and one of “necessity” as separate entities, in which the latter comes after the former. Instead an association of free producers is of course also capable of debating whether certain production processes might take longer, but therefore could be more joyful (Ware 2019, 93). Here Battistoni’s more social and deliberative approach towards freedom comes back into play (Battistoni 2025, 216). Unlike under Capitalism, in which the concrete organization of the labor process is mandatorily decided through its undebatable aim of capital accumulation, Communist economy serves the interests of the people. This means that while a materially undeniable necessity to produce use values is a supertemporal reality, the concrete fashion of this production process remains up to debate. The collective could value a creative working process over pure timely efficiency. On the other hand, it could also be decided that some activities cannot be made joyful after all and for that should only be regarded under the lenses of time reduction.

Perhaps the most striking example for this potential new Communist social freedom is the current role AI plays. In Capitalism, many creative jobs are being wiped away by artificial intelligence. Designing and building pieces of art is being outsourced to machines, as it is cheaper, whilst the harsh drudgery that brings absolutely no joy at all remains left over to humans. It is hard to imagine this approach towards the potential of artificial intelligence to improve people’s life, would remain the same if society as a whole could collectively reflect how (long) it wants to work and what it wants to produce.

To open up a debate on those issues demands a clear break with Capitalist logic and probably also a break with the established machinery, which itself bears a certain economic logic (Mau 2021). Furthermore, it demands collective deliberation processes on how society wants to organize itself and how it wants to deal with the remaining necessary drudgerys. Consequently, an approach towards Communism, which believes in the possibility of a purely bureaucratic planning mode fails to grasp the complexity of decision making. Still forms of non-hierarchical decision-finding must be established.

To cut a long story short. Undoubtedly Marx embraced a high productivity to secure material wealth. By no means did he oppose public luxury. He supported a high living standard as well as free disposable time. Under Communism, the necessity of producing certain useful goods remains a given. The time required for this should be reduced as far as possible (Graf 2023, 9), although the definition of necessary labour and labour, which itself brings joy can blurr from time to time. Beyond this, the self-realisation of individuals is the goal. Pies and Leschke were right in stating that Marx supported “Communist individualism” (2005). The common reproaches of Marx as being collectivist and denying individuality could thus not be further from reality. Quite the opposite is true; broadening space for individual fulfillment is the goal of production under Communism. However, collective cooperation is a requirement for precisely this purpose. Or as Luca Basso has put it:

He is outlining a sort of collective “Robinson” whose determinations are not atomistic but social, a “social” that is not conceived in opposition to the “individual” [...]. This means articulating the common with the singular not by way of subsumption [...] but on the basis of co-operating among individuals, thus empowering their individual faculties. (Basso 2016, 198)

Countering the hegemonial accusation of collectivism and an alleged Marxian contempt towards individuality, it is necessary to be more precise. Marx’s criticism attacked the social atomism of classical liberal theory and the metaphysical treatment of a totally “free” subject as invented by political economy. Marx (and Engels) criticized a society in which the flourishing of one came to the costs of another one. This does not stand across understanding that Marx supported a theoretical and practical program aiming at universal emancipation, including all those who were ignored by classical liberal theories. As Tony Smith rightfully observed: “Accepting normative individualism is fully compatible with agreeing that individuals are not atoms” (Smith 2017, 57).

A short recapitulation

By reconsidering the Marxian critique of bourgeois abstract freedom I hoped to extrapolate two strings of argumentation that have both been acknowledged by other scholars before, but which, from my perspective need a further unifying approach.

Firstly, Communist freedom on an individual level seeks to broaden the “realm of freedom,” meaning the disposable time for free chosen activity and self-fulfilment for the individual. In that sense Marx devel-

oped a dialectic understanding of the relationship between the individual and the collective, in which the holistic development of the former is enabled and not merely limited by the latter. In this understanding Communism remains guarded by the principle of “an association, in which the free development of each is the condition for the free development of all” (Marx and Engels 2010b, 506).

This Communist freedom based on “normative individualism” was developed in the engagement with Stirner’s anarchist theory (Henning and Thomä 2010, 213) and theoretically strengthened by Marx’s enhancing engagement with political economy.

The more “individualistic” side of Marx’s concept of Communist freedom depicts Communism often in an ornate way, which bears the danger of conceptualizing Communist society as a purely harmonic land of milk and honey. In that sense, the individual notion of Communist freedom enables us, to portray a positive counter-image against existing Capitalist constraints, whilst it nevertheless brings with it the danger of undertheorizing the remaining conflict potential under Communist social relations.

Secondly, freedom under Communism is captured in a more political sense. Overcoming the restraints of capital accumulation imperatives opens up a space for actual collective political deliberation about the organizing of that common good. This tradition of Marx’s reception, which gained trace in the last few years by its focus on questions of post-capitalist forms of collective deliberation (see: Leipold 2024; Thompson 2019, 391–409; Roberts 2019, 41–58) is valuable as it centers the political dimension of capitalist unfreedom and therefore the collective liberative potential of Communism. It is the merit of this theoretical tradition to point out that “politics [are] an inescapable dimension of the communist” (Del Aguila Marchena 2022, 1).

As seen in my depiction above, this formal distinction between the two forms of Communist freedom cannot be entirely separated, but depend on each other.

A case against [formal] equality—*Critique of the Gotha Programme*

One of the most influential accusations against Marx and Communism throughout history has always been a putative devaluation of individuality for the sake of equality. Most notably, the practical politics of many existing socialist states have supported this narrative. The argument is that Marx’s fight for equality may be honorable but ultimately leads to

the complete extinction of individuality. Here, once again, bourgeois opponents use their own abstract categories of equality to supposedly rebuke Marx.

The allegedly most known text with regards to more or less concrete formulations on a future society is Marx's *Critique of the Gotha Programme*. This text can be considered a direct theoretical ancestor to his mature opus magnum *Capital* (Malysch 1978, 59). It is of special interest as it includes the most practical thoughts of the mature Marx with regards to a future society. As a result, one can learn a lot about Marx's ideas on the compound of freedom and equality.

When reading the short text, it becomes clear that Marx did, in fact, not support equality in its usual understanding. As already mentioned, in *Capital* Marx even ridiculed equality as an inherent capitalist ideology (Marx 2010b, 186). In the *Critique of the Gotha Programme* he openly declares that future law should not be equal, as the people whom it should serve are not equal (Marx 2010a, 87). He points out:

It is, therefore, a right of inequality, in its content, like every right. Right by its nature can exist only as the application of an equal standard; but unequal individuals (they would not be different individuals if they were not unequal) are measurable by an equal standard only insofar as they are made subject to an equal criterion, are taken from a certain side only, for instance, in the present case, are regarded only as workers and nothing more is seen in them, everything else being ignored. Besides, one worker is married, another not; one has more children than another, etc., etc. Thus, given an equal amount of work done, and hence an equal share in the social consumption fund, one will in fact receive more than another, one will be richer than another, etc. To avoid all these defects, right would have to be unequal rather than equal. (ibid., 86–87)

Here Marx gives credit to the peculiarities of humans as individuals. Under Communism, where the individual's benefit and flourishing is the main concern, this abstract equality must be rejected. Nevertheless, as Communism is an objective historical movement it must always deal with the society it inherited from Capitalism:

What we are dealing with here is a communist society, not as it has *developed* on its own foundations, but on the contrary, just as it *emerges* from capitalist society, which is thus in every respect, economically, morally and intellectually, still stamped with the birth-marks of the old society from whose womb it emerges. (Marx 2010a, 85)

Coming from a materialist and hence realistic perspective he was willing to acknowledge imperfectness as an inevitable feature of early

stages of Communism. Only with further progress after the successful implementation a superior political order, that objectively matches Marx's normative convictions could be installed. For the higher stage of Communism he gave the motto:

From each according to his abilities, to each according to his needs! (ibid., 87)

To sum up: Marx did not promote equality, at least not as it understood normally. His central measure was the fulfillment of needs (McCarthy 2017, 248), which he sought to organize as rationally and comfortably as possible. A Communist society should take individual circumstances, predilections, and needs seriously, instead of subsuming everyone under the sword of Damocles called "equality." Once again Tony Smith correctly stated that Marx was sure that:

All persons are equally worthy of concern and respect, from which it follows that all should have an equal fair opportunity to attain well-being. (Smith 2017, 335)

To say it clear, Marx was no foe of equality, but an upright critic of bourgeois abstract equality, which he transcended theoretically and sought to transcend politically practically by installing Communism. I therefore think that one could rightfully argue that Marx did support an universalistic normative standpoint, however one that was considering existing differences (Elias 2025, 68).

Dézamy, a materialist French Communist, who Marx and Engels highly cherished, once spoke of a reflected Communist stance on equality as "proportional equality" (Dézamy 1842, 50), meaning everyone to be equally valuable to society, not everyone getting the same. It is obvious that Marx (and Engels) had the same idea when thinking about the relationship between equality and individuality, even if they did not invent a peculiar term for this conviction.

Political implications in the age of disaster

Based on the thoughts of Marx (and Engels) outlined above, I find it necessary to briefly discuss what this means for a project of liberation nowadays. Surely the outlined theoretical insights can only serve as general guidelines for practical steps. Nevertheless, they can help to uncover the most pressing contradictions, with which revolutionary real politics must grapple.

For that purpose, it is crucial to keep in mind the synthesis between Communism as a process and Communism as a goal, as it is specific

for a materialist and scientific approach. Marx's unwillingness to provide a blueprint of a future Communist society was a result of his strictly materialist approach and his criticism of doctrinaire politics (Cleaver 2014, 267). Nevertheless, this does not mean that any guiding thoughts about a future society must be discarded as "utopian" (Graf 2025c, 207).

The "ruthless criticism" (Marx 2010i, 142) of contemporary capitalism demands a precise insight in its mechanisms, whilst the other task of thinking about outlines of a future Communist society also needs to consider the more abstract thoughts about the relationship between humans, society and nature.

Drawing from the ideas elaborated above, some principal questions regarding individuality and freedom in Communism can be brought up. Especially when thinking of Communism as a progress one must acknowledge that Capitalism's systematic motions do not only include a tendency towards Communism, as some (overly) optimistic assumptions in historical materialist philosophy suggested, but also a tendency towards the undermining of conditions, that make collective radical emancipation likely. Certainly, the most pressing issue in this regard is the rigid destruction of natural livelihood by Capital's "were-wolf's hunger for surplus labour" (Marx 2010b, 271).

Especially if one shares the argument, that Marx's theory entails a basal ethical standpoint of a non-bourgeois universal egalitarianism, which does not equal an anti-individualistic collectivism, then one must accept the materialist reality, that freedom under Communism must be understood rapidly different from its contemporary bourgeois meaning of dull consumerist liberties of the egoistic individual. Not only must one show, that Capitalism systematically denies the material needs for a fulfilled "free" life even of the more "privileged" proletarians in the imperialist centres, but that the kind of freedom, which Capitalism grants its few benefactors is not supportable after all. To put it shortly, neither can Capitalist freedom beyond its abstract sense be universalized, nor could such an universalization be desirable for a rational Communist future.

With that being said, a Marxian account of freedom must move beyond egomaniac conceptions of free development and broaden the picture towards collective deliberation processes (Battistoni 2025, 226). Communist freedom in "the new age of Catastrophe" (Callinicos 2023) must focus on ways of collectively debating how individual flourishing can be brought in lign with planetary boundaries. This in no way means

establishing an anti-individualistic collectivism, but it demands transcending bourgeois individualism. Obviously generalizing the consumer level common in the imperialist centres is no real option (Birkner 2014, 81). Defining freedom as the freedom to pursue an unsustainable egocentric lifestyle is no solution. Also, in this regard Capitalism must be broken with on a deeper level. It is not enough to break the power of the Capitalists, but the logic of capital in general, including the hegemonial portrayal of an allegedly “good life.”

Communist real politics needs to embrace a whole new definition of individual and collective well-being that transcends capitalist forms of mass consumerism (Saito 2024, 194). On the other side it needs to do so, whilst considering the still existing gaps in productivity of different political economies of the world. Neither can it generalize established Western Consumerism norms, nor can it apply a form of DeGrowth-Communism in every part of the world, regardless of its concrete situation. Communist “freedom” would not be ascetic, but it must overcome the hegemonial understanding of freedom as a relentless exploitation of natural resources.

Lastly, coming from a perspective that sees Communism as being stigmatized with Capitalist continuities one must be aware that the level of ecological destruction caused by Capitalism so far has already reached various irreversible tipping points. Following this, it will be indispensable to use a sure amount of social labour time to deal with the disastrous consequences by working on climate adjustment projects and to help victims of emergencies. Consequently, realism demands admitting that a Communist future would hardly be a pure land of milk and honey. Ultimately this requires to understand Communism as both: a truly radical break with the status quo and its hegemonial flawed conceptions of a good life and as the successor of the very society it so deeply criticizes. From my point of view, freedom in this realm can only mean the freedom to collectively and rationally debate how economy and human reproduction should be planned.

Conclusion

The hegemonial portrayal of Marx as being uninterested in freedom must be rejected. The narrative of a putative sacrifice of individual freedom in exchange for equality and justice cannot be upheld. Marx did not argue that the individual should be subordinated to the collective to support the higher good. In his argumentation he transcended the established bourgeois understanding on a quantitative and qualitative level. He

ascribed society as a whole a significant role in the realization of freedom. Being able to provide goods without being forced to work for most of the day is a precondition for the realisation of personal freedom and self-fulfillment. On a societal level overcoming the structural compulsion of constant accumulation is a necessary condition for a political community, which freely deliberates its shared goals and the path towards achieving them. It is only through cooperative interaction with others that such a degree of productivity can be reached, that conditions for personal freedom are created to a greater extent.

Unlike the liberal conceptualization of lonely but naturally free “Robinsonades,” Marx did not understand other human beings as mere limitations on personal freedom. For that reasons neither makes it sense to call him a supporter of “collectivism” nor a fan of “individualism” in the classical manner. Instead, he saw Communism as a way of creating a dialectical synthesis between individual and collective. He saw other humans as a necessary condition to attaining freedom. Further, Marx did not believe in freedom as an abstract category as understood by liberals. Freedom does not exist as such. It always exists under certain historical and social conditions. This means that freedom is always tied to certain boundaries, which can be shifted, but not ultimately abolished. Therefore, freedom is not an absolute entity. Especially, when drawing on the materialist notion that Communism follows Capitalism and does not arise out of the blue, one must accept the reality that it will remain bothered by serious longevities. Freedom in this regard can only mean “freedom in necessity” and must also consider the herited inequalities. Considering the urgency of climate catastrophe, freedom furthermore needs a qualitative shift away from consumerism to more sustainable immaterial qualities of life, whilst keeping in mind that different world areas inherit different conditions. Considering this Communism must be a radical break not only with society’s class character but with the very basal logic of production inherent to Capitalism. Centering the individual and its needs of course implies a transformed revolutionary subjectivity that itself transcended the stubborn conflict of subjective well-being and fellow human beings.

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Biography

Joshua Graf is a PhD candidate at the political science department of the University of Osnabrück. In his PhD project he examines the genealogy of communism in Marx and Engels. His focus in Marx-Engels-Research concentrates on their concept of Communism, the idea of revolution as well as their approach towards criticism of the bourgeois society. Additionally, he is interested in the critique of social work. He also works as a self-employed lecturer at different universities.



Critique of Systemic Reason: Josef Cibulka and Evald Ilyenkov on Cybernetics and Artificial Intelligence

Isa Jacobs, Jiří Růžička¹

ABSTRACT: The meteoric rise of cybernetics, systems theory and machine-based thinking in the Eastern Bloc during the 1960s was far from universally accepted. While Marxist humanists opposed those approaches, viewing them as a threat of manipulation and alienation, another significant strand of Marxist theorists took a different stance; they critiqued cybernetics and machine thinking as non-dialectical and therefore reductive. This paper examines the contested reception of cybernetics in Czechoslovakia and the Soviet Union, focusing on two key figures in the debate: Josef Cibulka and Evald Ilyenkov. Both engaged with cybernetics from a dialectical standpoint while criticizing different aspects of it. In Ilyenkov's case, the cybernetic conception of the mind as a machine clashed with his theory of the thinking body, which was influenced by Spinoza, Marx and Vygotsky. The core of Ilyenkov's disagreement lies in how to define thinking: for cybernetics, thought is a process of problem-solving, whereas for Ilyenkov it is the resolution of contradictions. Cibulka, by contrast, critiqued cybernetics for its formalistic and conservative tendencies, particularly in its application to social issues. He argued that it fails to account for qualitative change and defining systems primarily in terms of stability, whereas dialectical formations are inherently unstable. Beyond those immediate critiques, the essay also considers the broader implications of their analyses. Ilyenkov's engagement with cybernetics, particularly in his story *The Mystery of the Black Box*, offers a prescient reflection on artificial intelligence by raising fundamental questions about language and learning, as well as the social constitution of mind. Meanwhile, Cibulka's critique opens new perspectives on the problem of reason's self-reflexivity by offering a counter-argument to Adorno's negative dialectics, thus also highlighting key differences between Western and Eastern Marxist traditions and their respective critiques of machine thinking and automation.

KEYWORDS: Dialectics, artificial intelligence, cybernetics, systems theory, Evald Ilyenkov, Josef Cibulka, Eastern Marxism, dialectical materialism.

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Introduction

In his collection of sci-fi stories *The Cyberiad: Fables for the Cybernetic Age*, written in the 1960s, Stanisław Lem presents Trurl and Klapaucius, two inventors of all sorts of fantastical machines, including an apparatus that can create anything in the world beginning with the letter “n”—“nuclei” and “noses” but, apparently, not “Nothing”:

The machine sat still. Klapaucius rubbed his hands in triumph, but Trurl said:—“Well, what did you expect? You asked it to do nothing, and it’s doing nothing.”—“Correction: I asked it to do Nothing, but it’s doing nothing.”—“Nothing is nothing!” (Lem 2014, 5)

Another of their machines insists that two plus two is seven and then threatens the engineers if they fail to repeat its faulty result. There are poetry machines and the Femfatalatron, a vibrator reminiscent of Andrei Platonov’s Anti-Sexus, a communist masturbation device designed for the Soviet market.² Besides building cybernetic gadgets, Trurl and Klapaucius are immersed in the study of the General Theory of Dragons, a scientific paradigm dissatisfied with the simple fact that dragons do not exist. They believe that dragons can be non-existent in several different ways—a problem that can only be solved through cybernetics. There are “anti-dragons,” “minus-dragons,” and “imaginary dragons” (Lem 2014, 84). The two engineers founded an entirely new field of “statistical draconics,” a probabilistic theory of virtual dragons. Using a “dracotron,” the draconical cyberneticians quantize a dragon, measuring the energy of its particles and even determining the coordinates of its tail (Lem 2014, 87). In Lem’s parody of the cybernetics of his time, life is reduced to statistical fluctuation.

Similar critiques of cybernetics were formulated in socialist Czechoslovakia and the Soviet Union respectively, attacking a systemic conception of the mind from the vantage point of dialectical logic. This article reconstructs two of those critiques, focusing on Josef Cibulka and Evald Ilyenkov.³ It operates on both a historical and systematic register,

2. See Platonov 2013.

3. While Evald Ilyenkov has increasingly become a household name in Anglophone Marxist scholarship (Bakhurst 2023), the Czechoslovak thinker Josef Cibulka (1926) needs a few words of an introduction. He was among the most prolific and original Marxist philosophers of the post-Stalinist era in Czechoslovakia, yet remains almost entirely forgotten today. Unlike many of his contemporaries, in particular Marxist humanists, Cibulka did not foreground the human being and its activity in his critique of orthodox Marxism-Leninism. Instead, he centred his analysis on the concept of law

aiming to recover two critiques of cybernetics from the Eastern Bloc, situating them in their respective intellectual and political context while aiming to make them relevant for contemporary debates. We argue that socialist cybernetics and its various criticisms have gained new relevance in today's age of AI and climate crisis, where the possibilities and pitfalls of technosocialism—fusing algorithmic control with socialist economic planning—become urgent once again, as claimed in a recent study: “The organization of society through AI must, as was the case with proposals for comprehensive central planning or decentralized market-socialist planning before it, be able to achieve the goal of rationalization and thus eliminate the inefficiency, instability and inequality that is claimed to plague capitalism” (Boettke and Candela 2023, 45). In what follows, we argue that while cybernetics was embraced in the Soviet Union as a scientific tool for socialist planning, it also introduced a model of rationality that went against dialectical and materialist conceptions of mind. Marxist thinkers like Ilyenkov viewed machine intelligence as primarily oriented towards systemic control, thereby risking to reproduce the alienating logic of capitalism as an automaton. Against this, Ilyenkov and Cibulka defended a dialectical, embodied, and socialized conception of thinking. The collective labour of working through contradictions, they argue, is not reducible to computational or cybernetic processes. Cibulka in particular critiques cybernetics for reducing qualitative differences to abstract functions and thereby failing to grasp transformation. Ultimately, the paper frames the debate on cybernetics as a struggle between systemic and dialectical reason. What exactly those two concepts denote and why our two respective thinkers decided to criticize the first and defend the latter will be elucidated throughout the paper.

Marxist Machines? Cybernetics in the Soviet Union

In *Capital* I, Chapter Fifteen, entitled “Machinery and Modern Industry,” Marx writes that a centrally organized system of machines is the most developed form of production—“a mechanical monster whose body fills whole factories, and whose demon power, at first veiled under the slow and measured motions of his giant limbs, at length breaks out into the fast and furious whirl of his countless working organs” (Marx 1996,

as an objective tendency, placing it at the heart of Marxist epistemology and ontology. In doing so, he argued that orthodox Marxism had failed to grasp this concept dialectically. His project, therefore, was to elaborate a genuinely dialectical form of determination, which he regarded as intrinsic to the very notion of law.

384–385). The mechanical monster with endless tentacles, automated labour, thereby substituting the human individual. This demonic automaton is nothing less than capitalism itself. As Ilyenkov put it similarly in a 1966 article on cybernetics:

The organisation of this—unfortunately, not fantastic at all—machine, was already understood in detail a hundred years ago and described in a famous work called “Capital.” It is what capitalism is—production for the sake of production; a grandiose machine, that has become an end-in-itself, and has turned human into a means, a raw material for the production and reproduction of its insatiable organism. This grandiose machine, consisting of millions of partial machines, has gone beyond the control of human reason and will, it has become smarter and more powerful than any separate human individual that within it is playing the unenviable role of a cog. (Arsen’ev, Ilyenkov and Davydov 2024, 167f.)

The only way out of this machine, in order to liberate humans from their function as mere cogs, Ilyenkov argues, is “the communist transformation of the whole system of relations between human and human” (Arsen’ev, Ilyenkov and Davydov 2024, 169). Both Marx and Ilyenkov see capitalism as a machine, whereas they consider machines themselves not as inherently anti-socialist. Machinery has no essentialist political or social features; it acquires its socio-political nature within and through historically specific modes and conditions of production.⁴ In *Capital*, Marx uses the example of the knife which does not have an intrinsic social essence independent of its use and function. Machines only become capitalist through their interactions with and participation in human labour and activity. In the famous “Fragment on Machines” from *Grundrisse*, Marx writes that the absorption of labour into machinery was at the very origin of capitalism. “The accumulation of knowledge and of skill, of the general productive forces of the social brain,” according to Marx, “is thus absorbed into capital, as opposed to labor, and hence appears as an attribute of capital, ... insofar as it enters into the production process as a means of production proper” (Marx 1993, 694).

Under industrial capitalism, the worker’s skill is progressively absorbed into and, ultimately, supplanted by the machine. Yet the machine still presupposes the continuous presence of a worker, whether skilled or not, to operate it: to switch it on and off, to set it up, maintain it, supply raw materials, and oversee the production process as a whole. Human labor is divided and reduced to those fragmented activities. No

4. We thank one of the anonymous reviewers for their astute comments regarding the social and political nature of machinery.

longer does the machine serve the worker in the way an instrument or tool once had; rather, the worker now serves the machine. Yet, the worker remains still part of the immediate process of production. This ceases to be the case with the expected advent of full automation, when the worker ceases to be a cog in the machinery of production. A question then arises: according to what principles do these automata operate and by what logic are they guided? The answer is: by computers which are themselves governed by cybernetic principles.

In the Soviet Union, the adoption of cybernetics had a rocky start, at least regarding its official, public reception. Before the mid-1950s, it was denounced as a “bourgeois science” that allegedly sought to replace human beings with machine computation, thereby revealing its antihumanist and capitalist nature. However, the conditions for a broader positive reception had already been quietly established in the immediate postwar period, as computation and automatic control began to play an increasingly significant role within the military (Gerovitch 2002, 131–141). During the 1960s and early 1970s, cybernetics arguably gained greater prestige in the Soviet Union than anywhere else. One of the reasons was that computers were declassified and Soviet scientists could openly use them for the defense of the country.⁵ The second reason may have had an even greater impact: Stalinist “newspeak” convinced many Soviet scientists that words are inherently manipulable and therefore had to be replaced by mathematical formulas and algorithms which alone could claim objective truth (Gerovitch 2002, 161–163). Yet it was arguably the third reason that provided cybernetics with its ultimate practical legitimation: the promise of reforming the initially voluntarist and rigid framework of socialist planning by placing it on more flexible and scientifically verifiable foundations.

An edited volume entitled *Cybernetics in the Service of Communism* (1961) first explored the application of cybernetics in the USSR’s national economy, framing cybernetics as a general theory of controlling the centralized socialist economy. Economic planning was now conceptualized as cybernetic control.⁶ Among the early champions of cybernetics in the Soviet Union was the Czech philosopher and mathematician Arnošt Kolman who was based in Moscow at the time (Graham 1987, 274). Kolman’s 1954 speech in defense of cybernetics, later published in

5. On the rise of cybernetics, see Gerovitch 2002 and Graham 1987, 267–293.

6. On the institutional development of the AI research programme of the Soviet Academy of Sciences in the 1970–80s, see Kirtchik 2023. Also see Rindzevičiūtė 2016 and Tarchenko 2019.

the journal *Problems of Philosophy*, ignited Soviet debates on machine intelligence and the legitimacy of cybernetics.⁷ Later, however, Kolman became more cautious: “Cybernetic machines, even the most perfected, handling complex logic processes, do not think and do not form concepts” (cited in Graham 1987, 278).

In many respects, analogous developments can be observed in Czechoslovakia. The cybernetization of production and management—and even education—was widely seen as a bridge to a new phase of socialism capable of overcoming the distortions of Stalinism.⁸ Radovan Richta, arguably the foremost exponent of techno-optimism within the Eastern Bloc, regarded cybernetization as one of the three principal pillars (alongside chemicalization and nuclear energy) of the impending *Scientific-Technical Revolution* (STR), which announced a full automation of human production and science as the leading force of production.⁹ Cybernetics thus became closely intertwined with a new revolutionary vision in which the transformation of the productive forces—now conceived as the fusion of science with the full automation of production—was expected to bring about a real qualitative change within the economic base. Within this revolution Richta conceived the role of cybernetics primarily, if not exclusively, as a new form of management that replaces directive-based control with an active self-regulatory system—one that not only accommodates individuality and creativity but actively depends on them. Yet in one important respect, developments in the Soviet Union and Czechoslovakia initially diverged. In the Soviet case, during the Thaw, scientists’ (counter)attack was directed against the so-called philosophers who had been responsible for the official vilification of cybernetics.

In Czechoslovakia (and likewise in the GDR), by contrast, cybernetics presented itself, at least implicitly, as already a philosophical standpoint. This accounts for its interventions not only into ontological and epistemological debates but also the field of dialectics itself.¹⁰ For many philosophers associated with the techno-optimist current, it was, after all, cybernetics that could finally provide dialectics what it had lacked

7. Wiener himself visited the editorial office of *Voprosy Filosofii* in 1960, presenting his views on controlling thinking machines (Graham 1987, 280).

8. See Sommer et al. 2019.

9. See Richta 2018. For an analysis of post-Stalinist Marxist thinking in Czechoslovakia, particularly the role of technoptimism, see Mervart and Růžička 2025.

10. Setting aside the peculiar case of Arnošt Kolman, in Czechoslovakia it was above all the works of Juraj Bober and Jiří Zeman who sought to bring cybernetics into philosophical debates (See Bober 1967; Zeman 1962).

thus far: scientific rigor. As a result, dialectical totalities could be transformed into systems (entities with input and output, a mechanism of self-regulation capable of maintaining metastability); contradictions were basically replaced by *noise* (that is, the effect of the external environment), and Hegelian sublation by the feedback mechanism.

Almost immediately after the onset of the cybernetic frenzy in the Eastern Bloc, however, critical voices began to emerge from among Marxist philosophers, particularly those influenced by Hegelian dialectics and existentialist critiques of modern technology. Marxist humanists targeted above all the concept of the system, which they sharply contrasted with that of totality. In their view, the system operates predominantly through processes of selection guided by a utility function. In relation to human beings, such systemic behavior has a dehumanizing effect: it cultivates only those human qualities necessary for functional efficiency while neglecting the rest. The Hegelian-Marxist concept of totality, by contrast, seeks to embrace the human being in its entirety, leaving none of its qualities underdeveloped.¹¹

Another critical perspective centered on the perceived incompatibility between the dialectical and the cybernetic approach, both in their conceptualization of reality and in their understanding of thought itself. As noted earlier, cybernetics sought to recast traditional dialectical concepts within its own theoretical framework. For these philosophers, however, such an attempt was fundamentally misguided, as it failed to grasp the very essence of dialectical reasoning. In what follows, we will outline and examine the arguments of two prominent critics of cybernetic and systemic thinking: Ilyenkov in the Soviet Union and Cibulka in Czechoslovakia. We argue that both, in their own way, defended the primacy of dialectics, particularly in its significance for socialist society and communism as a permanent emancipatory horizon of humanity.

Can Machines Think? Two Critics of Cybernetics

In May 1962, the Academy of Sciences, where Ilyenkov worked, co-hosted the All-Union Conference on Philosophical Questions of Higher Nervous Activity and Psychology in Moscow.¹² More than a thousand Soviet physiologists, psychologists and philosophers discussed the latest developments in computation and cybernetics and how it affected materialist psychology. As Olessia Kirtchik put it, Soviet thinkers viewed

11. See, for example, Kosík 1976.

12. On the conference, see Graham 1987, 191f.

computers less as “thinking machines” than “tools to think with,” emphasizing the importance of human-machine interaction over algorithmic autonomy (Kirtchik 2023, 114). With regards to the impact of Lev Vygotsky’s enactive psychology on theories of technology in the 1960s, Kirtchik emphasizes that conceptions of social activity were at the heart of Soviet critiques of cybernetics. Thinking was approached in a holistic, anti-reductivist and enactive, rather than mechanistic manner.¹³ Social activity is also a key concept in Ilyenkov’s critique of systemic reason, where the cybernetic conception of the mind as machine clashed with his theory of the thinking body which he derived from Spinoza and Marx. The core of Ilyenkov’s disagreement with cybernetics lies in his uniquely dialectical conception of thinking: for cybernetics, thinking is a binary process of problem-solving; for Ilyenkov, following Marx, thinking is a creative grappling with contradictions.

Ilyenkov first approached the issue of cybernetics in a 1966 article, co-written with Anatoliy Arsenyev and Vasily Davydov, which argues against the claim that cybernetics can create a thinking machine modelled after the human brain.¹⁴ Ilyenkov and his co-authors were all members of the Scientific Council on Cybernetics, critically evaluating the philosophical and political implications of artificial intelligence. They claim: “When some people think that the whole problem lies in simply replacing the current state organs with thinking—planning and governing—*machines*, boxes like refrigerators, they are stepping on the ground of a kind of cybernetic-bureaucratic illusion, mythology” (Arsen’ev, Ilyenkov and Davydov 2024, 170). Cybernetics can never promise liberation from machine-like work; only communism can liberate humans: “It is much more reasonable to dream not of a machine smarter than human, not of an electronic brain, comparable to the human one, but of every living human brain working at the level of truly contemporary human culture, which for now, unfortunately, it still cannot do, being loaded with machine work” (Arsen’ev, Ilyenkov and Davydov 2024, 172). Communism frees humans from machine slavery and transforms the brain into a creative and fully developed organ of concrete thinking rather than systemic calculation.

13. See Di Paolo and Potapov 2024.

14. The paper was included in the volume “Lenin’s Theory of Reflection and Modern Science,” a collection emerging from the 1965 Meeting of Modern Problems of Materialist Dialectics in Moscow (Arsen’ev, Ilyenkov and Davydov 2024, 156).

Who Thinks Concretely?

Ilyenkov's foundational disagreement with cybernetics lies in the nature of thinking: where cyberneticians claim that "it is *the brain* that thinks," Ilyenkov insists that "it is not the brain that thinks, but the human with the help of the brain" (Arsen'ev, Ilyenkov and Davydov 2024, 157). One example is the famous brain in a vat experiment, an idea that fascinated both Feuerbach and Luria. For Ilyenkov, separated from the human body, the brain "will be thinking just as little as any telegraph pole or mould spread on the rocks of distant planets" (Arsen'ev, Ilyenkov and Davydov 2024, 157). In his 1968 sci-fi book *On Idols and Ideals* (Ob idolakh i idealakh), Ilyenkov would contemplate the possibilities of mold thinking, and in *Abstract and Concrete* even the cognitive potentialities of stones. One of the problems of his intelligent materialism is an inherent anthropocentrism: throughout his writings, Ilyenkov insisted on the peculiarity of human thinking over other minds.

For Ilyenkov, thinking requires more than just a brain; it needs the whole of the human body and its social activity, embedded in a larger framework of socio-economic relations. The brain needs other "organs," Ilyenkov contends, both organic and inorganic ones, such as tools: "In particular it is the organs that provide the sensory-object contact of this brain with the world outside of it, something like eyes, ears, tactile hands and other 'external receptors'" (Arsen'ev, Ilyenkov and Davydov 2024, 158). Referring to Marx, Ilyenkov and his colleagues note:

As long as a machine remains a machine, it remains only an artificially created organ of the socio-human intelligent will, the means of its active manifestation. And in this sense—an organ of the human brain, for by "brain" Marx always meant not only and not so much an organ of the individual's body, but an organ of the socio-human intelligent will, socio-human needs and of the "goals" that ideally express these needs. (Arsen'ev, Ilyenkov and Davydov 2024, 166f.)

In *On Idols and Ideals*, Ilyenkov claimed that the binary logic of machine thinking was incompatible with truly human, that is, dialectical thought. Staging a dispute between a cybernetician and a philosopher, the book also criticises the famous mathematician Andrey Kolmogorov, an early proponent of artificial intelligence.¹⁵ Artificial intelligence, for Ilyenkov, lacks two main qualities of thinking: mediation and imagination. Where machines only operate according to their own logic, human minds are able to mediate the logic of another through ideals. Machines

15. On Kolmogorov's view on machine thinking, see Kirtchik 2023, 117.

can be media, in this framework, but never mediators. What they lack is imagination (*voobrazhenie*), the ability to come up with new things, to create objects of fantasy. It is imagination for Ilyenkov that enables human beings to see the world through images and to actively participate in this shared world created by collective activity, within a system of ideals called culture. If one wanted to create a truly intelligent AI, he argues, it would not be enough to build an isolated brain but one would need to recreate an artificial version of the whole of human civilization. Human thinking is only one organ within a collective system of culture. Kirtchik places Ilyenkov's critique of cybernetics alongside Yury Lotman's 1977 article "Brain–text–culture–artificial intelligence" which argues, along similar lines, that a dialectical theory of AI "should not start from the facts of individual consciousness, but from the collective consciousness that is culture" (Kirtchik 2023, 116). Within Ilyenkov's materialist dialectics, the thinking mind is always already embedded in a larger collective culture.

While cybernetics has proven that "it is possible to reproduce only the machine-like functions of intelligence," it can not generate intelligence itself whose special feature "consists precisely in the constant process of 'sublation' of any finite scheme, in revealing logical contradictions within this scheme and resolving them by further investigation of *the concrete reality*, namely this reality itself" (Arsen'ev, Ilyenkov and Davydov 2024, 164). Artificial intelligence, for the Soviet dialecticians, "can be created only on the basis of dialectical logic and in no case on the basis of axioms and postulates of the logic of formal-mathematical constructions" (Arsen'ev, Ilyenkov and Davydov 2024, 164). It is important to note that Ilyenkov was not a Luddite: rather than being against machines as such he insisted on the necessity to transform human-machine relationships, in order to prevent machines from transforming humans into soulless slaves blindly serving the machine. For Ilyenkov, any human-machine relationship is at its core a human-to-human relationship mediated by a machine. It is not the machine itself that alienates humans but, as Ilyenkov examined in *Idols and Ideals*, it merely mediates existing alienated social relations. A similar point can be made about Large Language Models (LLMs) today: rather than being a source of alienation, LLMs mediate and process existing socio-economic conditions. For Ilyenkov, humans need to consciously shape the ways they use and interact with machines in order to prevent becoming merely living flesh as an energy resource for the machine, consumed

entirely and transformed into a calculating and labouring mechanism—a thinking brain.

The Black Box

Ilyenkov's most sustained engagement with cybernetics took place in an iconic story from *On Idols and Ideals*, titled "The Mystery of the Black Box." The tale offers a prescient reflection on AI, while raising fundamental questions about language and the social constitution of thinking. Even though Ilyenkov was a science fiction fan, he took a skeptical stance on machine intelligence and automation. Written for a general public, *On Idols and Ideals* aimed to defy hopes to solve problems within Soviet socialism by way of self-governing systems and technology. As we have seen, cybernetic visions of the mind as machine went fundamentally against Ilyenkov's theory of a thinking body. For Ilyenkov, thinking cannot be broken down into a series of neurological processes in the brain. In Ilyenkov's conscious materialism, the human mind joins a process of collective meaning-making. Interconnectivity is crucial to Ilyenkov's epistemology. Thinking is a communal activity, "not a mental act that is taking place in the skull of the individual, in the secret spaces of the brain's grey matter" (Ilyenkov 2019, 53).

Spinoza's somatic monism was crucial to Ilyenkov's post-Cartesian theory of thinking as an expression of collective, self-conscious activity. Like Spinoza, Ilyenkov considered the interaction between body and mind as an objective motion in the world. For Ilyenkov, thinking manifests itself in "the entire 'non-organic human body' that stands objectively over and against an individual human being, the body of civilization, including tools and temples, statues and offices, factories and political organizations, ships and toys—all that with which we are involved from the moment we are born and enter the human family" (Ilyenkov 2019, 13). Body and mind, the two Cartesian halves, are united in one thinking body, which thinks by molding its own form to shape other bodies.

Like blood, thinking streams through society's vessels and arteries, shocking through the entire system. Thinking is shaped by ideals, similar to the form of a jar growing under the hands of a potter, as Ilyenkov described it in *Dialectical Logic*. Thinking happens within the interactivity of hands, clay, and tools. The ideal is situated neither in the piece of clay nor the body of the potter but arises from the activity of transforming the clay into a jar. Rather than a systemic code, the ideal functions as a sort of "social algorithm" (Alva 2024, 8). Ilyenkov considered

cybernetics—which detaches thinking from its social milieu—a false science that had regressed to pre-Marxist materialism. He strongly opposed the idea that thinking machines could be more intelligent than humans. For Ilyenkov, no computer can think dialectically; it can solve problems but not sublimate contradictions. Humans can think through the logic of an other, he argues, whereas machines only operate according to their own precoded logic. A truly philosophical question, only resolvable through further study, will always remain uncomputable to a machine.

“The Mystery of the Black Box” is a post-humanist tale featuring all sorts of non-human thinking machines, including a brain on spider legs, a lazy flying saucer, a deaf ear and a brainless set of hands. In their communist gatherings, the machines celebrate the overcoming of the human. They worship the Black Box, an advanced thinking machine that appears capable of resolving any problem. Nobody remembers when or how the Black Box was created; it was always simply there. If the Black Box is given two mutually inconsistent prompts, it produces no output but remains silent. What is the Black Box’s secret? How does it know the truth? At the end, it turns out that the box is empty. It was never able to think from the start, merely producing random outputs. For Ilyenkov, thinking cannot be simulated by machines or grasped by simply measuring brain waves. We think through many organs: our hands, tools, friends. Communism, he concludes his book, “is not a fairy tale about some bright future, but a real movement of modernity” (Ilyenkov 2020, 495). Communism puts an end to any machine worship, discarding old ideals and bringing idols down from heaven to earth.

Cybernetic Quantification as Control

Ilyenkov’s critique implicitly rejects the reductive nature of cybernetics: it subsumes qualitative differences between various layers of reality under one common denominator, abstract form or mathematical function. *On Idols and Ideals* traces the roots of cybernetics back to Karel Čapek’s play *R.U.R.* which features an army of soulless robots staging an uprising against humanity. Maybe not entirely coincidentally, it was the Czechoslovak philosopher Josef Cibulka who centered his own critique of cybernetics around precisely its tendency to quantify and hence control. Yet, despite this similarity with Ilyenkov’s critique, Cibulka’s stance in the debate is the opposite of what one might expect. He begins with almost the same accusation that Stalinist philosophers had directed at cybernetics: the reduction of qualitative differences between

various layers of reality to a common denominator—a general form expressed through mathematical equations and functions. However, his aim is not to reinforce orthodox Marxist positions but rather the reverse: to demonstrate that the Stalinist and cybernetic approaches (to totalities, systems, wholes, etc.) in fact share a common foundation, albeit unwittingly. But what, then, constitutes this shared point of departure?

Cibulka begins his analysis by highlighting the concept of quality as the central issue in the debate. Initially, he aligns himself with Czech cyberneticians such as Jiří Zeman and Juraj Bober, who criticized the Marxist-Leninist “qualitativist” approach as outdated—still operating within the confines of a traditional Aristotelian view, in which quality is regarded as an essential property that defines a thing as what it is and distinguishes it clearly from others (Cibulka 1964, 328). Such a perspective risks forcing things—or more broadly, any entities—into prefabricated categories, thereby denying them the possibility of transformation or a change in use. For example, it becomes difficult to conceive how something could undergo continuous changes in its essential properties while still remaining fundamentally the same (as in the case of living organisms), or how it might retain its core qualities while engaging in a very different activity than its original purpose (as with tools or instruments).

A question immediately arises: to what extent can the qualitativist approach actually be attributed to Stalinist Marxism-Leninism, given that the latter—at least rhetorically—claimed adherence to dialectical thinking, which should, in principle, account for precisely such types of change? Cibulka helps to clarify this problem by arguing that the Stalinist perspective is essentially non-dialectical. It understands change either empirically—through the mere comparison of two distinct qualities—or quantitatively, via the so-called law of the transformation of quantity into quality. What is missing entirely, he notes, is an account of the change itself. In the first case, comparison alone cannot explain transformation; in the second, the explanation is merely superficial or illusory, as quantitative accumulation cannot by itself account for more fundamental structural shifts (Cibulka 1964, 332–333).

Cybernetics tries to remedy for these deficiencies by conceptualizing all kinds of objects and relations as *functions* or components within sys-

tems. In this framework, every element of the structure acquires a certain plasticity.¹⁶ They are effectively reduced to variables and the operations that could be performed on them. A function, in this context, presents the assignment of one set of objects to another according to a specific rule; or, in more distinctly cybernetic terms, a function prescribes the method for transforming inputs into outputs. From this point of view we can say that things or objects are, in a certain sense, “dissolved”: defined not by their inherent properties, but solely by the functions they could perform. Having lost their substantial “solidity,” they became, ontologically speaking, pliable matter, ready to assume whatever form (“function”) the system assigned to them (Cibulka 1964, 337).

For Cibulka, such functionalization represents an extreme form of abstraction: not only are qualitative aspects reduced to quantitative ones, but these quantities are further transformed into functions, distancing them even more from their original qualitative determinations (Cibulka 1964, 336–337).¹⁷ Yet this was precisely what cybernetics aimed to accomplish. As noted earlier, one of the core motivations behind the emergence of cybernetics (and systems theory more broadly) was the effort to coordinate “subsystems” characterized by significant qualitative and quantitative heterogeneity. In this context, any abstraction from both qualitative and quantitative specifics (such as energy flows or metabolic exchanges) was not a drawback but a necessary condition for achieving coordination, that is, for effective management and control.

Contradictions or dysfunctions?

It is, however, crucial for Cibulka’s critique that he does not reject the partial validity of cybernetic and systemic approaches—particularly in relation to their effectiveness in management and control but above all in its heuristical sense, i.e. as an initial approximation to reality (Cibulka 1968, 31). What he primarily objects to is the *ontologization* of cybernetic concepts: that is, not only their identification as the most fundamental components of reality, but, perhaps even more importantly, the very mode of this identification (Cibulka 1965, 291). According to Cibulka, cybernetics commits the same fundamental error as Aristotelianism and Stalinist Marxism-Leninism: namely, the abstraction of

16. The term is not Cibulka’s but ours, although the idea of plasticity as a desirable feature (of systems, human beings) was certainly present in the technooptimist and cybernetic vocabulary, at least in Czechoslovakia. See e.g. Richta 2018.

17. Cibulka refers here especially to Klaus 1961.

form from content and the subsequent imposition of this independent form onto an allegedly formless matter. This error, he argues, is evident in the abstraction from qualitative aspects, such as metabolic exchanges, and their reduction to universal denominators—functions, flows of information, feedback loops, etc.—which are supposed to be found in every entity interpreted as a system.

Two major problems arise from this. The first is philosophical: from the standpoint of dialectical thinking, there is no greater error than the *a priori* separation of form from matter, where form is simply applied to content. As is well known from Hegelian dialectics, every form is, to some extent, shaped or “tainted” by its content. For Ilyenkov, too, materialist dialectics does not understand matter as just pliable and then solidified form but is interested in how dialectical change occurs on a qualitative level. For Ilyenkov, matter and form are enmeshed: forms materialize and matter forms. Ignoring this interdependence, Cibulka argues, does not lead to a better understanding or governance of reality—the declared aims of cybernetics and systems theory—but rather to its distortion or (to speak with Hegel) even its destruction. The second problem is historical and political. When such abstraction is applied to society, it tends to obscure—or renders incapable of recognizing—essential distinctions between different socio-economic formations, most crucially the difference between capitalism and socialism. For Cibulka, these deficiencies fundamentally undermine the ontological and epistemological legitimacy of cybernetics, especially when cybernetic and systemic frameworks are used in the attempt to “scientificize” the materialist-dialectical approach.

For Cibulka, however, cybernetic approaches are failing especially in the task which should be paramount for materialist dialectics: to account for the explanation of the genesis of the socio-economic formations. This brings us to the last problematic point. There appear to be two key obstacles that prevent cybernetic and systemic approaches from adequately explaining this issue. The first lies in their focus on the outward functioning of systems, encapsulated in the so-called black box metaphor that we have already encountered in Ilyenkov’s critique of cybernetics. In the black box, the internal workings of a given entity are treated as fundamentally inaccessible to cognitive inquiry. Put differently, the internal dynamics of an entity are considered only in terms of its interactions with the external environment.

Machines, organisms or societies are seen as intelligible only to the extent that their outward behavior can be observed and interpreted as

a set of functions. The core problem with this functionally oriented and externalist perspective is that the source of change is always presumed to lie outside the system. Functions may operate more or less efficiently, but disruptions or transformations are seen as resulting only from external disturbances. This logic is reflected in the central cybernetic concept of information, which, in typically abstract fashion, is defined not by its content but by the amount of noise it absorbs during transmission. Such a negative definition, however, lacks any positive determinations—determinations that, for Cibulka, are absolutely essential for identifying and differentiating specific socio-economic formations.

Here we come to what is perhaps the most fundamental difference Cibulka identifies between the cybernetic and dialectical perspectives: the nature of the entities each takes as its primary object of analysis. In the case of cybernetics, those entities are subsumed under a *system*, while dialectics speaks of *totality*. At this point, it is important to recall how cybernetics originally formulated its core problem: the control and regulation of complex systems, where the central goals are communication and the preservation of stability within an unstable or chaotic environment. Cybernetics thus models its object as a goal-directed entity, continuously interacting with an environment that is seen both as a source of disruption and as an indispensable source of energy. In this framework, the system is compelled to change in order to preserve its stability, however provisional this might be. A permanent equilibrium is unattainable, yet stability remains the system's ultimate aim. All negative elements—noise, disruptions, contradictions—are treated privatively: they are obstacles to be avoided, suppressed or minimized (Cibulka 1964, 333–334).

While cybernetics acknowledges that such negativity is the motor of change, bringing it superficially closer to dialectics, it nonetheless treats this negativity as something external to the system itself. For Cibulka, this poses both an ontological and a political problem. Ontologically, qualitative change cannot ultimately be regarded as an intrinsic part of the system, since it is imposed from the outside; the essence of the system—if we can even speak of an essence here—is proper functioning and the maintenance of order. Politically, the system's perspective is inherently reactionary. Consider social phenomena such as riots, protests, strikes or revolutions: from a cybernetic standpoint, these appear merely as disturbances to be either suppressed (reaction) or pacified (reformism), without necessitating any genuine qualitative transformation of the system.

It can be argued that the very concept of a system remains grounded in a non-dialectical view of human thinking: the system exhibits goal-oriented behavior, and its primary objective is to achieve this goal while maintaining its integrity by controlling ideally all of its functions. From Cibulka's (and more broadly, the dialectical-materialist) perspective, however, socio-historical formations do not function in this way. Or, to put it differently, the central issue is not primarily the operation of social systems or formations, but rather *qualitative change*—the emergence or genesis of something new.

To address this issue, Cibulka advances a theoretical perspective that stands in stark contrast to that of cybernetics and systems theory more broadly. First, he locates the source of change not outside the formation (system or totality) but within it. Only in this way can radical, qualitative change be understood as an essential feature of the formation itself, as something immanent rather than externally imposed. Second, implicit in Cibulka's view is the rejection of models based on goal-oriented behavior. Dialectical totalities, in his account, cannot be defined by the pursuit or maintenance of stability—even if such stability is temporary or purely ideal—but instead by inherent instability. Third, this essential instability arises from an internal dialectical split within the totality, which Cibulka conceives as a *tendency*, that is, a real socio-historical movement governed by laws. Its peculiarity lies in the fact that it simultaneously contains, as an internal moment, phenomena that run counter to the very movement prescribed by those very same laws. As a result, such a tendency is always fractured between a so-called main side and a secondary one, the latter undermining the former.

As a result, disruptions, dysfunctions, anomalies or noise are to be understood primarily as products of the contradictory nature of the totality itself, rather than as results of interactions with other systems or the outside. It is precisely at this point that Cibulka introduces his concept of *quality*. For him, quality does not refer to an empirical feature of a particular thing, but to a concrete contradiction inherent within the entity itself (Cibulka 1968, 282–283; Cibulka 1964, 331).¹⁸ For example, as Cibulka explains, the dialectical theory of feudalism cannot rest

18. It has to be noted that Cibulka himself is not consistent in his terminology, for he sometimes uses the term “quality” in the sense of the so-called main side of the objective tendency and sometimes (in the case of “essential quality”) as a definition of this tendency as such, which is always internally contradictory. For the sake of simplicity we use “quality” in the latter sense of essential quality.

solely on its “pure” feature, that is, on the natural form of the economy and the appropriation of surplus product through non-economic coercion by a feudal lord.¹⁹ It must also encompass the movement that runs counter to smooth functioning of the main (“pure”) feature of the economy—in this case, the transition to the money-form of rent. The dialectical explanation resides precisely in showing (or, more precisely, in deducing) how the tendency toward a transition from rent in kind to its money-form is already implied within this economic form (i.e. feudal type of natural economy) (Cibulka 1968, 81–83).

It is clear that what Cibulka aims to offer here is an account of transformation in the strongest possible sense: change understood as the self-movement of an entity—whether a tendency, system, or structure—something he believes cybernetics is fundamentally unable to explain (Cibulka 1968, 25). In other words, transformation as self-movement can only be described dialectically, not systemically, since only dialectics can adequately reflect upon and rationally account for the internally split structure of any entity. Yet—and this is where Cibulka’s lack of elaboration may lead to confusion—this notion of “quality” still does not, paradoxically, determine the concreteness of any given entity. As an essential determination of tendency, it remains formally indistinct from the cybernetic system’s own *mode* of determination through interaction with its environment or through functional operation.

The reason is, that while determination through contradiction may account for the possibility of qualitative change, it still does not provide an adequate explanation for the concretization of a particular entity. Without such an account, we would be unable to identify the entity undergoing change; or, more precisely, to distinguish its initial, intermediary and final states. Put differently, determination through contradiction should avoid both empirical determination (based on observable states or facts about entities) and purely formal determination (based on functional abstraction). If this is a valid position, then contradiction cannot be treated as an inherent property or feature of an entity—and certainly not as an empirical quality. It cannot be ontologized, at least not in the traditional, uncritical sense (in the Kantian sense of “dogmatic” metaphysics). Rather, contradiction must be deduced, not in an axiomatic-mathematical fashion, but dialectically, through the observation of the entity’s movement in its practical activity (at least in the case of society).

19. Cibulka draws here on Robert Kalivoda’s account of the transition from the feudal to the capitalist mode of production.

As we have already suggested, this is precisely the kind of explanation that Cibulka fails to provide; instead, he frequently lapses into forms of ontologization, as in statements such as “Every objective tendency *is* contradictory.”²⁰ At this point, one can hardly avoid the impression that he falls into the very same mistake he seeks to expose in cybernetics: unjustified ontologization; for it is not enough merely to substitute contradiction for function. Rather, contradiction must first be encountered—indeed, experienced—in the form of dysfunction, tension, disruption, or failure; only then can it be reflexively situated within reality as a structuring moment of the concrete totality. This possible critique does not necessarily invalidate Cibulka’s dialectical perspective and its criticism of cybernetics; rather, it points to the danger of fetishizing theory, a risk that arises whenever generalizations are detached from their concrete historical or social context. In this sense, the same reservation that Cibulka directed at cybernetics can also be applied to his own theory of objective tendencies: it may serve as a valuable heuristic tool, but not as an ontological claim.

Socialist Systems Theory

Cibulka’s critique of cybernetics deserves serious attention, as it sharply delineates the differences between dialectical-materialist and cybernetic-systemic approaches. In doing so, he exposes significant shortcomings in systemic thinking, which, in his view, is unable to grasp reality at higher levels of complexity—precisely what cybernetics claims to achieve. Complexity, he argues, cannot be attained through reduction to the highest level of abstraction, through a formalization that seeks a common dimension across different layers of reality or systems, regardless of their qualitative distinctions. Yet, as Cibulka’s anti-empiricist stance suggests, it also cannot be reached merely by acknowledging the richness of empirical reality. Instead, it requires an account of reality as qualitatively evolving. In short, it calls for a genetic explanation, not merely a factual or functional one.

Cybernetic and systems approaches ultimately fall short of providing such an explanation, as they focus primarily on what might be called “negative” change: the kind of change a system must undergo in order to maintain its stability within a highly unstable environment. Herein lies the very heart of Cibulka’s accusation of formalism. In cybernetic terms, the sources of variety—noise, anomalies, disruptions—are located in the environment, while the existence of this variety is taken as

20. Italics ours.

a given. The system is then presented essentially as a form that admits into itself only as much variety as it can control; reducing variety becomes then a necessary condition for the system's survival (Cibulka 1964, 333–334). Cibulka, in turn, argues that a dialectical-materialist approach should proceed exactly the other way around: it must explain variety through the movement of the system itself—through its internal development, or what Cibulka refers to as its objective tendency. To put it differently, anomalies and deviations must be understood as processes of anomalization rather than random facts, even when they exhibit a certain probability of occurrence—and, as such, as rational entities that the theory must account for (Cibulka 1967, 299). Cibulka illustrates this point with the example of the second serfdom, which re-emerged in Central and Eastern Europe during the 17th century. From the standpoint of cybernetics, focused on structural similarity, this phenomenon would be interpreted as a mere reappearance of earlier feudal forms, still constituting an essential component of feudalism. By contrast, the dialectical perspective understands it as re-integrated into the emerging capitalist system, functioning as an element of commodity production.

As both Cibulka and Ilyenkov insist throughout their writings on cybernetics, systemic reason cannot cope with the totality of the system itself, its inner modulations, but can only strive to preserve its stability by moderating subsystems—reminiscent of Lem's two engineers and their "statistical draconics," which measures dragons according to their quantitative coordinates without ever capturing their qualities. Despite his sharp critique, Cibulka recognizes the significance of systems theory, which distinguishes his position from the Stalinist denunciation of cybernetics. However, he assigns it a heuristic rather than epistemic (let alone ontological) value. Structural similarities and functional homologies represent only an initial step in explaining reality, by no means the final one. They serve as preliminary approximations that must be further concretized and differentiated in relation to the role they play within the developmental trajectory of each specific entity.

Conclusion

Cibulka's and Ilyenkov's critical interventions can be read as symptomatic of a broader fissure within the ideological landscape of the so-called Eastern Bloc. While not entirely dissimilar to the debate between humanists and techno-optimists—with its familiar oppositions of art and science, human and machine—the division at stake here was articulated less in terms of domains than of modes of thinking: systemic or cybernetic on the one hand, dialectical on the other. Ilyenkov focused on

the distinction between mere problem-solving and truly dialectical resolution, emphasizing the irreducibly embodied character of thinking. Machines, he insists, can never attain dialectical reason. Cibulka, by contrast, directed his critique at the ultimately conservative character of systemic thinking, which proves incapable of accounting for qualitative and revolutionary transformations and instead confines itself to adaptation to, or even the elimination of, disruptions and dysfunctions.

The stakes for both thinkers, however, were considerably higher. Their critique was not merely about differing assessments of the possibilities and limits of cybernetics, but about the very foundations of rationality that ought to underpin new forms of socialism emerging from the wake of Stalinism's collapse. Cybernetics and systemic thinking prided themselves on offering an approach that, in contrast to the purportedly chaotic directivism of Stalinism, could finally place socialism on a firm scientific footing. Dialecticians such as Ilyenkov and Cibulka were not opposed to science or rationality as such (and in this respect they diverged from many humanist critiques); rather, they argued that systemic thinking was limited in scope: adequate only to the domains of automata and computers, but incapable of grasping the qualitative complexity and dynamism of reality. Precisely here, they contended, systemic reason failed on its own terms: it could not adequately account for the very processes it sought to master, above all in their human and social dimensions. The new form of rationality they sought to articulate was instead grounded in the irreducibility of contradiction: something that human activity cannot eliminate or circumvent but must instead engage affirmatively—as a moment this activity has to “pass through,” transforming itself in the process, even radically, if necessary.

It is true that Ilyenkov and Cibulka approached systems thinking and cybernetics from markedly different critical perspectives. Ilyenkov began from the premise that human thought is necessarily embodied and social—qualities that machines and automata can never attain. Cibulka, by contrast, emphasised the inherently contradictory character of social reality, a dimension that systems theory and cybernetic approaches are fundamentally incapable of grasping. Despite these differences it seems to us that both thinkers identified a common problem in systems theory and cybernetics: their inability—indeed, their inherent incapacity—to grasp contradiction as a constitutive feature of human social reality, one whose resolution requires a revolutionary transformation of society. In this conception, thinking is itself a mode of trans-

formation rather than a process of learning from mistakes, self-regulation, or adapting a system to the stochastic behaviour of its environment. On the other hand, neither Ilyenkov nor Cibulka denied the usefulness of systems theory and cybernetics. Both instead confined their legitimacy to a limited sphere: for Ilyenkov, to the operation of machines and automata; for Cibulka, to their heuristic function. In both cases, systems theory and cybernetics were to remain subordinate to the dialectical logic of human—that is, social—thought and interaction. The main reason for this lay, however, in the different approaches to reality within which the two modes of thinking were supposed to operate. While for cybernetics and systems theory the key task was the control and management of an entity—a society, enterprise or automata—within an unstable environment, where instability appeared as a condition requiring regulation, for dialectics the task was to work through the differentiations and ramifications of unstable—that is, contradictory—reality itself, creatively unfolding its movement and development.

It is noteworthy that, in this respect, both remained firmly committed to a rationalist and, more precisely, anti-empiricist orientation. Yet they resisted any rigid dichotomy between the rational and the empirical, or between the conceptual (the general) and the individual. The decisive distinction structuring their thought ran instead along the axis of the abstract and the concrete: the former as a necessary point of departure that must lead to the latter, rather than the other way around. In this sense, their critiques diverge from several Western Marxist rearticulations of rationality, particularly within Critical Theory, which also criticized systemic thinking but tend to proceed either from an opposition between the general concept and empirical individuality (Adorno),²¹ or from a dualism between distinct forms of rationality, such as instrumental and communicative (Habermas). For the “Eastern” dialecticians, there was just one rationality: dialectical reason that seeks to totalise

21. We are well aware that Adorno himself would reject any formulation that places individuality and the concept in such stark opposition. It is also true that, despite privileging the former, he insists on the indispensability of concepts. Yet this raises a fundamental question: how can individuality be thought if, from the very outset of *Negative Dialectics*, thinking is defined as a process of identification and totalisation that necessarily excludes the individual? From the perspective developed here, Adorno ultimately remains trapped within an undialectical conception of thought. Despite his critique of identity thinking, he continues, unwittingly, to treat thinking primarily as an epistemological problem governed by the logical categories, rather than as a socially mediated, dialectical process in which concepts emerge from and participate in the transformation of reality itself.

all segments of reality—whether logical, empirical, moral or emotive. Dialectical reason does not aim to dominate or subsume them all under one principle, but to salvage every single aspect of reality while simultaneously reconnecting them, so that none appears as an isolated fragment.

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Revisiting Harvey's Anti-Value: A Critical Review of International and Brazilian Literature

Kamir F. Gemal

ABSTRACT: This article examines the notion of anti-value in David Harvey's work, highlighting its relevance for the critique of contemporary political economy and the conceptual gaps that accompany its formulation. Through a theoretical review grounded in Marxist value theory, we analyse how Harvey reworks central categories—particularly devaluation, crisis, and the contradictory movement of capital—while pointing to the limits of his approach, especially the lack of systematic articulation with Marx's own negative categories. To address these gaps, we draw on subsequent international and Brazilian literature that has mobilized, adapted, or problematized the concept of anti-value, showing how these interpretations often reproduce, accentuate, or attempt to resolve Harvey's ambiguities. By mapping convergences and divergences in this body of work, we demonstrate that anti-value can serve as an important analytical tool for understanding the dynamics of crisis and capital reproduction. Ultimately, we argue that anti-value, as an expression of capital's intrinsic contradictions, should be understood as an immanent determination of value itself: the expression of the ever-present possibility that value may fail to be realized or may be forcibly devalued—the horizon of potential devaluation that accompanies every process of valorization. This, in turn, can illuminate multiple fronts of potential devaluation and strengthen the theoretical foundations of contemporary critiques of capitalism.

KEYWORDS: Anti-value; Crisis; Marxism; Devaluation; Harvey; Value Theory.

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1. Introduction: the theoretical problem in the further development of Value Theory

New categories have been proposed in recent years to expand the critique of Marxist thought. This reflects the movement of theory itself in the face of the ongoing transformations of the capitalist mode of production and of the foundations of social reproduction. It is within this context that David Harvey (2017) introduces his notion of *anti-value*, which serves as the point of departure for the present discussion.

More precisely, our starting point is a sense of unease with certain gaps in his formulation that warrant closer scrutiny—an unease that aligns with Green’s (2018) own assessment, as he notes that, given the way the concept is put forward,¹ he is “reluctant to endorse [Harvey’s] category of anti-value.”

These difficulties arise from blurred boundaries between this new theoretical category and others already present in Marx’s work, which are seldom explored in detail. A full examination of each category lies beyond the scope of this article, as such an undertaking would require extensive analysis. However, it is worth briefly noting that there is an important distinction between Harvey’s *anti-value* and Marx’s notion of *non-value* [Nicht-Wert]—which Harvey fails to maintain.²

A similar issue appears with the prefixing of *value* by *anti-* [*Gegen*], which also appears in Marx but was lost in most translations.³ This ambiguity is further reproduced in some of the most cited literature on anti-

1. Green states that “By the end of the chapter the category of anti-value has become so copious and slippery that it is unlikely to be widely adopted in the way that Harvey’s equally compendious but rather better focused category of *accumulation by dispossession* has been.”

2. For instance, Harvey at times relies on passages from Marx that clearly refer to *non-values* (or not-values) in order to substantiate his own use of *anti-value* (2017, 73) and reinforces his confusion while arguing against those that do not account properly for things *without value* in capital’s circulation—those that, supposedly, fail “to understand the dialectical role of not- or anti-value” (ibid., 90). Also, in later works, he again places the two terms side by side, without distinction, when commenting issues that “introduce[e] the idea of ‘not-value’ or ‘anti-value’ into the discussion” (2018a), and once more when he reiterates his “interest in the relation between value and not-value or anti-value” (2018). Nowhere, however, does he offer any attempt at disentangling the two.

3. In the English translations of the *Grundrisse*, the term in question appears as *counter-value*. The distinction between *anti-value* and *counter-value* is only made possible by a linguistic history that absorbed both Latin-derived prefixes (*counter-*) and Greek-derived ones (*anti-*), whose meanings are often similar. German, however, lacks this hybrid structure. In Marx’s original text, this idea is rendered simply as *Gegenwert*, referring to the mass of value embodied in various commodities that must exist to make

value. For example, Fuchs (2018) draws on the original German terminology to argue for parallels that, on closer examination, are difficult to sustain within either Harvey's or Marx's frameworks.

This theoretical and methodological looseness also appears in the wider range of ways in which the notion of anti-value has been used in the literature. These uses are often inconsistent with one another because they do not share a common point of departure. This article might also be, admittedly, one more contribution to that already scattered field. Still, it is important to try and re-establish the level of rigor required when revisiting accepted ideas or advancing new ones, particularly when dealing with conceptual categories associated with prominent authors such as Harvey, who occupies an especially influential position in Brazilian scholarship.

Our contribution follows the discussion by Pereira *et al.* (2025) regarding the notion of anti-value as developed by Harvey, which is our focus, and by Francisco de Oliveira ([1972] 2003; 1988), whose use of the term carries fundamentally different meanings. Our aim is to return to Harvey's formulation, examine how it has been taken up in the literature, and outline a more consistent and coherent basis for its use within the broader theoretical framework of Marxism.

In this sense, this study advances a specific theoretical claim. Rather than treating anti-value as an external force acting upon capital, we argue that it should be understood as an immanent determination of value itself: the expression of the ever-present possibility that value may fail to be realized or may be forcibly devalued. Anti-value therefore names the negative moment internal to the reproduction of capital—the horizon of potential devaluation that accompanies every process of valorization. By clarifying this conceptual status, this article seeks to situate Harvey's proposal more firmly within the broader framework of Marx's critique of political economy.

By reconstructing the concept of anti-value through a critical engagement with both international and Brazilian scholarship, this article contributes to ongoing debates within Marxist value theory concerning crisis, devaluation, and the contradictory dynamics of capital reproduction. More specifically, it shows how clarifying the relationship between anti-value and Marx's own negative categories—such as non-value, devalu-

possible the exchange of equivalent quantities of socially necessary labor-time. That is, value conceived in terms of equivalence.

ation, and the destruction of capital—can strengthen the analytical precision of the concept while preserving its capacity to illuminate the unstable and crisis-prone nature of capitalist accumulation.

This does not suggest that all tensions surrounding the concept can or should be eliminated. Theoretical ideas are contested terrains, always open to reinterpretation. Though, precisely for that reason, some degree of conceptual clarification is necessary. Without this, we risk generating more theoretical problems than we can resolve.

The text is divided into two sections, each corresponding to one contribution. First, it reconstructs Harvey's concept of anti-value and the debates it has generated. We begin by revisiting his presentation of *anti-value* in relation to Value Theory, outlining not only the category he proposes and the theoretical problem it is meant to address, but also the new problem that arises from the way he formulates it. The second part proposes a systematic interpretation of anti-value as an immanent determination of value. It examines how the notion has been taken up in subsequent literature and advances our proposal for reconciling the terms of Harvey's formulation. This is done by preserving the core elements he identifies within his proposals while rearranging certain arguments so that, together, they form a more coherent and robust conceptual framework.

2. Harvey's anti-value

One could argue that Marx not only anticipated but fully incorporated into his analysis the confrontation between what constitutes *value* and what *does not*, or between what is *capital* and what is *not*. This tension is central to his work, and much of its conceptual grounding can be found in the *Grundrisse* ([1857-58] 1973). As Harvey notes (2017, 72), "It would be very unlike Marx to formulate a key concept such as value without incorporating within it the possibility for its negation." This point holds for the various forms that such negation can take.

Alongside that which has *value*,⁴ Marx also addresses things *without value*, *non-values* (arising from *non-capitals* and forms of labour that are *not objectified*),⁵ and even *counter-values*. As noted previously, each

4. We will return to this notion later, as it is essential to the argument. We will not, however, engage with debates such as the one between Michael Roberts (2018) and Harvey (2018) himself—important though it may be.

5. By *objectification* we mean the incorporation of labor into objects. This is the sense found in Marx ([1867] 1982, 287): "Labour has become bound up in its object: labour has been objectified, the object has been worked on".

of these terms warrants its own detailed analysis, which exceeds the scope of this article and remains open for future work. What matters for the present purposes is that *negation* and *contradiction* are foundational elements of the Marxian method of analysis and exposition. After all, they are the forces that drive both history and thought. It is within this terrain that Harvey's proposal of *anti-value* situates itself.

2.1 The underlying premise

In *Marx, Capital and the Madness of Economic Reason* (2017). Harvey introduces *anti-value* in a dedicated chapter, "Anti-Value: The Theory of Devaluation" (ibid., 72–93). The concept arises from the fundamental premise "the circulation of capital is vulnerable, that it can come to an abrupt halt; that the threat of devaluation, of loss of value, always hovers over it as it circulates" (ibid., 72). This develops Marx's ([1894] 1981, 358) well-known proposition regarding the contradictions inherent to this mode of production: "The true barrier to capitalist production is capital itself."⁶

Harvey (1981; 1982; 2014) has already examined this terrain extensively, at times focusing on the internal limits of accumulation (such as crises of overaccumulation triggered by the exhaustion of outlets capable of absorbing hoarded capital into new cycles of reproduction), and at other times addressing the broader array of forces and contradictions, both internal and external to capital, that hold the potential to negate

6. We will return to this point later in the text. For now, however, it is worth highlighting a passage from Marx ([1857–58] 1973, 347, emphasis added) that offers a different, yet still illustrative, expression of these ideas:

To begin with: capital forces the workers beyond necessary labour to surplus labour. Only in this way does it realize itself, and create surplus value. But on the other hand, *it posits necessary labour only to the extent and in so far as it is surplus labour and the latter is realizable as surplus value.*

In other words, capital commits resources to valorization only when it is viable to appropriate a surplus. Marx continues:

It posits surplus labour, then, as the condition of the necessary, and surplus value as the limit of objectified labour, of value as such. As soon as it cannot posit value, it does not posit necessary labour; and, given its foundation, it cannot be otherwise. It therefore restricts labour and the creation of value—by an artificial check [...]—and it does so on the same grounds as and to the same extent that it posits surplus labour and surplus value. By its nature, therefore, it posits a barrier to labour and value-creation, in contradiction to its tendency to expand them boundlessly. And in as much as it both posits a barrier specific to itself, and on the other side equally drives over and beyond every barrier, it is the living contradiction.

it through other multiple forms of crisis. These crises are undeniably dangerous, yet often partially beneficial for certain fractions of capital, if they remain contained.

These limits and contradictions seem to orient Harvey's methodological approach to *anti-value*, which he treats as a specific, contradictory, and ambivalent property of capital itself. Harvey (2017) is therefore not describing something external to capital, nor the exclusion or suspension of value and its determinations. As he understands it, "In Marx's world [anti-value] is not an unfortunate accident, the result of a miscalculation, but *a deep and abiding feature of what capital is*" (ibid., 80, emphasis added). Going further in his interpretations, Harvey states that "Value in Marx exists only in relation to anti-value" (ibid.). The reverse is equally true for him.

Thus, Marx's value is not nullified by Harvey's anti-value theory. Rather, they overlap and are complementary as components of the fundamental and contradictory processes that structure capital. They are not mutually exclusive designations (as *value* and *non-value* are, we argue). As a synthetic concept, anti-value aspires to function as a theoretical tool capable of capturing the contradictory elements and forces that operate within circuits of value—that is, within the expanded reproduction of capital. If anti-value emerges to highlight potential interruptions in the movement of value (which are nonetheless central to capital's reproduction), then let us begin by revisiting more foundational elements without which this analysis cannot advance.

2.2. Value, capital, and the threat to accumulation

For Marx ([1867] 1982, 125–177, Chapter I), value is the *socially necessary human labour-time required to produce a given good under the prevailing conditions of production* (at a particular place and time). In other words, the value of a shoe does not depend on how long *this* or *that* individual takes to make it. What matters is the average amount of labour-time necessary to do so—and only towards production of goods that satisfy a social need, that are socially useful. Value is an immaterial economic property that expresses the relational nature of social labour under dominant relations of production. It is through this abstract (though very real) measure that equivalence is established among products of human labour, thus making exchange possible.

Capitalist exchange is not just any form of exchange. It has a specific meaning that is quite distinguishing. Commerce, after all, is not unique to capitalism, as many other societies have incorporated trade as part—

or even as the basis—of their reproduction. What is specific to capital is that exchange, *as the end (and restarting) point of a process aimed at capturing surpluses*, becomes the organizing principle of social production. As such, all that is produced is done so for that objective. Under capitalism, exchange marks both the conclusion and renewal of a process of unequal private accumulation that is intrinsic to the system.

Once exchange occurs, the capitalist receives the sum of money equivalent (in principle) to the value of the commodity produced. But this amount does not simply reimburse the cost of producing and bringing the good to market. It must be greater than what they had previously invested. It must include profit (the commonplace notion that obscures the social relations at stake). The increase in value over the capital initially advanced derives from labour that was not paid to the worker. This is *surplus value*, which is not something added on top of the commodity's value but is a component of it. It appears as surplus labour only because it exceeds what was paid to the worker as necessary to cover the immediate costs of their reproduction.

This newly created portion of value (the surplus) results from the mobilization of unpaid living human labour. It is added, in monetary form, to the initial advance of capital, which is now reproduced and expanded once the commodity is sold. In this sense, the creation of surplus value in the sphere of production is nothing more than a metonym for the appropriation of unpaid labour: labour whose value is ultimately recovered on the market by the capitalist, who has already underpaid the workers and can now claim it freely, without contest from those whose work previously produced it.

This is how capital constitutes itself through a set of relations that extend across the social fabric and make accumulation possible, sustaining the cyclical continuity of the process through which value moves and is converted. Money purchases means of production⁷ and sets labour in motion (labour compensated at less than what it produces). The value crystallized takes the form of commodities, which, upon sale, are reconverted into money in the hands of the capitalist.

This specificity distinguishes the *simple circulation of value*—"selling in order to buy" (ibid., 200), a process aimed merely at satisfying individual or social needs through access to different use-values—from the *capitalist circulation of value*, which is by contrast "an end in itself"

7. Machinery, inputs, land, etc.

(ibid., 228). Capital circulates by transforming itself into different economic forms of value (money, means of production, commodities, and money again) solely to return to circulation. It has a single purpose: the self-expansion of value, through which capital continually returns to its owners in an enlarged, valorised form.

If Harvey derives from Marx the idea that capital is *value in motion* for the sake of its own reproduction, then attention turns to whatever threatens this movement, whose endpoint is accumulation. These are the elements or forces that might interrupt, block, or slow it down. But not every obstacle is relevant in the specific sense Harvey proposes. Anti-value does not threaten capital as a mere barrier.

Harvey is specifically interested in elements or forces that not only have the potential to trigger successive crises but are also essential to capital's reproduction. Precisely for that reason, they are both dangerous and analytically significant: for they represent the delicate balance, the ongoing recalibration between capital's drive toward expansion and the need to avoid its implosion through the overuse of elements that are indispensable to its very existence.

This specific *potential for devaluation* (opposite to *potential for valorisation* toward which capital is oriented) that defines anti-value. It represents the possibility that the capital advanced will fail to be valorised—a non-realization of value in motion—and thus may appear in various moments or components of the circulation process. For this reason, Harvey (2017, 93, emphasis added) maintains that “*Anti-value signals the potential for breakdown in the continuity of capital circulation.*” And, as a conceptual umbrella for these scenarios, “It prefigures how capital's crisis tendencies can take different forms and move around from one moment (e.g., production) to another (e.g., realisation)” (ibid.).

2.3. Forms of anti-value in Harvey

This broader sense of anti-value adopted here does indeed derive from Harvey's own exposition. Yet in his presentation it does not appear with the same clarity. On the contrary, and perhaps because this is not his focus, the concept ends up taking on a somewhat narrower meaning. Instead of showing how anti-value might emerge across the various forms of value and the many circuits that structure capitalist reproduction—as barriers to accumulation or threats of devaluation—Harvey restricts his analysis to a narrow set of cases and leaves their connection to capital's core theoretical categories largely undeveloped.

In *The Madness of Economic Reason*, anti-value is approached through the “debt economy” (ibid., 78), the “dead weight of unproductive labour” (ibid., 87), and the “direct politics of anti-value” pursued through the “the political quest for an unalienated existence” (ibid., 94). However, the author privileges (both in this chapter and throughout the book) debt and the contradictions it introduces into capital’s reproduction. Of the 50 references to anti-value in its dedicated chapter, 19 refer explicitly to debt or are linked to interest-bearing capital.

Beyond these, in the rest of the book, 17 further mentions appear, and all (with a single exception) also refer to this same form—debt. This is not a problem in itself; it simply reflects the analytical weight that Harvey gives to finance. This emphasis is justified: credit (and debt) has long been central to capital’s development and to the displacement or temporary resolution of its crises. This is evident in Marx and becomes even clearer as interest-bearing capital evolves into financial capital, gradually asserting its hegemony over the organization of production and the circulation of social wealth.

We agree with Leda Paulani’s assessment of the importance of this aspect of Harvey’s work, as she notes in the preface to the Brazilian-Portuguese edition of *The Limits to Capital* ([1982] 2013, 2). For Paulani, Harvey’s sustained engagement (almost premonitory) with interest-bearing capital already pointed to the “imperative process that would turn the globe into an open field for the circulation of financial capital,” even “before the financialization of almost everything became the norm.” It is therefore unsurprising that Harvey places this dimension at the centre of his discussion of anti-value, especially given the vantage point from which he perceives the capitalist world.

Returning to Harvey, after the first section (the *debt economy*), the chapter turns to two other dimensions: (i) unproductive labour which, though necessary, can overburden economies by absorbing excessive portions of social labour; and (ii) organized workers’ movements resisting the existence or intensification of mechanisms of exploitation, expropriation, and dispossession. Both unproductive labour and such means of exploitation are fundamental to the expanded reproduction of capital and yet simultaneously threaten it (through slowdown, stagnation, or outright breakdown).

Taken together, however, they highlight a methodological problem: the parts stand out in isolation, contradictions are treated singly, and the totality of value circulation—that was so prominent in the three chapters preceding the one on anti-value—recedes from view. Each of

the phenomena Harvey identifies is only one manifestation of anti-value in the form of labour, just as the *debt economy* is only one of its expressions in value's money-commodity form.

There is no direct mention of anti-value in reference to the fundamental economic forms through which value is expressed. This is risky, because it limits subsequent attempts to articulate anti-value beyond the narrow set of cases Harvey discusses. His simplification (an empiricist pragmatism, though not a reductive one) comes at a significant cost for readers: it sidelines a universe of possible theoretical mediations. Consequently, other channels through which anti-value can emerge—in the form of money, commodities, labour, or money-commodity (debt)—fall out of view, and the totality of capitalist social reproduction remains only partially reconstructed.

Consider, for instance, the many references Harvey himself makes to the potential devaluation of money when it is excessively hoarded, held still. Certainly, prior hoarding is indispensable as a necessary accumulation of capital for future investment, yet when larger masses of resources are frozen and removed from circulation, they obstruct accumulation. In this sense, Harvey briefly presents anti-value in the form of capital withheld, potentially devalued, and only returned to circulation through the credit system (his central object of analysis), which, in time, turns into another source of anti-value through its own overextension. Anti-value thus appears as a particularly dangerous property or tendency because it arises from processes and elements that simultaneously enable the reproduction and valorisation of capital.

This is evident in another example: the 2008 real estate crisis that spread across the globe. This political-economic moment became a key reference in Harvey's recent work. The crisis unfolded precisely through the excessive and unregulated expansion of debt and credit (interest-bearing capital) without needed safeguards. This is a danger intrinsic to an instrument that exists to promote the circulation of value. On the one hand, credit channels the savings of firms, households, and institutions (including the state) back into production; on the other hand, it greatly reduces the need for previously accumulated capital to initiate investment. However, in doing so, it compromises future income, which is uncertain. This uncertainty and potential devaluation are ways in which anti-value appears in the form of debt.

A similar dynamic occurs when minimum living standards fall due to declining wages. That is, through the devaluation of labour-power, as the average cost of its reproduction drops under prevailing production

conditions. Here too, the contradiction is clear: while higher rates of exploitation and the appropriation of unpaid labour may rise, the threat to capital itself increases. Such pressure may depress overall labour productivity or fuel widespread dissatisfaction and revolt. This is anti-value in the form of labour.

Other examples could easily be given to illustrate anti-value across different determinations of capital. The point, however, is that Harvey's exposition does not lead us directly to a theoretical articulation across the fundamental forms of value and beyond, but rather proceeds from them and moves toward that which *might not be* capital (and, yet, is integrated into its circulation). This, we suggest, is a necessary adjustment if we are to incorporate these negatives coherently into Value Theory: not only anti-value, but also non-value and things without value, as discussed in an earlier work (Pereira, Nakama, Gemal, Cunha, & Cevallos Serrano, 2025).

Otherwise, the dialectical—and therefore contradictory—character of these categories is not captured. In short, the specific examples Harvey discusses end up obscuring the distinct determinations of the different forms of capital in which anti-value can appear. This may well be one of the sources of the theoretical problems that have emerged both in the various interpretations of anti-value found in the literature and in Harvey's own work (for instance, as is the slippage between what constitutes anti-value and what constitutes non-values).

2.4. Inconsistencies in the literature

Of course, every conceptual definition carries a certain degree of arbitrariness, whether in the choice of the object it describes, the premises from which it begins, or the nature of the phenomenon under analysis. Those who formulate such ideas do have a degree of choice, but they easily gain a life of their own once taken up by others, evolving in the hands of those who deploy it in their debates.

Even so, some inconsistencies are already present in Harvey's (2017) initial formulation. In one instance, for example, when discussing how Marx approached threats of potential devaluation within the circulation of capital, Harvey describes anti-value as "a permanently disruptive force in the very gut of capital circulation itself" (ibid., 74). Then, on many other occasions, this supposed force is then reversely identified as the very object in which it appears. It is, surely, this repeated subjectification of anti-value that enables an autonomisation from value. Sev-

eral instances are highlighted on the footnote⁸— they are not (all) inconsistent with one another, except when Harvey seems to treat his notion as a synonym for categories such as debt or fictitious capital.

His writing does not clarify the nature of anti-value itself. The objects he associates with it appear only obliquely, without the conceptual precision he afforded to his reading of Marx's value at the beginning of the book—as he writes: “Marx defines value as socially necessary labour time” (ibid., 5). And one should not ignore the importance of such clarity, for it is only on the basis of this explicit foundation laid out in the opening of the first volume of *Capital* that Marx can then develop the various economic forms through which value is expressed, and the terms under which it coordinates social production. This is, after all, how *Value Theory* is assembled.

And this may well be the difficulty: anti-value is, as Harvey proposes, a synthetic concept of a *Theory of Devaluation* that was never actually systematically presented, even though the dynamics of devaluation recur throughout his oeuvre—from *The Limits to Capital* (1982) to the more recent *Madness of Economic Reason* (2017).

Even so, Harvey repeatedly places *value* and *anti-value* in opposition and on equal footing, as paired poles of a single analytical unity. But his anti-value is *not* the absence (the *non-objectification*) of labour, nor the

8. The term appears (i) in money which, when circulating “as interest-bearing capital it functions as the anti-value” (ibid., 105); (ii) as something that emerges within the “flourishing sphere of antivalue creation within the credit system” (ibid., 124); or (iii) in the “debt-bottling plants [...] that produce anti-value” (ibid., 156). It also appears as something endowed with power, as in (iv) “[m]erchants and industrialists borrow even in the face of the potent power of anti-value that may destroy them at some future date” (ibid., 177), or in Harvey's take on Chinese debt, which (v) “unleashed the power of anti-value to force value production upwards to absorb as much surplus labour as possible” (ibid., 183). Then, like capital or value, it's stated that anti-value can also move and take shape in different forms, as in (vi) the flow of rents generated by New York's sea of buildings to service loans, “in the form of debt servicing (anti-value)” (ibid., 143); (vii) as “fictitious capital (anti-value) generated within the credit system” (ibid., 176–177); (viii) in “flows of credit moneys, of that form of antivalue which capital itself creates” (ibid., 176); (ix) in the “conversion operation [...] from money into anti-value” through the “state finance nexus” (ibid., 203); and (x) when treated almost as a quality or property of value-forms, as when Harvey writes that “anti-value of debt becomes one of the principal incentives and levers to ensure the further production of value and surplus value” (ibid., 80). Finally, and more broadly—at first glance not tied to specific forms of capital or value—the term appears as (xi) the “anti-value that arises from technical glitches and holdups in the circulation of capital morphs into the active anti-value of political resistance to commodification and privatization” (ibid., 76); that is, as an “active field of anti-capitalist struggle” (ibid.), which nonetheless also manifests in the working class in the “refusal to work [as] anti-value personified” (ibid., 77).

non-mediation (non-equivalence) of labour—both as supposed direct opposites to value itself. It is merely the threat of its devaluation, or of the devaluation of the capital advanced for its creation. Anti-value is *contained* within value.

This threat is within the very premises of its existence. Should we not then require clearer explaining on the nature of negation at stake—absence, opposition, or non-mediation? And, moreover, a clearer account of the *dialectical* nature of such negation? And what of the supposed autonomy between value and anti-value, which seems to fade into the background in some interpretations that follow Harvey's proposal?

Distancing from the absence or non-mediation of value—negatives that do not fit our framework—it seems to us that anti-value is, above all, an ambivalent and contradictory property of value that imposes a degree of opposition to its circulation—and yet, one that arises from the forms through which socially necessary labour time is mobilized and unequally distributed. If we accept Harvey's original formulation that value exists only in relation to anti-value (*ibid.*, 73), we do so only because we take anti-value to be a potential threat of devaluation that is internal to value: an intrinsic contradiction, but one that is only a part of value and not its equivalent.

The consequence of leaving anti-value ill-defined is that it enables weaker articulation with other key Marxist concepts—most importantly value (already heavily contested) and, even more so, *non-value*, which Harvey also uses interchangeably, even though he overwhelmingly prefers his own term, anti-value. Unsurprisingly, much of the literature that draws on anti-value simply reproduces a simulacrum of the initial proposal without refining it or attempting to establish its theoretical status as a concept. This matter is even more explicit in Zupančič (2019, 104) *melange* that parallels Harvey's *non-value* and *anti-value* (as if the same) to Lacan's *jouissance*, to simple enjoyment, where no economic interest is at stake (and, therefore, no value).

3. Sketching a synthesis

The notion of anti-value, as we have shown throughout this study, is a broad and dynamic concept. However, it has still got a wide margin for contestation within Marxist political economy. Our first aim here is to synthesize the elements discussed through Harvey by revisiting the ways in which they have been taken up in the literature, with particular attention to their theoretical, methodological, and epistemological implications. We then offer an integrated view of these contributions, read

together, confronted, highlighting the contradictions, openings, and possibilities that emerge from the debate on anti-value and its role in the reproduction of capital.

3.1. A literature review of anti-value

This inconsistency is not unique to Harvey's formulation. More than a decade earlier, Dinerstein and Neary (2002) had already proposed a similar opposition that entailed related problems: if capital is value-in-motion, then an anti-capital would have to be, in effect, the product of an anti-value-in-motion. Their piece is brief, however, and its main point is to criticize those critics of capital who do not actually position themselves against capital—e.g. social movements that put forward specific demands but do not elevate them to structural questions, that do not situate them within the exploitation of labour under capital, which underpins so many other forms of violence through relations of domination and social control.

In this regard, their intervention was indeed sharp, since they placed the antagonism to capital squarely in the antithesis of value-in-motion. Yet they mention the term only four times (despite its presence in the title) and fall into the same difficulty found in Harvey. What, exactly, constitutes the nature, the movement, and the conceptual status of this anti-value? Who enacts it, and through which mechanisms?

To address these gaps, we now turn to other works—many within Brazilian scholarship, where Harvey's influence is particularly strong—that have mobilized the concept of anti-value, highlighting the consequences of similar omissions. Several contributions are not considered here: those that merely cite Harvey's notion without engaging it; those whose use of the concept is too cursory to reveal substantive inconsistencies; and the few that, while not problematic, do not advance the discussion in ways that are theoretically significant for our purposes.

Our aim is not to evaluate the mentioned studies themselves but to identify theoretical problems in the uptake of the concept and to map the inconsistencies that arise between its use, Harvey's proposal, and Marx's work. We take these shortcomings not as individual mistakes but as difficulties already embedded in the original formulation. The goal, then, is not to critique the authors or their contributions, but to identify the gradient of theoretical and methodological limitations propagated from this incomplete conceptual foundation.

In Silva (2020), for instance, some sense of opposition to value remains, but the author restricts the notion of anti-value exclusively to

money produced as debt (whether in capital markets or by State incentives to capitalist production). Valença (2020; 2025), in a similar vein, twice offers no clear definition and seems to treat the term simply as a synonym for interest-bearing capital. Like Silva, he assumes that anti-value manifests only through the specific unfolding of this particular form of capital once it becomes a commodity (debt, credit, or fictitious capital).⁹ Similar misconceptions go on recurring in the literature¹⁰ in many readings of Harvey's work.

In Sampaio (2019), although the expression of anti-value is also located primarily in the sphere of finance (as in Harvey), the notion is given a somewhat broader meaning. This becomes evident when the author discusses the circulation of value and the possibility of overcoming capital: "Anti-value may be the interruption of this cycle, acting as the essential brake that allows us to imagine another scenario, that of the non-commodity production [...]" (ibid., 16, author's translation). Yet the logic is inverted and the relationship is flipped.

Sampaio suggests that non-commodity production "brings together the characteristics necessary for a path toward anti-value" (ibid., author's translation), rather than the other way around: for him, it is not anti-value (as proxy for crisis tendencies) that might point toward a de-commodification of production, which would align more closely with Harvey's formulation. Going further still, Sampaio attributes to anti-value the possibility of expressing "a time of its own, not tied to capitalist time and its corresponding social division of labour" (ibid., 8, author's translation).

This seems to stem from Harvey's own blurring of different forms of negation, which in turn prolongs the confusion between anti-value as an expression of antagonism and non-value as the outcome of non-capitalist (non-commodity) relations—precisely how Sampaio frames the production (of space) beyond the determinations of capital. Once these two rationalities (capitalist and non-capitalist) are mistakenly conflated within anti-value, another inappropriate pairing becomes possible: on the one hand, Harvey's proposition, which we have treated throughout this article as both a driving force and a threat to circulation; and on the

9. Although Andrade and Marques (2017) also associate anti-value directly with fictitious capital, we did not include them here for a few of reasons. Their work predates Harvey's original formulation (and as such it is not shaped by the gaps in his proposal), it goes on a different direction, and they are consistent within their own framework.

10. Cf. Clarno (2019), Brehm (2019), Tie (2024), Hosseini and Gills (2024), Santos (2025), Schwake and Burgers (2025).

other, Francisco de Oliveira's anti-value ([1972] 2003; 1988), which is the one that (through completely different arguments and basis) addresses decommodification in social production.

This conflicted overlap between Oliveira and Harvey is rarely noticed in the literature and is explicitly flagged in only a few works. Costa (2022), for instance, emphasizes that "the conception of anti-value adopted here, being the one proposed [...] by Oliveira [...], bears no resemblance—aside from the name—to the notion of anti-value more recently advanced by Harvey" (ibid., 26, author's translation). Petrella (2022; 2024) later takes similar care to differentiate them, although he does not do so in his first piece using the term.

Even if Petrella reproduces the narrower, finance-centred reading of Harvey's anti-value, it is clear for him such distinction between the possibility of the *devaluation* of value (Harvey) and the *negation* of value (Oliveira).¹¹ With that clarity, he can draw on the dual sense contained in the shared term as he develops his analysis of the multiple forms of exploitation enacted by capital. It is precisely this need for conceptual separation that fueled another of our studies—see Pereira *et al.* (2025)—devoted to clarifying the specificities of these two different terms.¹²

Another quite frequent issue in the literature is the tendency to treat anti-value as something that can be produced autonomously from value¹³—this is even more explicit in Markley (2024), that maintains that the "production of value in one place and time can only occur by producing anti-value in another." These authors, for instance, discuss the *production of anti-values* as if they operated from the outside, inter-

11. Petrella also gestures toward a third possibility—non-valorization—when he refers to domestic labor that is "unpaid or poorly paid (marked by class, gender, and race)" (ibid., 6, author's translation). We do not include this case among those discussed in the main text because it seems to us to cut across a specific issue on Oliveira's own formulation of anti-value. The explanation is provided in the following footnote.

12. To anticipate a distinction we might develop further elsewhere, in the future: in designating the public funds as non-capitalist resources—one that does not aim at self-expansion or valorization—we could read Oliveira's notion of anti-value alongside Marx's treatment, in the *Grundrisse* ([1857–58] 1973), of what is produced by non-capitals. This would lead to something related, but not quite the same. *Not* anti-values in Marx's (or Harvey's) sense. For now, it is enough to stress that these are different kinds of anti-value, even if they may, in certain circumstances, emerge from the same object, as argued by Pereira *et al.* (2025).

13. And a very common one, present not only in the already cited works of Silva (2020), Valença (2020; 2025), and Sampaio (2019), but also in many others, like Herod (2019), MacFarlane (2019), Bruckermann (2024), Souza (2025).

fering with the circulation of value, from apart and beyond its boundaries. This is addressed, in turn, in a more recent contribution by Ford and Pappachen (2022).¹⁴

Their work is noteworthy for insisting on the inseparable link between value and anti-value; for the definition they put forward; and for attempting to resolve, in a more consistent and coherent manner, the lack of clear distinctions among value's "negatives" that appears in Harvey. And they do so in a way that aligns with Harvey's own reading of Marx's value theory. They write that "[u]nder capitalism, value is a constantly expanding process in which value is produced, circulated, and realized through purchase and consumption. *Any interruption or blockage results in non-values, while anything that blocks the movement of value is an anti-value*" (ibid., 242, emphasis added).

There are, though, two questions that arise from their proposal. First: must every instance of anti-value necessarily take form of a concrete interruption, of an actual blockage imposed on value's movement? We differ. It seems that, in Ford and Pappachen, the dialectical duality of an ever-present anti-value within the forms of value is significantly reduced. As Harvey makes clear, not every expression of anti-value is absolute: it may manifest only as a *threat of devaluation* that may never materializes, or as one that unfolds gradually or even partially.

Second: does every interruption or blockage in the movement of value end up creating what Marx would call non-values? We believe not. After all, the concretization of anti-value, at its limit, may lead either to total devaluation (the destruction of value once embodied) or merely to the interruption of exchange relation, severing the mediation through equivalence of value. One could even ask: does the category of non-values truly apply to things entirely devoid of value (social labour), or to things that, despite embodying useful labour, simply lose such mediation of equivalence between (abstract) quantities of human labour?

This, we argue, depends both on the process and on the strength of the operative anti-value, as well as on the definitions of these negative terms—non-values or things without value—which require further discussion. Perhaps this is yet another consequence of Harvey's failure to

14. The authors discuss "the refusal to collaborate actively [in labor] in capitalist development, the refusal to put forward a positive programme of demands" (ibid., 241) as a strategy to disable capitalism and, for that reason, as a form of anti-value. More specifically, they approach deliberate *stupidity* as anti-value.

systematize a Theory of Devaluation. Even so, despite requiring adjustments, Ford and Pappachen's contribution offers a more solid point of departure. One that, in important ways, already moves beyond Harvey.

3.2. Different forms of capital, different paths to devaluation

As noted earlier, Harvey's formulations point toward multiple and sometimes divergent natures of anti-value. At times an uncharacterized element, at times a condition, a function, or a counter-movement. Our aim here is to recover and argue for an interpretation that, in our view, accounts for all the cases discussed thus far, as well as for many others that could reasonably fall under the concept. More importantly, it is an interpretation that allows the notion of anti-value to be brought back into alignment with the foundations of Marxist thought.

Starting from the premise that value represents a *quantum* of labour time, one might be tempted to treat anti-value according to the same metric: as a *negative quantum* of labour. That is, a direct measure of devaluation, of lost value.¹⁵ The problem, however, is that anti-value would then appear only once devaluation has effectively taken place, as the expended labour-time has already lost its social significance. In other words, has been rendered socially useless (and, therefore, valueless). Here, not only one would privilege *quantity* of value, rather than considering it as an abstract economic property and a social form, but this would also undermine anti-value's status of a *potential threat of devaluation* and, simultaneously as a *driving force in the ongoing process of valorisation* across all moments of value's circulation.

This is precisely where Ruud (2023, 30) and Schwanen (2024, 214) stumble when they suggest that anti-value necessarily entails a halt or an actual devaluation of capital. Although they do not make the mistake of reducing anti-value to one of its specific forms of expression and still acknowledge its broader connection to processes of devaluation, their approach relies on a rigidly *either-or* formulation of value itself—akin to Markley's (2024) treatment,¹⁶ which also falls among those that promote a logical autonomy of anti-value from value. This seems to result not only from the flaws in anti-value's formulation, but also from a misreading of the very nature of value, of the totality of its circulation, and of

15. Cf. Smith (2017).

16. As if it were a direct and formal relationship, he states: "anti-value [...] entails the loss of value" (ibid., 3).

the fact that, in Marx, price is only a contingent expression of value rather than its measure.¹⁷

This directs us back to the argument that value and anti-value *do not* share the same nature—and that the latter is contained within the former. Rather, it seems more appropriate to treat anti-value as a quality, a property of the economic forms that value assumes. Then, by lowering the concept to a lesser importance than that of value, we eliminate an inadequate ontological equivalence between the two and we resolve the first theoretical problem.

We therefore take anti-value as an intrinsic (and lesser) property or quality of the forms that value assumes. Once this issue is settled, we can proceed to examine how the force of anti-value is expressed, that is, its potential to eventually generate devaluation. At the same time, this approach rules out treating anti-value as having its own autonomous *production, realization, distribution, and consumption*. Those processes remain to be considered only in relation to value, which then carries with it the ongoing threat of its own devaluation—that is, anti-values. Thus, whenever one refers to these processes in relation to anti-value (if one ever does), it should be done only insofar as they are considered *within* and *through* value.

This perspective opens up two new avenues for expanding the concept. First, it brings back into view the various forms through which anti-value may emerge—forms Harvey largely overlooks—such as value the form of money, commodity, labour, or as money-commodity (debt). Second, it directs attention to the specific moments of value's circulation at which value must metamorphose: production, realization, distribution, and consumption. Taken together, these allow us to reconstruct the totality of capitalist reproduction in a more complete way. Marx ([1885] 1978, 185) also underscored these elements:

Those who consider the autonomisation of value as a mere abstraction forget that the movement of industrial capital is this abstraction in action. Here value passes through different forms, different movements in which it is both preserved and increases, is valorised. Since we are firstly dealing here simply with the forms of movement, we have not considered the revolutions that the capital value may suffer in its circulatory process ; it is clear however that despite all revolutions in value, capitalist production can exist and continue to exist only so long as the capital value is valorised, i.e. describes

17. A more problematic convergence between flawed interpretation of Marx's value and Harvey's work is found on Das (2017, 614), where it is stated that anti-value "refers to the idea that commodities are not exchanged at their value".

its circuit as value that has become independent, and therefore so long as the revolutions in value are somehow or other mastered and balanced out. The movements of capital appear as actions of the individual industrial capitalist in so far as he functions as buyer of commodities and labour, seller of commodities and productive capitalist, and thus mediates the circuit by his own activity. If the social capital value suffers a revolution in value, it can come about that his individual capital succumbs to this and is destroyed, because it cannot meet the conditions of this movement of value.

Such is the fate of individual capitals when they fail to meet *the conditions required for the movement of value* at each stage of its circuit and in each of its metamorphosed forms. At every form or economic moment, different threats arise to hinder the process and to obstruct value's transformation into its subsequent state within the broader cycle of valorization. Although Harvey (2017) does not address this point explicitly, his discussion of the multiple forms of anti-value seems to gesture in this direction. It is therefore possible to imagine a matrix structured along these two axes, mapping the specific expressions of anti-value associated with each *form of value* at each *moment of its circulation*.

Let us begin with the form Harvey privileges: debt. This is the economic form value assumes when capital itself becomes a commodity; when it acquires a price of its own and is traded on credit markets. Within the circulation of value, this price (interest) amounts to nothing less than the appropriation of a portion of the surplus value produced (or captured) by borrowers. When overused, however, the money-commodity form (debt) turns back against capital. It ceases to function primarily as a promoter of capital's circulation and becomes an element that arrests its development.

To expand this line of thought, one could further unpack the contradictory implications of incorporating debt into each moment of value's circulation—production, consumption,¹⁸ and the disputes over the distribution of the mass of surplus socially produced. This is anti-value operating in the money-commodity form of value.

Another case that recurs throughout Marx and Harvey is hoarding: a threat specific to the money form (before it becomes a commodity), when it is not placed in the condition of capital. That is, in continuous

18. Whether in productive or non-productive consumption. We adopt a simplified division to avoid opening yet another line of debate concerning the many types of consumption that could be considered. It is worth noting that the editors for the 2008 German edition of the Marx-Engels-Gesamtausgabe (MEGA-2)—Omura, Hayasaka, Hecker *et al.*—suggest the work of Shibata (1939, “On the General Profit Rate”, *Kyoto University Economic Review*, v. 14, n. 1, 1939, 40–66) for an updated typology of economic goods.

circulation to its own expanded reproduction. In such a state, money devalues in relation to the growing mass of newly produced value. Savings only escape stagnation when they are made available on the market in the form of capital, thereby revealing the contradictory dialectic at play. The very debt that undermines future accumulation and signals a potential interruption in circulation—through its force of devaluation—also revives dormant capital by returning it to both general and individual circuits of accumulation as credit.

Naturally, we must also consider anti-value in the form of labour. Harvey (*ibid.*) offers several clues as to what might be identified as such. First, anti-value may operate through what he calls the devaluation of the labour-commodity: “Wages are curtailed and the health and well-being of the labourer are threatened even as labourers retain their skills and labour capacities” (*ibid.*, 92); and furthermore, he asserts that the “devaluation of labour power and the depreciation of its values when prolonged or deepened can lead to physical destruction of the labouring population, even as capital usually falls far short of that for obvious reasons” (*ibid.*, 92–93). We should recall, as well, the implications of rising indebtedness within already precarious schemes of social reproduction, which create new forms of servitude and dependency.

This brings us back to the consequence of labour devaluation, an eventual “refusal to work,” as “anti-value personified” (*ibid.*, 77). Thus, after the discussions developed here and in previous sections, it *may* be possible—or so one hopes—to assert, as Harvey does, that anti-value also constitutes “an active field of anti-capitalist struggle” (*ibid.*, 76). Beyond the shifting conditions of production, which alter the value of commodities, and the equally shifting conditions of their realization (exchange) in the market, which reshape the terms of reconverting previously advanced capital into its monetary form, this is the very expression of the fundamental conflict between *capital and labour*.

We can extend this conflict to the commodity form as well (whether the commodity is destined for productive or non-productive consumption). Recall that capital reproduces itself through the continuous reconversion of value (money into produced commodities and then back into money) while appropriating unpaid labour in the process. The mass of accumulated wealth therefore depends directly on the mass of commodities produced and consumed. From here, further contradictions unfold (as instances of anti-value in operation).

First, because every capitalist tends to reduce wages to increase profits (the surplus value appropriated). Yet if all capitalists pursue this

strategy, the demand necessary to absorb the mass of commodities produced is easily undermined. Second, for there is another contradiction rooted in the opposition between usefulness and value, or between use-value and exchange-value. Everything produced under capital is oriented not toward meeting social needs but toward capital's self-expansion. Hence the crises are so often attributed to underconsumption or overproduction. As Marx ([1894] 1981, 288–289) puts it:

if the commodity in question is produced on a scale that exceeds the social need at the time, a part of the society's labour-time is wasted, and the mass of commodities in question then represents on the market a much smaller quantity of social labour than it actually contains. (Only when production is subjected to the genuine, prior control of society will society establish the connection between the amount of social labour-time applied to the production of particular articles, and the scale of the social need to be satisfied by these.) These commodities must therefore be got rid of at less than their market value, and a portion of them may even be completely unsaleable. (The converse is the case if the amount of social labour spent on a particular kind of commodity is too small for the specific social need which the product is to satisfy.) But if the volume of social labour spent on the production of a certain article corresponds in scale to the social need to be satisfied [...] given an unchanged demand, then the commodity will be sold at its market value.

This is what Grespan (2012, 214, author's translation) refers to as capital's *mismeasure*: the “disproportion between what is produced in one sector and what is required for consumption in another.” In other words, the measure of what is produced and the measure of what is socially necessary become opposed and autonomous across sectors. Such scenarios—as “possible failures in the self-measurement of social capital” (ibid.)—undermine capital to the point of a potential “interruption of its flow” (ibid.). Or, as Marx put it ([1894] 1981, 358–359):

The true barrier to capitalist production is capital itself. [...] The barriers within which the maintenance and valorisation of the capital-value has necessarily to move—and this in turn depends on the dispossession and impoverishment of the great mass of the producers—therefore come constantly into contradiction with the methods of production that capital must apply to its purpose and which set its course towards an unlimited expansion of production, to production as an end in itself, to an unrestricted development of the social productive powers of labour. The means—the unrestricted development of the forces of social production—comes into persistent conflict with the restricted end, the valorisation of the existing capital.

In this way, capital resorts to countless geographic and scalar adjustments to expand production continuously¹⁹ and without limit. Put differently, rather than overcoming them, capital frequently finds ways to displace its contradictions and limits: limited consumption under restricted wages; limited availability of inputs and labour; the maintenance of high unemployment to cheapen labour-power; the constant search for new outlets for accumulated capital (hence crises attributed to overaccumulation); and, as well, the unsustainable relationship between capital and nature, which it exploits beyond nature's metabolic capacity for renewal.

One final and important clarification: it is only here, in relation to the commodity form, that we can properly speak of a devaluation of *value*. This should only occur when the socially necessary labour time required to produce a given good decreases as productivity increases—hence the contradiction between rising productivity and the tendential fall in the rate of profit. The terms of valuation of previously expended labour are thereby retroactively altered.

In other cases, we may speak only of a devaluation of *capital*, as in the 2008 real estate crisis. There was no loss of value in the strict sense: the financial meltdown did not alter the conditions under which those properties were produced, nor did it destroy their usefulness.

Their prices were simply driven far below their value. And because of indebtedness, many homeowners were forced to sell under these conditions, eliminating profits at the time and, more severely, erasing the capital they had previously invested—which was readily appropriated by those able to purchase the properties at deeply discounted prices.

Thus, in this case we might understand anti-value as finally taking effect: realizing itself as more than a threat, as a concrete devaluation of invested capital. Again, we must ask: does the forceful manifestation of anti-value necessarily entail a loss of value? It seems to us that it does not, at least not in this scenario.

What occurred was a brief obstruction of the conditions required for these commodities to circulate. At most: a forced and temporary de-commodification, but not an absolute destruction of value. Here, once more, we point to the possibility of exploring other forms of negation through the notions of non-value and valuelessness.

19. See Harvey's (1981) analysis of the spatial fix; Luxemburg's ([1913] 1951) thesis on capital's inherent need for expansion to remedy its tendency toward collapse; or Lefebvre's ([1970] 2003) discussion of capital's recent advances into the built environment as a means of absorbing and reproducing large masses of accumulated capital.

Such ideas could also be projected onto emerging tensions surrounding ecological limits and climate transition. As regulatory frameworks, technological shifts, and environmental constraints increasingly threaten many sectors (*surtout* those more carbon-intensive), large volumes of capital face the risk of devaluation in the form of so-called stranded assets. Furthermore, the very consequences of climate change could directly affect the profitability of certain investments, also depreciating the capital funding them. From the perspective advanced here, such processes can be interpreted as concrete expressions of anti-value: moments in which previously valorized infrastructures, reserves, or fixed capital lose their capacity to function as vehicles of accumulation.

A similar analytical potential emerges in relation to the growing importance of intangible assets and the organizational dominance of lead firms within global value chains. In these configurations, the concentration of intellectual property, data, and platform infrastructures enables the capture of disproportionate shares of surplus while simultaneously generating new systemic vulnerabilities. Sudden shifts in technological standards, regulatory environments, or competitive dynamics may rapidly erode the pricing of such assets (and the capital fixed on them). These instabilities can also be seen through the lens of anti-value, particularly in the sphere of distribution and capitalization, where the fragility of highly financialized valuations becomes increasingly evident.

These remarks are, of course, preliminary. They serve only to sketch an initial outline of a more consistent analytical framework. To push this inquiry further, it would be necessary to explore the many ways in which a given *individual capital* or the *total mass of social capital* may be devalued. And this must be done always bearing in mind that such devaluation can arise from the very same elements that sustain its circulation. Pursuing this fully, however, would be far too extensive for the present article. Here, then, we offer only a synthesis of the framework we have sought to delineate.

4. [Nicht-/Non-] Final remarks

What we have presented aimed to identify existing works that engage with concepts derived from Marx, particularly anti-value (and, in some cases, non-value, given the inconsistencies carried over to it). This was done to highlight the need to further develop the notion and mend the gaps in its formulation, perhaps even granting it the status of a concept in its own right.

However, we set aside a more extensive examination of the various pathways of devaluation (since this was not our primary objective) that would be necessary to deepen the analysis of anti-value and its implications for the wider body of Marxist thought. Our initial aim, as stated, was to reestablish an initially satisfactory degree of conceptual consistency so that the theoretical horizon could be expanded.

Yet during our effort, we faced a series of questions—mostly concerning the nature and the very validity of the concept. Is anti-value merely another name for long-familiar elements intrinsic to capital and to Value Theory? Is it simply a synonym for contradiction—something that is, at once, a process and a logical relation that exceeds simple opposition and constitutes the very motor of history? Let us recall, too, that this dynamic and contradictory nature is not unique to capital, but to history itself. As Lefebvre (1968, 73) warns, if social totality were wholly coherent, without any propensity toward crises and conflicts, history would already have come to an end.

In this sense, we must take into account that there is already a substantial body of work capable of addressing the crises that are inevitably and contradictorily generated within the very workings of capital—including Harvey's own work (1982; 2014; 2017). This leads us to ask: could anti-value be formulated in a way that enables a deeper revelation of contemporary social relations of production and, within a capitalist mode of production, of the exploitation and expropriation of human labour? Or is it merely another veil—one that renders social forms opaque to critique, generating yet more unresolved (or perhaps unresolvable) confusions?

As Tetler (2022) argues, anti-value is a solution to a false problem, one that only exists if one treats value and labour as exclusively positive categories. In his words, “value, properly conceived, is already the negative, dialectical concept that Harvey is looking for” (*ibid.*, 21). As such, anti-value would be nothing more than a redundant appendage. Yet if, as Tetler suggests, there is indeed a widespread misreading in which labour and value are approached solely in their positive, then such problem is not so false after all. In turn, this only strengthens the case for acknowledging a crucial contribution of the notion of anti-value: it foregrounds the multiple fronts through which devaluation may arise without collapsing their specific determinations.

Anti-value brings these tendencies onto a shared analytical plane while allowing the distinct determinations of each form of capital and value—at each moment of their circulation—to remain visible. In doing

so, the particularities of each case become intelligible, even as the common patterns across different processes of devaluation are also brought to light. It is precisely this dual capacity that constitutes anti-value's major contribution. For, as we argued previously (Pereira, Nakama, Gemal, Cunha, & Cevallos Serrano, 2025, 9), although Marx did consider "elements and processes inherent and essential to capital" and the fact that they were "contradictory and threatening to its own reproduction", he "did not systematize them into specific categories to level and oppose them."

As Green (2018) aptly notes, such contributions, including Harvey's own, point to "whole dimension of Marxist crisis theory which is widely ignored in the contemporary literature." To underscore the potential of anti-value to be incorporated within this theoretical opening, we recalled Grespan's (2012) reflections on what he terms capital's *mismeasures*; but we could also point to Shaikh's (2016) remarks on capital's inherent tendency toward disequilibrium, which forces violent and temporary adjustments that only deepen its contradictions; or to Brenner's analyses (1998; 2003), which highlight the contradictions of postwar overaccumulation and the failures of masking crises through debt-driven growth.

This broader constellation of works provides a useful vantage point from which to reconsider anti-value's potential and its limitations. Although some authors do not explicitly correct Harvey's formulation, they nonetheless manage to push it further, often while advancing their own insights into anti-value and its relation to the reproduction of capital. Zambrana (2020), for instance, deepens the analysis of capital's contradictory expansion—mediated by exploitation and expropriation—by drawing on Harvey's dialectical framing. Also, there is Mumby (2020), who, through anti-value, recentres the fact that the continuous struggle in the capital-labour relationship is inherent to capital itself, as is any resistance enabled by labour exploitation that extends beyond the traditional workplace and into all aspects of social life—which, in turn, highlight its structural instability. And, more notably, one should note Souza's (2025) work, that reconnects Harvey's notion of anti-value with the more established concept of accumulation by dispossession. Building on Fontes's (2010) critique of Harvey's overly stark inside/outside dichotomy, Souza develops a more nuanced and complex account of how many different expressions of anti-value may be metabolized within the reproduction of capital.

We may argue, then, that anti-value is not merely a theoretical formulation confined to Harvey, but a concept potentially useful to other major approaches to capital's crisis tendencies. For now, this may suffice as a suggestion for the development of further theoretical research, since our concern is to expand our capacity to grasp the tendencies in the movement of capital and of value.

Consequently, at this stage it matters little whether it is only part or the whole of social capital that may be devalued—as we stated previously, it is not a problem of quantity, but rather of quality, of the nature and processes of value as a social form. It is essential to account that across different spheres, levels, and dimensions, there are different fronts of devaluation (concrete or virtual, potential), and that these fronts pose danger for capital. These we must identify, understand, and delimit—both as theoretical problems for us and as concrete ones for capital. And it seems to us that anti-value facilitates this process of making these tendencies intelligible, guiding us to further inquiry.

For the purposes of this article, our point of departure was the claim that, under capitalism, value is set into motion toward self-expansion by the very elements that contain the seeds of its potential paralysis. Anti-value therefore projects itself onto, and acts upon, value—propelling it forward, yet simultaneously expressing and reflecting its contradictions, pointing toward the possibility of a complete interruption of its movement. That is, toward total devaluation and the emergence of other determinants of social production. In this sense, anti-value, as Harvey (2017, 78) suggests, may constitute “the subterranean soil in which anti-capitalism can flourish in both theory and practice.”

However, all this hinges precisely on the validity of capital's negatives and on how they relate to its most fundamental category: value itself. It is therefore necessary to advance the discussion not only in the direction of anti-value, but especially toward valueless things and the so-called non-values and not-capital. This marks the next step in an ongoing effort to reconstruct consistency and theoretical coherence among the new categories that seek to be integrated into Marxist thought to contribute to its further development.

Taken together, the analysis developed here suggests that the concept of anti-value can play a productive role in contemporary Marxist debates on crisis and devaluation, provided that its theoretical foundations are clarified. By situating Harvey's proposal in relation to Marx's own negative categories and examining how it has been interpreted across different strands of the literature, the article has sought to show

both the analytical promise and the conceptual ambiguities surrounding the term. When understood as an immanent expression of the contradictions of value, anti-value helps illuminate the multiple ways in which the reproduction of capital is constantly shadowed by the threat of devaluation. This perspective not only sharpens the conceptual apparatus of value theory but also opens avenues for analysing emerging forms of instability in contemporary capitalism.

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Biography

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The Dialectics of Ecological Civilization and Degrowth

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ABSTRACT: This is a critical essay review of John Bellamy Foster's *The Dialectics of Ecology* (2024), a collection of essays which offers an overview of his most recent engagement with eco-Marxism. In *Capitalism in the Anthropocene* (2022), Foster has already argued for the necessity of a critique of capitalism as a cornerstone of the Anthropocene epoch, and for an ecological revolution against the destructive exploitation of the ecosystems and the workers. In *The Dialectics of Ecology*, he ventures into two main theoretical and political pathways for the solution of the ecological problem: 1. the rehabilitation of dialectical materialism as the backbone of ecology, and 2. China as the model country of ecological civilization, to be accompanied by planned degrowth in the consumerist Global North. Foster's eco-Marxist positioning is here discussed in light of his previous work and the relevant Marxist debates. The discussion of his recent publication leads to an evaluation of both its merits and limits, in particular relative to 1. the interrelation of dialectics, science and politics, and 2. the question about a viable paradigm of ecological socialism.

KEYWORDS: John Bellamy Foster, dialectics and ecology, eco-Marxism, degrowth, Anthropocene, political ecology, ecological civilization.

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John Bellamy Foster's *The Dialectics of Ecology* is a collection of essays from the *Monthly Review*. They offer an overview of the author's most recent engagement with Marxism and ecology. In *Capitalism in the Anthropocene* (2022), Foster has argued for the necessity of a critique of capitalism as a cornerstone of Anthropocene geology and an ecological revolution against capitalist destructive exploitation of the ecosystems and the workers. In *The Dialectics of Ecology* he ventures into two main theoretical and political pathways for the solution of the ecological impasse: 1. The rehabilitation of dialectical materialism as the backbone of (Marxist) ecology, and 2. China as the model country of ecological civilization, to be backed with planned degrowth in the consumerist Global North. In this essay review, I will discuss Foster's eco-Marxist positioning in light of his previous work and relevant Marxist debates. I then delve into his recent publication stressing both its merits and its limits, in particular relative to the two abovementioned issues: the interrelation of dialectics, science and politics, and a viable model of ecological socialism that does not renounce critique.

The Dialectics of Ecology, in the variety of its sections, offers an overview of his most recent reflections on Marxism and ecology, an area in which Foster has become a point of reference. His *Marx's Ecology* (2000) was a fundamental contribution to the reassessment and valuation of Karl Marx's views on the capitalist exploitation of nature. Thanks to Foster, concepts such as the 'metabolic rift'—the destructive contradiction that has increasingly made the economic logic of accumulation clash against the regenerative capacity of nature—has become crucial for ecological critique. It especially brings into focus the problem of the socio-economic structures that are at the origin of the environmental crisis. Twenty years after that important reassessment, *The Return of Nature: Socialism and Ecology* (2020) earned Foster the Deutscher Memorial Prize as "the best and most innovative new writing in or about the Marxist tradition" for his reconstruction of the socialist roots of environmentalism and the relevance of Marxism for the emergence of ecological thought. As an extension of his earlier work, *Capitalism in the Anthropocene* (2022) signalized Foster's intervention in the debate on the geological impact of humankind by technological means. In that publication, he importantly argued for the necessity of sociopolitical critique as a cornerstone of Anthropocene geology and brought forward the thesis that there is an insurmountable incompatibility between capitalism, on the one hand, and the protection of nature and the preservation of life, on the other. His analysis rested on solid sociological ground,

more than other similar calls for capitalism critique in the Anthropocene, for instance Jason W. Moore's attempt to introduce the alternative neologism of the 'Capitalocene.' Foster's intervention was also marked by the clarity of his style, in a less journalistic manner than others, for instance Naomi Klein's denunciation of the contradiction of environmental agendas with global market economy.¹ In spite of their appreciably different approaches and styles, Foster shares Moore and Klein's conviction that there is a fundamental either-or choice to be taken: "ecological ruin or ecological revolution," as the subtitle of *Capitalism in the Anthropocene* goes. Among others, in that book Foster also offered a sharp analysis of the ecological interdependence between dominant capitalist countries and the Global South. He described the North-South relation as an "unequal ecological exchange." Indeed, owing to economic and geopolitical asymmetries, poorer countries pay the higher price for the ecological crisis they are less responsible of. Moreover, as an editor of the *Monthly Review*, Foster has increased his leftist readers' awareness of the urgency to deal with the ecological problem. At the same time, he made Marx's legacy noticeable again in the broad ecological debates.

The introduction to *The Dialectics of Ecology* points to the difficult relationship between Marxism and the natural sciences, at least in two of its most visible philosophical strands: so-called 'Western Marxism' and the Soviet state doctrine sanctioned by Stalin's *Dialectical and Historical Materialism* (1938). Foster's understanding of 'Western Marxism' reduces it to a selective reading of György Lukács (only *History and Class Consciousness* in its first edition) and some intellectuals of the Frankfurt School, essentially Theodor Wiesengrund Adorno and Max Horkheimer. Foster's thesis that Marxism in Western contexts neglected the problem of nature and the sciences owes its plausibility to this very limited understanding of Western Marxism. To be sure, critical theory (especially in Germany) and historical materialism (especially 'cultural Marxism') still have difficulty to include epistemology and ecology as significant components of social and political theory. The separation of the natural sciences and the social sciences, fashioned as an opposition between instrumental reason and value-oriented reason (or communicative action) still affects the heirs of the attack on science and reason of the *Dialectic of the Enlightenment*. Yet, for Foster the main problem, a kind of original sin, was the dismissal of Friedrich Engels' *Dialectics of Nature* and the separation of his legacy from Marx's. Even

1. See Moore (2016) and Klein (2014). See also Saito (2024).

though he is correct about the dismissal of Engels, the reasons for the Frankfurt approach to nature and the sciences are more complex. Among the intellectual factors that exerted a strong influence on critical theory one can mention non-Marxist lines of thought such as neo-Kantianism, phenomenology (Edmund Husserl and even Martin Heidegger) and the reaction to positivism, which played a role in the conceptions of science by Adorno, Horkheimer, Herbert Marcuse and Jürgen Habermas. Moreover, Marxist thinkers also embraced different epistemologies than dialectical materialism. It is sufficient to remind us of Bogdanov's post-Machist philosophy in the Soviet Union. The adherence to Marxism of key members of the Vienna Circle, for instance Otto Neurath and Edgar Zilsel, bears witness to the complexity of Marxist epistemologies—not to speak of later developments on both sides of the Iron Curtain. They cannot be reduced to a yes or no answer to Engelsian diamat in its Soviet codification. Most importantly, historical epistemology, as an influential strand of reflection on knowledge and science in continental Europe (especially in France, Germany, and Italy), was first presented by Dominique Lecourt as a complement of historical materialism.

On the other side of the Cold-War divide, according to Foster, a dogmatic outlook and a rigid separation of historical materialism (that is, the dialectics of society) and dialectical materialism prevailed after a promising early phase of Soviet engagement with the philosophical foundations of the social sciences and the natural sciences, in particular biology. Although *Dialectics of Nature* only partially reflects Engels' understanding of science and philosophy, it was canonized in Soviet Union through a dogmatic reception of Lenin's *Materialism and Empiriocriticism* (1909) and Stalin's *Dialectical and Historical Materialism* (1938). A version of dialectical materialism was thus established, which fostered an objectified understanding of nature, science and history, thereby reasserting positivist scientism in a new form. It paradoxically obliterated crucial aspects of Marx and Engels as well as Lenin's political theory, especially praxis and the open interplay of subjectivity and objectivity.

As Foster remarks, it was a group of British scientists, biologists, sociologists of science and historians of science—Joseph Needham, John D. Bernal, Lancelot Hogben, and Hyman Levy—who brought dialectic thought forward in connection with the sciences. They could pick up and further the theses that the Soviet delegates Nikolai Bukarin, Nikolai Vavilov, Mikhail Zavadovsky and Boris Hessen presented at the Second

International Congress of the History of Science and Technology in London in 1931, before the group was cancelled by Stalin's purges. Moreover, Foster credits Evald Ilyenkov for his integrated social-natural understanding of dialectics in Soviet Union, and Henry Lefebvre for his criticism of the scientism that was implicit in Stalin's ossified understanding of dialectical materialism in France. However, he does not consider important Marxist contributions to epistemology and the history of science, including the early Frankfurt debate on science and epistemology (Franz Borkenau and Henryk Grossmann) or Marcuse's and Habermas's influential vistas on science and ideology. As for Alfred Schmidt's *The Concept of Nature in Marx*, it is rapidly dismissed for its epistemological, rather than ontological, understanding of dialectics. Jean Paul Sartre's *Critique of Dialectical Reason* (1960) is downplayed for similar reasons, namely for restricting the validity of dialectics to the human realm. In such rather schematic view of Marxists' positions on philosophy and science, Louis Althusser's structuralist epistemology and his criticism of ideology do not occupy any place, while Antonio Gramsci's legacy is only hinted at in a critical note on Perry Anderson's anti-scientist cultural Marxism, as presented in *Considerations on Western Marxism* (1976). Relative to Lukács, Foster reads *History and Class Consciousness* (1923) against the background of the philosopher's self-criticism in the preface of the 1967 edition and the *Ontology of Social Being* (1973) without any discussion of the political-ideological pressures on the development of his thought before and after 1956.

The heroes of Foster's book are not the philosophers but rather the *dialectical biologists*. He particularly praises Richard Levins and Richard Lewontin for *The Dialectical Biologist* (1985), and Stephen Jay Gould. Their perspectives on the life sciences help Foster to interpret the program of Engels' *Dialectics of Nature* in terms of a theory of emergence and contingency applicable to both nature and social processes (Foster 2024, 38). Indeed, the first three chapters of *The Dialectics of Ecology* are an apology for the dialectics of nature. According to Foster's exegesis (following in the footsteps of earlier estimators of Engels' natural philosophy), the first of the three dialectical laws, "transformation of quantity into quality and vice versa," actually means "phase transition" or "threshold effect"; the second law, the "unity/identity of opposites," ought to be referred to "contradictions and feedback loops that introduce transformative change"; and third, the law of the "negation of the negation" actually is a "historical, evolutionary concept of emer-

gence” (Foster 2024, 52–53). But does Engels’ philosophy of nature really need a translation and be thereby rescued on the basis of the evolution of the biological sciences? And, in turn, do the natural sciences (in particular, biology and ecology) need the dialectics to speak about phase transitions, thresholds, feedback loops, emergence, contingency, evolution and related concepts? Dialectics looks like an imaginary epistemology, which Engelsians can superimpose on scientific results that have been achieved independently of it, as a sort of philosophical superstructure. But no, according to Foster, Engels’ statement, “nature is the proof of dialectics,” still holds and can be actualized as “ecology is the proof of dialectics” (Foster 2024, 86). He also lists the alleged discoveries that biologists made thanks to the dialectics, from E. Ray Lankester’s thesis of a connection between epidemics and farming to J.B.S. Haldane’s theory of the material origins of life drawing on Vladimir Vernadsky’s biosphere, Bernal and Needham’s theories of emergence, and so on (Foster 2024, 56–57). However, even if dialectical materialism might have served in specific contexts as a framework for biology and scientific research in general, one should bear in mind that the history of science has constantly been the theatre of ideological, philosophical and theological confrontation. Isaac Newton grounded the principles of his physics on theological convictions about God’s Providence but this does not imply that one must embrace Christianity as an integral part of modern physics. Following the lesson of Hessen on this, Marxist historiography of science has become aware of the fundamental importance but also of the threats of ideology for science, especially in connection with zeal for orthodoxy (Hessen 2009, 61–73).

According to Foster, a reassessment of the dialectics of nature and society offers a solution to the much-debated ecological (epistemological and ontological) problem of the separation of nature and culture. However, a biology-oriented dialectics risks to dismiss fundamental political and epistemological aspects of dialectical Marxism, in particular the relation between subjectivity and objectivity, which is at the roots of class-struggle. The possibility of a naturalized objectified comprehension of dialectics—which does not solve but rather deepens the separation between the natural sciences and social sciences at a philosophical level—can be evidenced by Foster’s concurring praise of István Mészáros and criticism of Sartre. Foster derives from Mészáros’s *Marx’s Theory of Alienation* (1971) the central insight of eco-Marxism that capitalism is responsible for a ‘dual alienation,’ of labor and nature (Foster 2024, 38). Yet, what does this dual alienation mean apart from the use of the same

word in two spheres? While the exploitative and destructive logic of capitalism at the expenses of workers and environments is undeniable, the equivocation between the alienation of humans and environments is untenable from the viewpoint of subjectivity. The reification of human relations based on the reduction of labor to a commodity and the corresponding fetishization of commodities cannot have the same meaning as the destructive exploitation of nature, unless an objectivized dialectic is assumed for both humans and natural processes, thus renouncing the specificity of consciousness and praxis or, even more paradoxically, unless a subjectivation of nature is embraced which equates the latter's *interiority* to human consciousness-cum-praxis.

The Western work that Foster reprimands for its rejection of Engels, Sartre's *Critique of Dialectical Reason* addresses this very problem and argues for the necessity of a preliminary clarification of the (epistemological and socio-historical) conditions of validity of dialectics. According to Sartre, dialectics is a subjective-objective conception of historical development that finds its validity in human history and culture, understood in terms of consciousness and praxis. By contrast, an extension of the validity of dialectics so conceived to a reality that is not accessible in terms of subjectivity, namely to nature, is a metaphysical assumption that cannot be critically validated. Sartre's reflection certainly has significant limitations from the viewpoint of contemporary ecological concerns that push towards the integration of history, biology and geology. However, his philosophical critique is still valid. It denounces the μετάβασις εἰς ἄλλο γένος, a philosophical equivocation between two very different senses of alienation: the subjugation of an objectified *subjectivity* perceived as a commodity and the destructive exploitation of a living *objective reality* reduced to a commodity. On the one hand, a naturalized dialectics constitutes an ontology that renounces the specificity of historical knowledge and obliterates the political implications of the critique of alienation for emancipatory praxis, which is both material and spiritual. On the other hand, a tentative subjectivation of nature is an undue projection—indeed a form of alienation—akin to the one Feuerbach criticized as the problem of religion (today repeated in many forms, for instance by Gaia's superagency according to Latourian anthropology). One can call it a metaphysical (if not theological) externalization of agency. In this light, the idea of a dual alienation as the political problem of a unified natural-cultural dialectics questions the validity of the principle of emergence itself (the first law of Engels' dialectics of nature) applied to the cultural realm. Are there emergent properties

of the social realm, which cannot be reduced to biological processual objectivity? Foster states that, “at a social level, the dialectic can be seen in terms of human consciousness and practice” (Foster 2024, 49). But he says nothing about the emergent properties of the cultural sphere apart from the prominence that labor and consciousness have in it. What about politics, the arts, ideology? Do they have their specific dynamics? And do they exert feedback loops on the material, biological and economic basis? This is the old question concerning the dependency or relative autonomy of superstructures from the socio-economic base. If this relation is deterministic, Foster’s approach repeats economic reductionism in naturalized guise by grounding it in biology. Moreover, the problem of the dialectics of subjectivity-objectivity raises the question of praxis: While the emancipation of the human condition depends on class struggle, who or what is the subject of nature’s de-alienation? There is no natural counterpart that can substitute the revolutionary subjectivity of antagonistic sociology (that of the *Manifesto of the Communist Party*) unless consciousness and praxis are naturalized, that is, they are understood in objectivizing terms (their naturalization) that are more akin to positivistic philosophy than dialectical thought. Ultimately, even if one assumes with Foster that there is a relation between important developments of biological-ecological thought and Marxist dialectics, the linkage between scientific, philosophical and political motivations is far from obvious and would require further investigation.

To be fair, Foster positions himself at the contradictory juncture between two lines of dialectical thought, biological, on the one hand, and humanistic and praxeological, on the other. In spite of some biologist biases, he sometimes resorts to the critical humanistic dialectics. For instance, he draws from it (in chapter three, on Marx’s “revolutionary humanism”) a harsh criticism of Object Oriented Ontology, with particular reference to Timothy Morton’s philosophy. Foster argues that recent object orientations revive the “fetishism of commodities” and constitute “a universalized reification of human social relations” (Foster 2024, 78). They ultimately “reenchant” the world by means of a “remystification.” In accordance to the “flat ontology” that Morton and others embrace, “all beings [...] have agency, even mind” (Foster 2024, 80). Such a philosophical ecology privileges “the mystical, spectral, paranormal” at the costs of meaningful political analysis and emancipatory praxis. This is an instance of Foster’s capacity of ideology criticism which, as I will argue in a moment, should be expanded as a general

intellectual attitude to also debunk ideological shortcomings in the leftist camp. That is, *reflexive* ideology critique is necessary, too.

In my view, the most convincing sections of the book are chapters four and five, on the financialization of nature. Foster here addresses the problem of “natural capital.” According to his reconstruction, this concept stems from socialist concerns about the physical and ecological limits of capitalism in the nineteenth century but has been recently appropriated by (green) capitalism as an instrument of pseudo-ecological commodification of nature. The tendency of pricing nature, promoted by institutions of international governance (e.g. at the UN Climate Change Conference held in Glasgow in 2021), works as a method for the quantification of environmental costs which inexorably leads to the commodification of the so-called ‘ecological services.’ The latter (understood as the natural processes that bear economic advantage) eventually become the object of privatization and investments. The monopolization of the forces of nature—Foster makes the example of a waterfall (Foster 2024, 110)—can be very remunerative for those who can exploit them but is based on several capitalist prejudices, first among them, that private interests can protect the environment better and more effectively than the public sector. This is the prelude to what Foster terms “the tragedy of the commodification of the commons” (Foster 2024, 125; cf. Longo, Clausen and Clark 2015). It is rooted in a vision of natural capital that unduly moves away from considerations about use-value to exchange-value interpretations of nature, according to which physical and biological resources and processes can be equated to commodities which are prone to investments and speculations. Nobel laureate in chemistry Frederick Soddy already remarked, as early as in the first decades of twentieth century, that an irresolvable contradiction exists between physics and money in the understanding of economic growth. While mathematics (as the basis for monetary calculations) posits the accumulation of capital as an infinite process, as if economy were a “self-acting automaton” (Foster 2024, 139), in reality the “free gifts of nature” have physical limitations. Illusions and politics of unlimited competitive expansion pave the way to destruction and war. Today’s market-oriented approaches repeat old errors, for instance policies based on the assumption of nature’s unbounded capacities. Another idea in circulation, with a similar ideological function, is that natural services are subjected to economic ‘fungibility’ wherefore the exhaustion of a resource can always find a functional substitute (Foster 2024, 114, 130). By contrast, Foster argues that nature is mostly non-replaceable, therefore society should

not obliterate the irremediability of many forms of devastations, pollution and extinction for short-sighted economic benefits. As Karl Marx remarked (and Foster reminds us, Foster 2024, 112):

Man is but a tenant of the soil, and he is guilty of crime when he reduces the value for other tenants who are to come after him.

Stepping out of the one-sidedness of economic growth to embrace socialism is the only remedy. This is Foster's argument throughout this and his previous books.

This diagnosis, on which most left leaning ecologists will agree, leads him to bizarre conclusions. Foster firmly believes that China is the embodiment of the socialist solution of the current impasse. Chapters six and seven are a discussion and defense of China's self-fashioning as "the ecological civilization" based on official declarations and some historical-philosophical generalizations without presenting any pondered critical analysis. The concept of "ecological civilization" which, as one reads, originated in Soviet debates of the Eighties, has now become an integral part of official Chinese politics. Foster emphasizes this with several quotations of president Xi Jinping relative to "the new revolutionary, and transformative model" proper to "a great modern socialist society that, unlike capitalism, does not sacrifice people and the planet to profit" on the base of "a non economic definition of well-being" (Foster 2024, 163–164). According to Foster, China's virtuous socialist path to ecology avoids top-down decisions and should be seen as a "grassroots mobilization" towards a "new ecological communism." The key to such "mobilization of the whole society for environmental protection" is planning. Now, while the efficacy of planning vis-à-vis the free market to be lured by incentives, typical of the capitalist Green New Deal, looks plausible, the claim that it has its source in grassroots movements sounds rhetorical and even contradictory, unless the mechanisms of bottom-up planning are illustrated in detail. The connection between official discourses, real politics and economic practices is not addressed in any manner, therefore Foster's repetition of Chinese authorities' official communications looks unsubstantiated. In the same pages, he also celebrates the "new revolutionary subjectivity," the environmental proletariat of the Global South. Although China officially belongs to the "Global South" (according to United Nations designation for Trade and Development, UNCTAD), are its economy and politics representative of the proletarian revolutionary struggles for ecological justice in the Global South? Moreover, Foster delineates a divide that is reminiscent of the Cold War, when real-socialist planned economies faced USA-lead capitalism,

but the interdependent world economy of the globalization of the last thirty years or so does not allow for a clear-cut opposition of incommensurable socio-economic and political systems. Foster is ambivalent on this point, the interdependency of the geopolitical logic—Western capitalism versus Chinese communism—and the economic logic of the globalization—which is at the basis of concepts like “unequal exchange.” Perhaps he assumes that the criticism of the globalization only concerns the West. Furthermore, he does not explain what is so “revolutionary” of twenty-first-century Chinese “praxis.” Is the image of technology-driven China, Chinese productivism and pollution, State-controlled society mere ideological calumny, a distortion orchestrated by anti-socialist capitalist propaganda? Foster’s example for the virtues of grassroots revolutionary socialist planning in contrast to capitalist mismanagement is his comparison between the successful (no irony) mobilization of Chinese society to dam the pandemics of COVID-19 in contrast to the American response. The US American catastrophic and anti-social health politics that led to a mortality rate of 3,507 per million people (as of September 2023) is out of question. But what is Foster’s source of information about the Chinese management of the pandemics independently of State-approved statements. As it seems, Foster applies a double standard of ideology criticism, depending on whether the target is American or Chinese information.

Foster is particularly fond of Marxian ecology with Chinese characteristics. He argues that its materialist (quasi-Epicurean, therefore quasi-Marxist) roots can be found in the Daoist tradition which eased the reception of dialectical materialism in China, according to a simplified history of both dialectics and materialism, not to speak of Chinese history—which Foster means to deduce from Needham’s comparative studies (Foster 2024, 172). In chapter seven, Foster claims that this convergence of Marxism and Chinese philosophy was also consonant with Karl Marx’s criticism of Eurocentrism (Foster 2024, 174). This comes a bit of a surprise, given the amplitude of the Marxist debates on topics such as linear historical development, Oriental despotism and the paradigmatic status that Marx and many Marxists ascribed to English capitalism. Foster sees the criticism of the limits of Marx’s thought concerning Europe and world history as an interpretative mistake by Western Marxism “as a distinct philosophical tradition [which] has been ambivalent with respect to imperialism and deeply ethnocentric in its approach to Marxism in the West” (Foster 2024, 177). Such exaggerations do not need to be discussed. Let me only add that, in opposition to the

dead end of Western-Marxist and imperialist Eurocentrism, Foster resorts to President Xi Jinping's vision about the Marxist and Chinese roots of the ecological civilization to come, by quoting from the latter's *The Governance of China* and making reference to his Report at the 19th National Congress of the Chinese Communist Party in 2017 (Foster 2024, 184; cf. 326, n. 41 and 42). He concludes with Needham's words:

China has in her time learned much from the rest of the world; now perhaps it is time for the nations and the continents to learn again from her. (Foster 2024, 184)

That there is much to learn from China is out of doubt but, given this context, the question is: what is the lesson to be derived today? Learning implies broad programs of cultural and scientific exchanges as well as in-depth investigations of historical and cultural interdependencies like those Needham accomplished through his *Science and Civilization in China* and his commitment to the UNESCO peace-oriented multilateral diplomacy on matters of education, science and culture.

Chapter eight is an interlude on Anthropocene extractivism. It deals with the Great Acceleration of the curves representative of the planetary crisis due to anthropic trends. Foster makes the suggestive proposal to conceive of them as an instance of the dialectical law of qualitative leap caused by quantitative processes. In this case, the human relation to the planet is concerned. That extractive activities are a key problem, should be clear to everybody. Indeed, they are the fossil preconditions of today's capitalism. Foster criticizes the many metaphoric uses of the expression 'extractivism' today—financial, cultural, epistemological and other extractivisms (Foster 2024, 189). He favors the original Marxist meaning strictly connected with mining and, to lesser extent, agriculture (Foster 2024, 189–190) as a more literal use allows us to, first, understand the material roots of the ecological problem and, second, to strengthen the standpoint of the Global South relative to the problem of capitalism and ecology, that is, the standpoint of people in areas that are subject to massive expropriation of their resources with massive environmental impact.

The last two chapters of the volume deal with the second pillar of Foster's ecological transition: alongside the plan of an ecological civilization—to be learned from the East—the program of economic degrowth—for the West. Chapter Nine, "Socialism and Ecological Survival" addresses the shift of environmental policies, in line with the IPCC, from mitigation to adaptation, based on the fact that even the best scenario of climate change implies the massive alteration of the

conditions of life on the Earth. Foster substitutes the rather passive concept of adaptation for the more active one of survival. He retakes eco-socialist and technology-critique positionings by socialists of the Seventies (especially Barry Commoner, Charles H. Anderson and Rudolf Bahro) to argue that ecology and peace have become (or must become) of uttermost concern to the working class in the atomic age. Indeed, the atomic bomb has introduced a new apocalyptic dimension to politics as a symbolic and real threat of extermination. The end of humanity could follow a nuclear war or the crossing of the planetary boundaries of human habitability (Foster 2024, 207). The connection between the two threats is not arbitrary—remember that the Anthropocene Working Group that worked towards the validation of the Anthropocene hypothesis for about two decades (2009–2023) designated radioactive traces of atomic tests as the main molecular marker of a new geological epoch.

In chapter ten, Foster expounds on the idea of a state-directed planning towards sustainable and fair societies. This means degrowth “for the most opulent sectors of the world population” (Foster 2024, 239). The premise is that GDP cannot be the primary measure of progress and wellbeing, since “economic growth [...] is the main cause of the destruction of the Earth as a safe place for humanity” (Foster 2024, 241). Capitalism generates illusions that are functional to the very dangerous maintenance of the unbalanced status quo, for instance the myth of technofixes (Foster 2024, 242–243) and that of self-regulating markets (Foster 2024, 244). By contrast, planned and semi-planned economies, China, Cuba and Venezuela give Foster “hope of ecological breakthroughs” (Foster 2024, 266–267). His Manichean opposition—a revival of the spirit of Cold-War party politics that does not shed much light on global interdependencies and ubiquitous technocratic responses to the ecological challenges—is accompanied by interesting reflections on the efficacy and limitations of central planning in the USSR. Foster points to Lenin’s New Economy Policy of 1921 as a measure that introduced a form of mixed economy, a “State Capitalism” in which the State became allied with monopoly capitalism (only big capital) under socialist control as a necessary step in the transition to socialism (Foster 2024, 253). The successes of the initial phase of the NEP, according to Foster, were shaded by Stalin’s 1928 brutal acceleration of the planning towards industrialization via top-down decisions. Despite its limitations, this change of pace allowed Soviet Union to rapidly develop an industrial economy capable of resisting and eventually defeating Nazi Germany (Foster 2024, 256–257). The problems with excessive State control and

bureaucracy—as the story goes—became more evident during the Cold War but only came to a real halt in “the chaos of Gorbachev era” which, according to Foster, was merely concerned with the concession of “amenities to the people.” It eventually led to the collapse of the system and the seizure of power by an oligarchy eager to imitate the opulent lifestyle of the Western elites (Foster 2024, 258). China’s developments were different: it soon abandoned the Soviet form of planning (after a first phase, from 1953 to 1978). After 1978, China became a mixed economy similar to Lenin’s NEP, which Samir Amin called “State capitalism under the leadership of the Chinese Communist Party” (Foster 2024, 260). According to Foster, this hybrid offers a model of state regulation and co-production between state and market, in which the latter is never left alone (Foster 2024, 261). To prove the efficacy of planning, Foster even mentions cases of US American history in which the State adopted forms of planning. This happened for instance during the WWII. The clearest example of planning successes in the United States is (quite unexpectedly!) the Manhattan project (Foster 2024, 262–263), which also marked the beginning of the atomic age that Foster, in other parts of the book (aforementioned), presents as a qualitative leap into a new age of existential threat for humanity.

Thus, Foster’s *The Dialectics of Ecology* certainly confronts the reader with very contradictory theses: a call for eco-socialism as the only alternative to the destruction of the planet that capitalism has no antidote against, and the indication of Chinese ‘State capitalism’ as the best model for a transition to a communist ecological civilization; the call for a new paradigm capable of bringing together philosophical reflexivity, social and cultural progress through bottom-up politics, and the attempt to make it fit into a revised version of Engels’ dialectics of nature with bias towards biologism; the criticism of capitalist propaganda, including on ecological policies, without bearing to fruition the criticism of ideology—one of the most important contribution of Western Marxists to leftist political praxis—as a more general instrument for the debunking of the various (economic and political) agendas behind dominant discourses, in the West as well as in the East. The engagement for the construction of shared cultural and scientific grounds for humanity, in the follow of Joseph Needham’s magisterial work, is difficult but also rewarding. To be sure, the construction of a ‘civilization’ is a more complex issue than a political program, no matter how virtuous the intentions are. Foster’s most important message comes when, leaving aside the apologetic and oppositional tone, he looks at the ideals that motivate his

engagement with ecology and justice in the first place and inspire visions of alternative futures: “In an ecosocialist society, where accumulation of capital is not the primary objective, it would often be those labour-intensive areas in the caring professions, education, the arts, and organic relations to the earth that would be considered most important and built into social planning” (Foster 2024, 271).

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Biography

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Debating Bogdanov's Proletarian Science: An Introduction to the Commentaries

Siyaveş Azeri

The publication in *Marxism & Sciences* of Alexander Bogdanov's 1918 texts on science and the working class (Şenalp and Bogdanov 2026) was intended not simply to make historically significant documents available in English, but also to invite renewed discussion of the problems they raise. Questions concerning the social organization of scientific labour, the class character of knowledge, specialization and the division of intellectual labour, the unity of the sciences, and the relation between scientific knowledge and collective social practice have hardly lost their significance. If anything, transformations in contemporary scientific production have given many of these questions renewed urgency.

The commentaries published here should be understood in this spirit. Their purpose is neither to establish an authoritative interpretation of Bogdanov nor to measure contemporary positions against a presumed Marxist orthodoxy. Bogdanov's work occupies a particularly contested place in the history of Marxism and the philosophy of science, and the renewed interest in his writings has itself generated divergent assessments of the theoretical and political significance of his project. The value of returning to such a body of work lies partly in allowing these disagreements to become explicit.

Joost Kircz and Sascha Freyberg approach Bogdanov's theses from substantially different directions. Kircz situates the proposal for proletarian science within the broader philosophical and organizational ambitions of Bogdanov's work and critically examines its claims concerning monism, specialization and the possibility of a unified science. Freyberg, while questioning aspects of this criticism, reconstructs the 1918 theses as a contribution to the politics and social organization of knowledge, asking what Bogdanov's concerns with the separation of scientific knowledge from collective labour, the fragmentation of scientific activity

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and the organization of experience might mean under contemporary conditions. Their disagreement consequently concerns not only particular propositions in Bogdanov but also the terms in which his project should be evaluated.

We regard such disagreement as part of the purpose of publishing historical materials in *Marxism & Sciences*. A historical text becomes intellectually productive when it can once again become an object of argument. Commentary, in this sense, is neither commemoration nor the application of ready-made contemporary judgments to the past. It is an attempt to reconstruct a problem closely enough that its unresolved dimensions can become visible again.

The two contributions therefore need not converge upon a common assessment of Bogdanov. Their differences instead open a broader field of questions: In what sense can science possess a class character? How should the social determination of scientific knowledge be understood? Does specialization represent fragmentation to be overcome, or a necessary differentiation of scientific activity? What could the unity of science mean? And what relation should obtain between scientific autonomy, collective control and the broader organization of social labour?

We hope to make the commentary format a space in which such disagreements can be developed without requiring their premature resolution. The aim is not to provide the last word on the texts published in the journal, but to enable them to acquire an intellectual afterlife through criticism, reconstruction and debate.

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Biography

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Bogdanov and the Discussion on Proletarian Science

Joost Kircz

ABSTRACT: There is a long tradition of the idea, or hope, that a substantial societal change, for instance, a socialist revolution, or a military coup, will mark the start of a novel, higher, level of culture in all aspects of life. This idea also forms the basis for the old concept of phases from primitive communism, via trade-based societies, to bourgeois capitalism, and ultimately to socialism, which would be a higher stage of a collaborative social society. Indeed, this scheme describes a dialectical spiral of ever more advanced societies for the benefit of humankind. In the discussions before, during, and after the October Revolution of 1917, the notion of socialist democracy, including education, arts, and sciences, was a prominent issue. In that constellation, Alexander Bogdanov defended the idea of two sciences: proletarian science versus bourgeois science. In this paper, I challenge his claim that his theories merge Marx and Mach into a higher level of understanding.

KEYWORDS: Alexander Bogdanov, proletarian science, bourgeois science, dialectics

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Introduction

In the previous issue of *Marxism & Sciences* issue #8, (Bogdanov 2026), we published Aleksandr Bogdanov's (Alexander Aleksandrovich Malinovsky (1873–1928)) fourteen theses, under the title 'Science and the Working Class,' that he wrote in advance of his presentation on 17 September 1918 to the First All-Russian Conference of the Proletkult organisations held in Moscow from 15–20 September 1918, as well as a report of this meeting, and an introduction by Örsan Şenalp.

In this paper, the issue at stake is Bogdanov's proposition of a proletarian science. Bogdanov stipulates, as we read in his texts, that a novel level of understanding of knowledge and society will be expressed in what he calls: proletarian science. The question is, can we consider this notion as a blueprint for the future, or are we dealing with an advanced romantic story?¹

A socialist goal is an optimistic expression of teleological emancipatory thinking. All utopian socialists envision some society in which the unity of humans and nature, the formal equivalence of individual humans, and the emancipation from bondage, oppression, and poverty, are abolished and replaced. The crucial questions are: replaced by what and how? Obviously, this 'what' cannot be defined. Only contours or boundary conditions can be defined.² So, in the pre-revolutionary period in Russia, the discussion on how to envision a future and how to organize the social-democratic movement was key. In particular, in the context of the split between the Menshevik and the Bolshevik fractions.³

The central difference between the utopians and the various Marxists is that Marxists try and develop a strategy for active change, based

1. In this paper, I use the word romantic for the idea of a collective and solidary society after a socialist revolution.

2. For instance: Robert Owen and his labour notes or Edward Bellamy's society without money. Socialist boundary conditions were defined by the famous Paris Commune (1871) the abolition of the death penalty, the abolition of military conscription, and the separation of church and state. And most importantly: elected officials were subject to immediate recall, and no public official would be paid more than the average wages of a skilled worker.

3. It is worth noting the (small) party schools organized by Bogdanov, Gorky, Lunacharsky, and Bazarov in an attempt to formulate a future party policy: 'Higher Social Democratic School of Propaganda and Agitation for Workers' in the summer of 1909 at Capri, and then a second one in 1910–1911 at Bologna, Italy. Trotsky, and Aleksandra Kollontai participated as a lecturer in Bologna, while others, like Kautsky and Luxemburg refused the 'Vperedists' (Forward group within the Bolshevik fraction) invitation.

on an analysis of how human society arrived to the present mode of capitalist production. Based on that understanding, ways forward are discussed. Given the enormous successes of the sciences in the nineteenth century, in opposition to utopian thinking, Marxism was coined scientific socialism by Friedrich Engels in his *Socialism: Utopian and Scientific*.

To accomplish this act of universal emancipation is the historical mission of the modern proletariat. To thoroughly comprehend the historical conditions and thus the very nature of this act, to impart to the now oppressed proletarian class a full knowledge of the conditions and of the meaning of the momentous act it is called upon to accomplish, this is the task of the theoretical expression of the proletarian movement, scientific Socialism. (Engels 1892, 325).

The key understandings here are ‘historical materialism,’ which stipulates that there is, as a given basis a ‘world’: nature in development, with and without humans, and the notion of dialectics. Humans are both a consequence of nature as well as changing agents of nature. Humans try to grasp their environment, their own capabilities, weaknesses, and behaviour, as a result, and in interaction with the material nature of which they are part. This defines dialectics as the driving force for the sciences in their broadest understanding. In a Marxist historical materialist framework, humans constantly, with many ups and downs, develop sciences, that is to say, models that are internally coherent and in concordance with our experience of nature. These models, or theories, don’t progress smoothly by themselves, but their developments and applications are expressions of the actual socio-economic situation. The how to actively change society is closely related to our knowledge of the social changes until today, the developments of theories and technologies, as well as the level of education of the people. In contradistinction to Marxist’s stepwise—discontinuous—developments, Bogdanov defends the drive to equilibrium and smooth controlled changes.

The significance of Bogdanov’s texts on proletarian science lies also in the fact that Bogdanov was a leading Bolshevik theoretician who disputed with Plekhanov and Lenin—both of whom accused him of being an anti-Marxist. Bogdanov was also a prominent activist and medical doctor, famous for his research in blood transfusion, which became a hot subject after the bloodbath of World War I, but blood transfusion was

also seen as a method of rejuvenation (Krementsov 2011).⁴ He was well-versed in the natural and social sciences of his time and wrote extensively on psychiatry and psychoenergetics (see e.g.: Bogdanov 2020, book 2, chapter 5. ‘Psychical Selection’).

Below, I will first set the stage with a short discussion on Bogdanov’s mature thinking, coined tektology, which is the backbone of his idea of proletarian science. Then I discuss the notion of a ‘cultural revolution’⁵ and finish with some more technical epistemological issues of Bogdanov’s notion of ‘proletarian science,’ in which the key element is smooth developments in a dynamical equilibrium environment. This in contradistinction to Hegel’s and Marxian’s analyses of breaks, jumps, and transcendences in human knowledge and social organisation.

Tektology as a theory of everything

Bogdanov adheres to the positivism of the scientist Ernst Mach (1838–1916) and the philosopher Richard Avenarius (1843–1896). Bogdanov stipulates, based on his ‘empiricist positivist’ approach, and his belief that the ‘rules’ of nature as well as for human’s thinking can be fused, that all and everything will merge into one ‘empiriomonist’ system. He first tried to substantiate this unification with his adherence to energetics; the idea that energy is the basic object of everything.⁶ In this process, a fluid, or dynamical equilibrium, is taken as carrier of change, in contradistinction to the Hegelian and Marxist notion of a dialectical progress of oppositions and transcendence. It is on this point that Lenin forcefully attacks Bogdanov (Lenin 1908). Bogdanov underwrites the Marxist analysis that the working class represents that societal force which is (in principle) able to change society via a socialist revolution. But then he goes his own way, in stipulating that ultimately there exists

4. An acerbic short story on the idea of exchanging body parts between subjects is written by the physician and novelist Mikhail Bulgakov, in his *The heart of a dog* (1925). Here the exchange of the testicles of a man to a dog, does not lead to rejuvenation as expected, but the exchange of the pituitary gland, does change the dog into a man and after chaos, the reverse works as well. The work can be seen as a critique on the overzealous post-revolutionary policy of forced cultural change.

5. Although Bogdanov does not use the term ‘cultural revolution,’ in the literature on this period the term is standard (Bogdanov 2022, XVII), (Joravsky 1961).

6. For a longer discussion on the relation with Mach and the polemic with Lenin, see my study: ‘Walking on the beach of Helgoland with Alexander, Carlo, and Werner Arguing about Marxism versus Positivism’ on the suggestion of the popular theoretical physicist Carlo Rovelli that his interpretation of quantum mechanics dovetails with Bogdanov’s thinking (Kircz 2026).

an all-encompassing novel ‘science,’ called tektology, which shall be implemented after a socialist revolution by the working class.

This paper is not the place for a deep study on tektology and the notion that this theory is a precursor of system theories, cybernetics, and operations research, though indeed these theories have many things in common. They all refrain from investigating the material grounding of life, and pose that the only relevant understanding of life and society is by researching the mutual organizational rules.

In the context of this paper, it is important to note that I deal with Bogdanov’s idea of a proletarian science and not with the ‘cybernetics’ discussions on the organization of the economy and the state, in which Nikolai Ivanovich Bukharin (1888–1938) played a trailblazers role. For the ground-breaking study on that aspect, I refer to (Susiluoto 1982) and a recent study (Rispoli 2015).

The central ideas can be found in volume one of Bogdanov’s book on tektology, written between 1913 and 1917 (Bogdanov 1996). Bogdanov, originally followed Wilhelm Ostwald’s ‘Energetics,’ the idea that nature has fluid and energy as the fundamental substrate (Ostwald 1895).⁷ When this theory floundered with the experimental confirmation of the existence of (non-continuous) atoms, Bogdanov made the next step in the notion of an encompassing theory by shifting from material objects towards operational organisational ones.

All human activities are essentially either organizational or deorganizational. This means that human activity, be it technical, social cognitive, or aesthetic, may be regarded as the material of organizational experience, and investigated from the organizational point of view. (Bogdanov 1996, 1).

Unfortunately, in his book, we find few formal arguments for this axiomatic statement, but tons of examples from all sectors of life, economy, and science to underwrite the obviousness of his starting point of view.

Therefore... the task is to *co-organize working power and the means of production* into a system functioning according to a plan—the organization of

7. “A. Lavoisier produced a great scientific revolution. The practical principles of machine production, scientifically formulated by physicists, have become the laws of thermodynamics and then of general energetics; all the modern unification of physical and chemical sciences is based on it. Astronomy was transformed by the principles of mechanics; physiology came to be an exact science through the methods of physics and chemistry. Psychology profoundly changed its character due to the introduction of the methods of physiology and general biology, which also contribute to its scientific precision” (Bogdanov 1996, 41).

people and things into a rational unity. Generally, the whole process of human struggle with nature, of the conquest and exploitation of spontaneous natural forces, is nothing other than the process of *organizing the world* for humanity for its survival and development. This is the meaning, the objective sense of human work (idem, 2).

The organizational character of cognition and of thought in general is even more evident. Cognition co-ordinates the facts of experience into internally consistent groupings—thoughts and systems of thoughts, i.e. theories, doctrines, sciences, etc.; in other words, its function is to organize our experience. We see that human activity from its simplest to its most complex forms might be reduced to organizing processes. And yet we are left with destructive activity. On direct and isolated consideration its function is *de-organizing*. However, a deeper analysis shows that even this form is an outcome of competition between different *organizing* processes (idem, 3).

We clearly read in his book a convolution of Mach's notions of fundamental 'elements' and the notion of equilibrium seeking from Ostwald and other chemists in their time-reversible equilibrium chemistry.⁸

In his preface to *Tektology*, Peter Dudley summarizes Bogdanov clearly:

Bogdanov's starting point was that the world exists entirely as *organization*—this is its first similarity with systems theory. This begs the question "If the world is *organization*, what is organized?" Bogdanov gives two answers, reflecting the two meanings we give to the word. Complexes—the results of organization—are comprised of elements *and their inter-relationships*—specific elements are organized into specific complexes by virtue of their specific inter-relationships. Thus, in the first sense of the word, *elements* are organized, they are subject to the *process* of organization. Complexes, however, display the *quality of organizedness*, they are the *outcomes* of the process of organization, and are, therefore, organized in the second sense of the word. Thus, for Bogdanov, the world consisted of complexes which, in their turn, consisted of elements inter-related in specific ways. This leads to the ontological questions "What are elements?", and, "What are inter-relationships?" The first question Bogdanov answers in the following manner: "The world of experience, both physical and psychic, is entirely composed of *elements*—spatial, tactile, acoustical, thermal, etc. Combinations of these elements make up different 'phenomena,' both psychic and physical. If the law of causality, inferred for all these phenomena—i.e. for the world of

8. On many occasions Bogdanov's refers to the principle of the French chemist Henry Louis Le Chatelier (1850–1936), which stipulates: If the equilibrium of a system is disturbed by a change in one or more of the determining factors (as temperature, pressure, or concentration) the system tends to adjust itself to a new equilibrium by counteracting as far as possible the effect of the change.

elements connected by various relations—is applicable to ‘things in themselves’ serving as an *immediate link* between ‘phenomena’ and ‘things,’ it is clear that ‘phenomena’ and ‘things in themselves’ are of the *same nature*. ‘Things in themselves’ would then represent a direct continuation of the world of *empirical elements* and in fact would be only *combinations of elements*” (Bogdanov 1996, xxxv).

And

Bogdanov considers the world to consist of *complexes* and that these complexes are made up of *elements* and their *inter-relationships*. Complexes, elements and inter-relationships as objects of experience are part of a single causal chain which connects the mental world of representations to the external world of “things in themselves.” Elements, complexes and interrelationships are conventional entities which we use in order to arrange our experience of the world and which can display, enhance or reduce the qualities of *organizedness* (positive) *neutrality* or *deorganizedness* (negative) in relation to specific goals (idem, xxxix).

In Bogdanov’s own words:

But all sciences call their simplest elements “elements”; combinations of these have many different names: in chemistry—combinations, in biology—organisms, colonies, species, etc., in sociology—groups, classes, etc. Mach has nothing to do with these; he deals with a *special* decomposition of experience into its *sensual elements* and complexes correlating to *these* special elements (idem, 310).

Here, we witness an attempt to, on the one hand, pose elementary units and their combinations, just like atomic elements and molecules; on the other hand, this atomism is opposed to the fluidity of their mutual relationships. These relations do not compose—even not heuristically—a system, but remain a list of tendencies in an organizational context:

Explaining organizational forms by tektology aims at their *practical mastery* rather than contemplating their unity. (idem, 104).

Bogdanov sees this as an expression of Marx’s dictum of not interpreting the world, but to change it. Obviously, this is in contradistinction to the dialectical notions of the unity of oppositions and the negation of the negation. Bogdanov names relations such as the ‘universality’ of ‘conjugation’ the joining together of elements of complexes of elements, the ‘resistance’ of complexes to join without ‘losses,’ the ‘chain connection’ in which mainly their form changes, ‘direction’ of activeness, ‘(dis)ingression’ (a whole is practically *greater/less* than the sum of its parts), the ‘separateness’ of complexes (so, “*without exception any interruption of*

experience can be understood as a result of the disingression of continuities”), and so on.

All this novel semantics is extensively authenticated by an avalanche of examples from different fields, which are discussed in chapter two: ‘Basic concepts and methods,’ and chapter three: ‘Basic organizational mechanisms.’ So far, so good, but nowhere is a clear argument given for what the essential advance is of this semantics in contradistinction to standard natural science lingo or Marxist dialectical notions.

The central tension becomes the statement that, on the one hand, we declare a kind of ‘what you see is what you get’: reality is what we experience, void of alienation due to the current hegemonic culture, and on the other hand, the parachuting of a novel approach out of the blue, whose substantiation demands the pre-revolutionary consciousness of the working class.⁹

The upshot then is a strange retreat from systematisation of interactive materiality, whilst on the abstract ‘scientific’ level it is declared that everything (all reality) is organisational.

Also, clearly as a rebuttal to, e.g., Lenin’s (Lenin 1908) opinion that Bogdanov is an idealist:

Simply here is no room for matter and spirit. A science is restricted by *scientific* limits and “things in themselves” are philosophical concepts. Whether I am right in supposing that, besides all else, tektology eliminates philosophy in general—is another question. But it is clear that if tektology is a science then it is *obliged* to study phenomena and their connexion and regularity leaving all else to philosophy. Tektology does not refute these philosophical concepts but there is no room for these in a solution of *its* tasks (idem, 311).

So, Bogdanov not only expands Mach’s sensory positivism, but also creates a novel positivist science in which everything can be combined in an organizational model based on direct human experiences. This then becomes a cornerstone of his idea that in a socialist environment, the workers’ collective experiences and solidarity-based creativity will express themselves in a new—tektological—final world view.

9. See also (Potamias 2026): “In essence, Bogdanov argues that Reason is not the regulatory principle of the acts of the understanding exclusively, as Kant maintains, but also the organizing principle of reality itself.”

One, two, or more Sciences?

The central idea behind Bogdanov's proposal for a proletarian science is that, due to the capitalist mode of production and its intrinsic competition between everybody and everything else, all knowledge and technology are fragmented. This he calls, as we read in the theses, bourgeois science.¹⁰ In opposition to this situation, Bogdanov states that in a socialist society, competition is transcended into a situation in which people, comradely and creatively, work together. This will bridge the gulf between the various fields of theoretical and applied knowledge and will introduce a real universal knowledge system encompassing all human research and investigations; this he named 'proletarian science'.^{11,12}

Or, as my colleague Onur Dora Öztürk phrases it succinctly:¹³

Bogdanov locates the social determination of science at the level of the organization of scientific work—who does it, how it is funded, in whose interest—but never at the level of the internal form-determination of scientific knowledge itself. He sees that knowledge is fragmented under capitalism, and he correctly connects this to the social division of labour; what he cannot see is that each fragmented science is constituted through an abstraction that produces its object, enables its productivity, and simultaneously conceals its own operation—that physics experiences temporal symmetry not as a product of its own constitutive abstraction but as a “law of nature,” that economics experiences price not as a form of appearance of value but as an immediate datum of reality. This self-concealment—the fetishist structure of knowledge—is invisible to Bogdanov because his Machian starting point forecloses the question from the outset: if reality is nothing but sensory elements and their organizational relations, if there is no distinction between

10. See e.g.: # 2: “The current dominant science, in its various branches, is *bourgeois* science: it has been developed, for the most part, by representatives of the bourgeois intelligentsia, who have concentrated in it the material experience that was available to the bourgeois classes; who have understood it and interpreted it from the point of view of these classes; and who have organized the processes and practices to which these classes were accustomed, which were characteristic of them. As a result, this science has served and continues to serve as an instrument of the bourgeois structuring of society...,” and #7: “Bourgeois science, with its laborious, obscure and complicated professional language is scarcely accessible to the working class. Furthermore, in so far as it has become a commodity in capitalist society, it sells at a high price.”

11. See for this discussion the fourteen theses and the speech for the 1918 conference, the previous issue of this journal (Bogdanov 2026). See also part two: ‘new world’ of (Bogdanov 2022).

12. In the Russian title of Bogdanov's theses, *Nauka i rabochiy klass*, the word *Nauka* is much wider than the English *Science* and more like the German *Wissenschaft*. It is about the totality of knowledge.

13. Personal communication.

appearance and form-determination, then there is nothing beneath the surface of scientific practice to interrogate.

Implicit in Bogdanov's thinking is the idea that, given the wholeness of the universe of which our planet is part, and further down, humanity as part of earthly nature, there is a universal regulatory system, which can and will be understood by humans, given the right societal structure: a universe-wide monism, as the ultimate goal for human knowledge. In the sense that we can speak of a universal science. Only due to the historical path to capitalism, this universal science can and will rule society in the next societal phase: socialism. Bogdanov never discusses the tedious problem of the duration of a post-revolutionary society, sighing under the weight of old thoughts and habits; the so-called transition society problem.

Bogdanov develops the idea of proletarian science by starting from a strict distinction between bourgeois and proletarian science. This is interesting because, within a historical materialist worldview, if all human successful achievements are shaped by social and historical conditions; then also science should be shaped by these conditions. Hence, and in line with Bogdanov's thinking, his proletarian science must be the science of the socialist future. But we have to take into account the fact that some objects—like kidneys or the finite velocity of light—seem to exist independently of the social context.¹⁴ Both these two last objects are epistemologically different within different cultures, but their ontological characteristics (e.g., filtering the blood) are fixed.¹⁵ In this respect, it goes without saying that this conundrum, the creation of a theory that includes different fundamental objects as well as their interaction, can only be scrutinized if we allow discussions on the ontology of scientific notions.¹⁶ In Bogdanov's positivist thinking, following Mach,

14. Note that advanced ideas can be timeless. The discussions on atomism or the heliocentricity of our planetary system are millennia old. The issue is: when and in what society such propositions find a fertile ground to be embraced and developed further.

15. Even based on the experimentally found finiteness of the velocity of light; the fixed and maximal physical velocity is taken as a universal 'principle' in the Einsteinian theory of special relativity. This acceptance is due to the enormous success and coherence of its applications, and so now it is taken for granted. Note that in Einstein's theory of gravity (aka general theory of relativity), this is not necessarily the case.

16. This should be seen as a challenge to the Kantian *a priori*, were notions (such as place and time) are taken as fundamentals, which are simply given. Here we enter the debates of the Neo-Kantian schools in their struggle to deal with the scientific revolutions in the beginning of the 20th century: the merger of the notions of space and time into one four dimensional space-time, and the challenge of causality in quantum mechanics.

the question of ontology is not present, because we only deal with human bodily experiences (expressed in the accepted *a priori* given notions). A consequence for Bogdanov is that we prioritise assumed and knowable universal relations over material objects.

The modern discussion about which socio-economic conditions enable scientific results to emerge and be applied (!) was kick-started in the 1930s with (Hessen 2009, 2020 [1930]), who placed Newtonian mechanics as an expression of the emerging capitalist mode of production,¹⁷ leading to the prolific field of sociology of science. It is obvious that the study of where science is going, under the influence of political and technological changes, will remain perennially important. Does a society direct science as a human tool only, which is to say, do sciences have a kind of immanency and some aspects receive priority in a certain situation (e.g., renewable energy, or space exploration)? Or do we deal with ever novel sciences and concepts in novel historical settings?¹⁸ And what are the interactions between these two poles? This difficult question is part of the studies in the history of science. As we know a great number of theories, including their specific semantics, which do not ‘overlap’ isomorphic with each other, but describe the same phenomena sufficiently well for practical purposes.

In every ‘socio-political major change/revolution,’ we witness the start of a novel phase in cultural and scientific life. The ‘old’ is consigned to the dustbin, while a ‘new’ and assumedly brighter, more dynamic, and better future is in the works. New rulers become new gods, and history is restarted. In the appendix, some (negative) examples are given.

Though, the examples given in the appendix may be dangerous and bizarre, from a socialist standpoint, the question on the table is: what is the role of a science in changing the trajectory of society towards a sincere democratic society without repression, where everybody works according to their capabilities and whose existence is guaranteed according to their needs, and antagonistically, how are the sciences exploited to defend the present hegemonic culture. How do we induce change in an authoritarian society, in which the hegemonic culture is ingrained in the authoritarian mental culture of the population? This question is one of the central tenets of socialist politics and has been a challenge ever since the time of Marx and Engels. We experience the dictatorial route

17. Another example is the question whether can see quantum mechanics as a product of the chaotic situation in Germany in the 1920s/1930s (Forman 2011).

18. For example, only in the 19th century the concepts of force and energy were finely detached, as two different concepts.

of ‘imposed perceived emancipation’ in Stalinist culture and now in North Korea in its Kimilsungism–Kimjongilism: “the only guiding idea of the party.”¹⁹ Indeed, we have to fight armed and ideological oppression. What concepts are used in oppression, and what concepts do we have to develop to fight oppression?²⁰

How does a new culture emerge?

Before we start the battle, we have to understand the distorted consciousness of the suppressed labouring classes, vis-à-vis their physical and mental needs and capabilities of self-emancipation and self-expression. Socialists consider the working class as the engine for (self) emancipation, but does it know? This teleological political goal demands deep studies, not only of the machinery of societal repression, but more fundamentally, of the tensions between the human drive for development and the angst of oppression, social loneliness, and one’s own limited capabilities. In that sense, we can follow F. Engels in saying that socialism is an (emancipatory) science in itself.

Alienation

Before we can build a new social science (even without the Bogdanovian ambitious monist features), we have to take stock of what we know in the different scientific disciplines, of how this knowledge came about, and how this knowledge is ingrained in the people’s minds, presently under capitalist tutelage. In Marxian jargon, we speak of alienation and reification of the working class: *Verdinglichung*, the reduction of human relations to exchangeable objects on the market,²¹ as the typical way of present-day thinking.²²

However, in the course of history, the composition of the working class, as well as its self-consciousness, change. This means that societal change cannot be achieved through pure agitation and propaganda, but must also be connected to ‘The Zone of Proximal Development,’ a central

19. See: <http://www.kass.org.kp/index.php/course/view/207?lang=eng>.

20. In war situations, “Every Communist must grasp the truth, Political power grows out of the barrel of a gun” to quote Mao at the beginning of the Chinese revolutionary war in 1938 (Mao 1967, 58).

21. See: e.g., (Lukács 1988, in particular the chapters: ‘Class Consciousness’ pp. 46–82 (March 1920), and ‘Reification (*Verdinglichung*) and the Consciousness of the Proletariat,’ pp. 83–222 (December 1922)), (Korsch 1923), and (Mandel 2022 [1970]).

22. My favourite phrases are, if an American likes you, he might say “I buy you a coffee.” If the person disagree with you the answer is “I don’t buy this from you”: money as measure of affection.

understanding developed by the psychologist Lev Vygotsky (1896–1934) (Vygotsky 1978, 84 ff). Can we, prefiguratively, start building a novel culture today, as was exemplified by the many socialist and anarchist educational initiatives, from the late nineteenth century onwards, or do we have to wait for the transition period after a successful political revolution? As propaganda is not enough, we have to address the mental state of the population when we discuss abstract (or in Ilyenkovian terms Ideal) notions such as equality, democracy, value, change, or truth. As Azeri (2019, 14) writes:

Thinking is not a “mental” processing of propositions and/or signs in one’s head but is the ideal reconstruction of reality and the essential interconnections between phenomena with the use of signs, symbols, and concepts. Thinking is a creative activity in that it involves both production and transformation of new ideational tools and concepts and transformation of external reality via producing tools for such transformative activity. The reality of thinking is in its outwardness.

Concept formation is embedded in the actual societal situation. The meaning of the notion ‘enemy of the people’ in the Stalinist culture of the great purges, or the notion ‘woke’ in Trumpian speech, is the reduction of an authoritarian ideology to ‘click bites’ or ‘dog whistles,’ to use fashionable terms, to attack political adversaries. Hence, in a break with the hegemonic culture during and after a socialist revolution, a massive educational endeavour is needed. This was the task of the young Soviet state, not only towards the small proletariat, but even more towards the vast illiterate peasant population. In the young republic, the discussions were intense in this transition society that tried to shake off the old authoritarian and Orthodox culture, in the ambitious political program to ‘emancipate’ the population, not only in their working and property conditions, but also in their political and cultural self-consciousness. The breadth of this process was widely underestimated.

It is a most important fact that all socialist currents since the late nineteenth century have held that the advancement of literacy, learning, and debating are key activities. Which brings us back to the fundamental discussion before, during, and after the Bolshevik revolution on the mixed approaches towards education (including literacy), religion (including anticlericalism), and self-organisation (excluding egocentrism). This dialectical problem is only partly a ‘which comes first’ issue, although all emancipatory upheavals show that organisation, based on

emancipatory ideas, is a prerequisite of a successful social transformation. In our situation, this means moving from a capitalist mode of production—based on the ever-increasing expropriation of monetised labour power (aka profit) by a few owners of the means of production—to a more equal, i.e., socialist mode of production, the features of which will remain a work in progress.

Repression demands, and hence generates, stupid, frightened, and subordinated people. In its most simplified form, we might say that the Bolshevik policy, Lenin style, emphasised the organisational aspects of party building as a sheer precondition for survival. This position needs to be confronted from a dialectical point of view with regard to education as a social force. However, in the development of the USSR, the exaggerated primacy of the party replaced one set of rulers with another and kept the masses politically disempowered. This occurred despite massive successful investments in education.²³

Proletkult

The need for a cultural revolution was the drive behind the Proletkult movement²⁴ (in which Bogdanov played a central role). This large, decentralized, independent mass cultural movement was a unique phenomenon in the early history of Soviet Russia. (Mally 1990) discusses in detail the enthusiastic but chaotic short-lived movement, including all day-to-day quarrels as well as its arguments with its financier: The People's Commissariat for Education.

In the process of (self) education and the establishment of a new culture and morals, changes are slow. Old 'certainties,' like religion, are tough, and were severely underestimated as is proven today by the influence of the Orthodox Church under the Putin regime.

In the young Soviet Union, we saw a strong technological utopianism (Josephson 2010; Palmer 2006), in the hope that modern technologies would promote and enhance cultural emancipation. In a perverse, contradictory way, we witness this utopia today in the bizarre claims of so-

23. For the early years of the USSR (see Fitzpatrick 1970), for a study of the first generation (bureaucratic) engineers (see Bailes 1978).

24. Proletkult as a movement took shape in 1917. Proletkult is an acronym for 'Proletarian cultural-educational organizations' (*proletarskie kul'turno-prosvetitel'nye organizatsii*). The increasingly internal problems and the sour interaction between Proletkult as an organisation of workers education with an accent on creativity and The People's Commissariat for Education (or Narkompros) under the commissar Anatoly Vasilyevich Lunacharsky (1875–1933, and brother-in-law of Bogdanov), is well describe in the literature e.g., (Fitzpatrick 1970, 1988), (Sochor 1988), and (Mally 1990).

called artificial intelligence, data-driven robotics, quantum computing, mathematical models—pedantically called neural-networks— and the like. Indeed, a negation of the emancipatory role of tools, towards a profit-driven, oppressive society.

Another approach for advancing a novel culture before and during a revolution is the empiricalmonist line of thought of Bogdanov, leading to his tektology, which tips the balance between power and consciousness more toward ‘proletarian consciousness and culture’ as a precondition for a successful change of the societal order.

At this point, we can recall Leon Trotsky’s famous anti-Stalinist pamphlet of 1938, on the entanglement of means and goals: *Their Morals and Ours: In memory of Leon Sedov* (Trotsky 1938). In this important work, written in memory of his son, who most presumably was killed by the (USSR secret service) NKVD, Trotsky attacks the Jesuit notion that ‘the end justifies the means.’²⁵ As Trotsky stipulates in his characteristic dialectical style:

A means can be justified only by its end. But the end in its turn needs to be justified. From the Marxist point of view, which expresses the historical interests of the proletariat, the end is justified if it leads to increasing the power of man over nature and to the abolition of the power of man over man.

And,

Problems of revolutionary morality are fused with the problems of revolutionary strategy and tactics. The living experience of the movement under the clarification of theory provides the correct answer to these problems. Dialectic materialism does not know dualism between means and ends. The end flows naturally from the historical movement. Organically, the means are subordinated to the end.

Tools are not neutral, and organisational decisions have their own dynamics. In a way, we can grant Bogdanov the correctness of his idea that ‘bourgeois’ science can only produce the continuation of bourgeois culture, and the goal of socialist society needs other means. In that sense,

25. He equates this notion with Stalin’s policies against his enemies, exemplified by the criminal ‘Moscow trials’ of those days, in which a great number of old Bolsheviks were sentenced to concentration camps (the Gulag) or simply shot. This happened at the same time as the Soviet Union was declared to have already become a socialist state, in its new 1936 constitution. This was a dictatorial declaration (or in Russian *ukase*) by *fiat* that a novel era of prosperity had been reached without mediating the deplorable situation the union was in.

Bogdanov's teleological preview of a new society in his sci-fi novels dovetails with his tektological tools. In this view, tektology is 'subordinated' to the envisioned future.²⁶

Today, we see in the social sciences the shift towards purely data-driven statistics, methods that allow for mass surveillance and repression. Which type of statistics empowers people instead of repressing? The discussion on the table is more than the positive applications of the sciences towards another goal, but we must dig deep into the basic notions beyond positivism.

Bogdanov's vision

Bogdanov's 'Science and the Working Class' (2026), 1918 theses, address many related themes. The texts are a concentration of the ideas Bogdanov had been developing since his early books: *A Short Course in Economic Science* (1897), *Basic Elements of Historical View of Nature* (1899), and *Cognition from a Historical Point of View* (1901). These works represent an early attempt to develop a systematic 'Marxist' theory of the development of ideology, culture, and science alongside the development of social formation and the economic base. The culmination of which is his non-Marxist organisational system theory: tektology. As Bogdanov stipulates:

The nature of science is to be organised collective experience of humanity and the instrument of the organisation of the life of society. The ruling science in its various branches, is bourgeois science: it has worked on all representatives of the bourgeois intelligentsia.

Here we enter—as suggested already above—the differences between the role of science in a particular societal setting and the very nature of science, beyond the simplistic notion that a theory is fine as long as it describes the phenomena.

This aspect of the role of science is reintroduced in John Desmond Bernal's *The Social Function of Science* (Bernal 1939), in which he analyses the fact that scientists have become wage earners like most people and need trade unions.²⁷ After the student revolts in the late 1960s, this notion became common knowledge and staple food for sociologists of science. Bogdanov provides the first systematic expression of this line of theorisation. However, we now find ourselves in a compelling situation

26. See also: (Ervin 2026), and below.

27. We will not dwell here on Bernal's strange political trajectory and his lifelong adherence to Stalinist Diamat. (Bernal 1953).

where we must formulate a trajectory of non- or even anti-bourgeois science. Perhaps we might have been lethargic in the search for a different way of ‘doing science,’ built on a more comradely and collectivist basis, one that would go beyond ill-defined platitudes like ‘democratic’ or ‘environmentally friendly.’ But note that being a ‘science worker’ in the process of creating surplus value for a capitalist employer is different from the fundamental question of whether we can speak of bourgeois or proletarian science.²⁸ Dealing with this issue is also one of the main tasks of our journal *Marxism and Sciences*.

We now know that this cannot be done by declaration or by ideological beliefs, as experienced in the early days of USSR with its philosophical battles between the ‘Dialecticians’ and the ‘Mechanists,’ (Graham 1987, chap. 2; Joravsky 1961; Yakhot 2012) or the fights against quantum mechanics, relativity theory, or the notion of the infinite in mathematics (Graham and Kantor 2009).

After cybernetics was conceived in the West, the impact of cybernetics and systems theory arrived back in the USSR in the 1950s. These new sciences too—to which Bogdanov’s *Tektology* is now seen as a predecessor—were in the USSR condemned as bourgeois pseudo-sciences and rejected.²⁹ But later, since the late 1950s, cybernetics became embraced as a possible way out of the stalled ‘plan economy’ (Graham 1987, chap. 8; Susiluoto 1982; Rispoli 2015). This turn was followed in the satellite states such as the DDR (Klaus 1965).

In a later phase of Stalinism, the notion of bourgeois versus proletarian science was used as a catchphrase for purges. It is here that we are confronted with the opposition between Bogdanov’s call for a universal proletarian science and the misuse of the term in the darkest times of Stalinism.³⁰ The most known example is the crisis in biology where the anti-genetics, misplaced named ‘proletarian science,’ was pushed by Trofim Denisovich Lysenko (1898–1976).³¹ In this period, we had the

28. Cf. the battles in the infamous science wars in the 1990s between the ‘realists’ and the ‘post-modernist.’

29. Bogdanov’s legacy at the time was still in the oblivion into which it was thrown by the Stalinist regime. It took decades for Bogdanov’s *tektology* to be recognized as the predecessor to these sciences, both in the Soviet Union and in the West. (Graham 1987, chap. 8).

30. In his account of Stalinist ‘proletarian sciences’ exemplified in the case of Lysenko, (Lecourt 1977, appendix: Bogdanov, mirror of the Soviet intelligentsia pp. 137–162) deployed a distorted reading of Bogdanov as the true intellectual source of Stalinism. This did significant damage to the already buried legacy of Bogdanov.

31. For a study on the scientific merits of Lysenko’s early partly successful agricultural work and the ideological battles on genetics see (Roll-Hansen 2005).

‘Zhdanov Doctrine,’ named after Andrei Aleksandrovich Zhdanov (1896–1948), an executor of a strict cultural policy against perceived bourgeois nationalism in all forms of arts and science.

Equilibrium versus jumps and breaks

As mentioned above, throughout Bogdanov’s tektological thinking, we are confronted with his notion of equilibrium and smooth development (Bogdanov 2020). In Bogdanov’s vision, there is no final equilibrium, and developments remain open-ended, though as a well-managed, smooth development. But Bogdanov also suggests that this will only happen after a socialist revolution, because it is at odds with bourgeois science. As a kind of preview, he explicitly tried to theorise scientific reconceptualization as early as the 1900s, for example, the emergence of relativity theory and quantum mechanics, and the progress in psychology, but it remains on a superficial propagandistic level.³²

Just to quote from the theses:

§ 11: ... A significant degree of simplification will be achieved by the very reinterpretation of science from the point of view of collective labour, since this will liberate science from the abstract fetishism which, in the old mathematics, mechanics, logic, and other sciences, frequently resulted in so many pseudo-problems and unnecessary stratagems being presented as “evidence.”

§ 12: ... The dissemination of knowledge and of scientific work must be organized in parallel. The two processes are inextricably linked. The means for actually achieving these ends will be the Workers’ University and the Workers’ Encyclopaedia.

§ 14: ... a Workers’ Encyclopaedia, which should not be a mere compilation of the findings of science, but a complete, harmoniously organized system of explanation of the methods of practice and cognition and of the vital links between them.

The central issue for Bogdanov is the necessary fusion of all sciences. And this in a simplified form, which is, in principle, impossible as new

32. For instance in his papers on relativity theory, he tries to prove his organisational point based on a complete lack of understanding the fundamental features of this theory. Which is not a sin, as most people, including many physicists struggled with the notion ‘relativity’ at the time of Bogdanov’s writing. (Bogdanov 2023a, 2023b). It would have been much better if the theory had used the term ‘invariants.’ The projections of these invariants on metric coordinates are indeed relative among each other. See for a discussion on an object and its coordination (Kircz 2023).

terms emerge constantly in the course of research. What to think of quantum-entanglement, post-traumatic stress syndrome, bipolar spectrum (quite some shades), and so on. Only in well-established applied fields are simplified terms common.³³

His last idea sounds similar to the programme of the logical positivists' drive for a unified science in their 'International Encyclopedia of Unified Science' project. Both ideas stem from the same origin: the French Encyclopaedists (Diderot and d'Alembert), who influenced the French Enlightenment and the revolution that followed (Neurath 1938).

His aim to transcend the various disciplines, typical for bourgeois culture, into a homogenous science, he already explicated in his Sci-Fi novel *Engineer Menni* (1913). This striving towards an equilibrium situation, is in opposition to the Marxist dialectical notion of ever-opposing ideas in a creative process of ever-increasing distinct levels of human knowledge.

However, Bogdanov's efforts to reach with tektology a 'science-beyond-philosophy' were an attempt to transcend the opposition between his own non-dialectical, positivist Empiriomonism and the dialectic of Marxism, by dropping the dialectics and keeping some of the historical materialist components.

In the legacy of Marx, Lenin, and Trotsky, dialectics is seen as the fundamental understanding for grasping how changing levels in society (including a socialist revolution) succeed each other, as well as how human thinking advances to ever novel ways of comprehending nature. In particular this deals with the difficult issue of quantity < - > quality transitions (Kircz and van der Linden 2021).³⁴

Some epistemological discussion points on Bogdanov's thinking

In human culture over the ages, we address the question of understanding the dynamics (or working) of the world as part of the universe, contained in a single overarching theory. This unreachable holistic goal of the 'knowability' of everything is expressed in (mainly monotheistic) religions (one GOD), and on the other end of human thinking in so-called

33. Take the popular simple equation $E = MC^2$: Energy equals mass times the square of the velocity of light. But, the 'signs' here are not simple notions. Here, energy is not a simple number (a scalar), but—in technical terms—the time component of the four dimensional energy-momentum tensor in space-time. Quite a different animal if we look closer. Simplicity does not always grant insight.

34. See for an angry attack on Bogdanov's denial of dialectics (Ilyenkov 1982, in particular chapter III).

Theories of Everything (TOE) in theoretical physics (preferably as an aesthetic, simple symbolic expression of the type: **E**(verything) **equals** **A**(ll) there is). Obviously, the sign **E**, as well as the sign **A** must be well-defined and understood to make this tautology logically true.

For Marxists, the attack on this issue is the notion of dialectical thinking.³⁵ Human civilization developed, historically, the notion of dialectics, in function of the socio-historical, human, scientific progress. In the Marxist tradition, the Hegelian form of dialectics is re-grounded in this very historicity of human activity and thinking as an expression of the human body as part of nature.

Traditionally, we simplify this into three separate expressions (quantity changes to quality, opposites interpenetrate, and negation of negation), which, for practical purposes, get the name ‘laws.’ Which is strange as these ‘laws’ are closely entangled.³⁶

In his introduction to the notebooks of Trotsky, the historian Philip Pomper makes the following comment:

... that it is impossible to conceive of a dialectical approach without a dynamic principle of *conflict*. ... A dialectical approach also implies a *systemic* principle, the idea of the self-generating and self-developing superordinate whole with subordinated parts; and an *epigenetic* principle, which governs development and assures the transmission of progressive elements from stage to stage of the developing system through *Aufhebung* (sublation). (Trotsky 1986, 57).

Pomper assigns to Trotsky “the notion of the transition from quantity into quality clearly signified commitment to the progressive character of catastrophic change in both nature and society.” Lenin emphasizes ‘the interpenetration of opposites.’ Whilst Bukharin (once a student of Bogdanov) continually emphasized the systemic idea of equilibrium.

Bogdanov, in his development, makes an interesting step away from being a strong defender of Marxist historical materialism, with a permanent dynamics, which forecasts a transition period between ever newer societal stages, towards the contours of an ideal state based on formal rational thinking and the principle of organization, which does evolves forever, but without fundamental breaks.

35. Formal logic can be characterized as a simplified and reduced form of dialectical logic. In particular if we realize that the notions change, time, and any dynamics are anathema in formal logic.

36. See my (Kircz 2022) and (Kircz and van der Linden 2021) for a more extended discussion.

In his early energetics and anti-atomistic thinking, he tries to merge Machian positivism with Marxism in Empiriomonism, but avoids any discussion of dialectics. Unlike in smooth transitions:

First and foremost, where are the conditions that are creating the very *possibility* of a transition from spontaneously contradictory development to systematically harmonious development? *In the very same place* as the conditions for the progressive sharpening of the contradictions of spontaneously developing life in the growing plasticity, the multiplying profusion of content, and the increasing organisation of vital forms. (Bogdanov 2022, 254).

As the editor of the new edition of *Empiriomonism*, Rowley puts it as follows:

Another notable feature of *Basic Elements* was Bogdanov's replacement of the concept of dialectical change—development through contradiction or of the transformation of quantity to quality—with the concept of a dynamic equilibrium of forces and the notion that quantity and quality are entirely commensurable. (Bogdanov 2020, XXVII).

Ultimately, he developed his Tektology, which is essentially a smooth system of social engineering.³⁷

He paints this 'plasticity' in his sci-fi novel *Engineer Menni* written in 1913 (Bogdanov 1984)³⁸

"There are no purely theoretical ideas. Those which seem to be are merely broader and more general than others. Engineering, for example, or even the machine-building industry as a whole, is based on mathematics, is it not? Would your plans and their realization have been possible without hundreds of thousands of mathematical calculations? As for logic, its only vital significance lies in the fact that it enables people to communicate with each other; that is, it allows them effectively to unite their efforts in labor or research." "In that case, if every idea can be reduced to a unification of efforts, where is the difference between the truth and error?" "The difference is in the results. The unification of efforts may be such that it leads to the accomplishment of the goal, in which case the 'idea' is true" (p. 204).

37. A dynamical equilibrium keeps essential features as in topology; a change of form. In a transcendence we reach a novel situation. In that sense F. Engels's unfortunate example of freezing or evaporating water is simply a change of form and not essence. We can dynamically go to and fro from water to steam. But does this means that we can shuttle between capitalism and socialism? This is the main reason for naming the USSR a transition state and not a socialist state, pace its 1936 constitution. Note that Engels's draft private notes were never published in his life time, but became only canonical in Stalinist Diamat.

38. See (Ervin 2026).

And

He [the protagonist Netti. jk] sought to simplify and unify scientific methods, and to this end he studied and compared the most disparate approaches applied by man in his learning and labor. Netti found that the two spheres were very intimately related, that theoretical methods derived entirely from practical ones, and that all of them could be reduced to a few simple schemes. When he then compared these schemes with various organic combinations in nature and with the means by which nature creates her stable and developing systems, he was once again struck by a number of similarities and coincidences. Finally he arrived at the following conclusion: no matter how different the various elements of the Universe—electrons, atoms, things, people, ideas, planets, stars—and regardless of the considerable differences in their combinations, it is possible to establish a small number of general methods by which any of these elements joins with another, both in spontaneous natural processes and in human activity. Thus was born Universal Science, which soon embraced the entire organizational experience of mankind. The philosophy of former times was nothing but a vague presentiment of this science, while the laws governing nature, social life, and thought that had been discovered by the different disciplines turned out to be individual manifestations of its principles. From this time on the solution of the most complicated organizational questions became the task not of a talented individual or genius, but of a scientific analysis that resembled the mathematical calculations used to solve problems of practical mechanics. Thanks to this, when the time came for the radical reformation of the entire social order, even the most serious difficulties of the new organization could be overcome relatively easily and quite systematically. Just as natural science had earlier served as a tool of scientific technique, now Universal Science became a tool in the scientific construction of social life as a whole (p. 232).

Also elsewhere, Bogdanov insists that the whole architecture of factories must be adapted to a more integrated way of production (see chapter 11 ‘Norms and Goals of life’ in Bogdanov 2022), as if building a steam engine can have the same logistics as producing pharmaceuticals.

In Bogdanov’s *Critique of proletarian art*, his harmonious utopian vistas merge struggle and a constructive ideology:

It is through struggle that the working class advances towards its ideal; this ideal is not destruction, but instead a new organization of life. It is an extraordinarily new form of life, immeasurably complex, and supremely harmonious. Consequently, the cultivation of a militant consciousness is not, in itself, the primary means of accomplishing this task; it is necessary to develop a socially constructive ideology. Proletarian science is already moving in this direction, and proletarian art must follow with even more energy and speed—particularly as the working class begins to approach the realization of its ideal. (Bogdanov 2022b, 115).

This romantic utopian dream, almost post-modernist, and his solid belief in mathematics confront us with a necessary comparison with late neo-Kantianism investigations.

Bogdanov, in defence of his political thinking, attacked the popular contemporary neo-Kantians (Bogdanov 2022),³⁹ “who were seeking a metaphysical alternative to the traditional positivist, materialistic, and scientific outlook of the Russian intelligentsia” (Rowley’s introduction to Bogdanov 2022). However, he does not deal (as far as we know) with the more academic developments of the Marburg school, in relation to the mathematics of the calculus. This is the more important because in the early decades of the twentieth century science became confronted with two ‘antagonistic’ fundamental breaks: a) quantum mechanics, which is based on the fundamental notion of the discontinuities of energy transfer,⁴⁰ and on the other hand Einstein’s theory of gravity that intrinsically is built on continuous ‘smooth’ functions and the fusion of the coordinates place and time.

In particular Hermann Cohen and Ernst Cassirer⁴¹ discussed the difference between the notion of a (continuous) function, where a function provides the connection between the value of a parameter to a value of another parameter, and the fundamental problem, since Archimedes, Leibnitz, and Newton, of how to approximate a non-linear line (circle or parabola) by ever smaller straight lines (for the history of this problem since Zeno, see (Boyer 2017 and Bell 2019)). The question at issue is whether we must declare a minimum shortest value of such mathematical line sections, or can we, as was ‘mathematically proven’ in the late nineteenth century, consider an infinite progress, never reaching zero.⁴² Obviously, if you believe in the smoothness of developments, you will try to find rescue in the calculus.

The basic principle of quantum mechanics is the non-smooth (quantum) transition between energetic states. In the so-called Schrödinger model, we deal with a continuous ‘wave function’,⁴³ whilst Heisenberg’s

39. The neo-Kantians remained a serious current in the USSR as Dmitrieva shows (Dmitrieva 2016).

40. See for an extensive discussion on Bogdanov and quantum mechanics my study (Kircz 2026).

41. An excellent review of Ernst Cassirer’s position is given in the Utrecht University master thesis of Pim van der Heijden, (Heijden, van der 2014).

42. This was also for Karl Marx, as shown in his mathematical manuscripts, a key question: continuity or breaks.

43. Which immediately introduces the infamous measurement problem and the notion of ‘the collapse of the wave function.’

matrix mechanics model gives rise to the probability interpretation in quantum mechanics, which is at odds with classical deterministic mechanics (Kircz 2026). These debates in mathematics and physics exemplify the broader Marxist dispute over whether development proceeds through smooth equilibrium or qualitative rupture.

Obviously, Bogdanov's adherence to equilibrium and smooth progress has to be mirrored by the neo-Kantian discussions on functions versus infinitesimals (Mormann and Katz 2013), an important discussion which goes beyond the scope of this paper.

Conclusion

Bogdanov's suggestion to oppose bourgeois versus proletarian science, leaves two fundamental issues open for discussion: 1) is it, in principle, possible to fuse all different sciences, including their, often very different, models, into one universal science? A science that encompasses not only the natural sciences (including biology) but also the social and economic sciences, as well as e.g., the theories about creative works of art. Bogdanov suggests that deep down, there exists one or more characteristics that constantly bifurcate during the evolution of our world and induce the emergence of many different cultures, and 2) that a proletarian, socialist, organisation of scientific work and the changing role of the worker will be a crowbar for reaching such a universal science.

[1]

a) Bogdanov argues that the splintering of scientific theories and models is due to the bourgeois capitalist culture of mutual competition between stakeholders and power structures. However, even if it is true that in our present society based on competition instead of collaboration, there is always a tendency to unnecessarily 'personalize' models and methods, by the artists as well as by the scientists. Also, it is still the situation that, certainly in applied science, many models and methods work perfectly, although they are fundamentally 'outdated,' for instance, dealing with heat as a fluid.

b) The fact that historically, novel phases in culture introduce novel theories (from (epi)genetics to Einsteinian gravitation theory), the idea that ultimately this development will result in a single universal theory, seems to me pure metaphysics. Note that one of the most popular and most intensely studied field in contemporary theoretical physics is 'quantum gravity,' exactly about the antagonism of continuous and not-continuous change. Can they morph into one fundamental theory, or do

we need something completely different? For human earth dwellers, to quote Lenin, nature is infinite.⁴⁴

c) Bogdanov seems to adhere to the idea that, even more universal, mathematical abstract representations are the royal road to general universalism. History has shown that indeed, highly formalised math, which can be used as a model for complicated situations, is nowadays typically based on the tradition of infinite approximations, exemplified by the calculus. But never does the approximation equate the target. Another, presently popular, approach is the use of statistical methods in so-called artificial intelligence. That means using existing knowledge to shake out new knowledge within the same context. It is still an open question if the massive computer power used, will ever spit out a really (so not an overlooked) novel idea. A third line is category theory. Within this branch of mathematics, the suggestion is even made that it can fuse the continuous and the discrete.⁴⁵ The basic question, therefore, is whether the success of our present mathematical history is, indeed, all there is. In particular, if we think about similarity and non-digital knowledge transfer, we have to take into account that analogue computing is possible (starting with the abacus) but not widely researched. Photographs (more worth than 1000 words) and visual facial recognition are now extremely inefficient compared to geometrical approaches, where there is no place for meaning or emotion. Digitisation is a runaway reductive method, which is difficult to 'square' with 'analogue' emotion and meaning transfer.

d) So, as I tried to show in the above, Bogdanov refrains from discussing discrete situations; breaks, and emerging quantities by posing that they can all be seen as a dynamical equilibrium. As argued already, this would mean that social revolutions are reversible, whilst his proletarian science is post-socialist revolution endeavour. The only break in the equilibrium thinking of Bogdanov is his break with dialectics, whilst keeping the notion of socio-historical determination alive.

44. Obviously, the staunch Bogdanovist will argue that the ultimate theory, tektology, is already on the shelf. But as I tried to argue in this paper, a science of organisation still has to explicate what its material (and mental Ideals in Ilyenkovian sense) are and what the character is of its interactions and the understanding of change. As the standard line of an academic paper very often says: more research is needed.

45. I leave it to the interested reader to read the highly technical works of the Maoist mathematician F. William Lawvere (Lawvere 1996).

[2]

Collaboration and friendly working conditions are obviously better than the present rat race. And a serious ecological policy, including e.g., public transport etc. is also an obvious political goal. But with all his romantic ideas about a collective and solidary society, Bogdanov denies human selfishness and creative ambitions, not only in science, but also in the arts. His sci-fi dream just state how humanoids in the future might look like, but is at odds with our present human psychology. Bogdanov foresees a collective therapy in building comradeship and collaboration based on the building of a new culture. Indeed, the humanoids on Mars are no measure for the cruel animals on Earth called humans.

Proletarian science is no more than a utopian idea that, as the proletariat, in analytical Marxist terms, can (nor will) change capitalist society, we can already, at present, make the first steps into a new culture by pure will. In that sense it is an ill-defined romantic political battle cry.

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Appendix

In China, the self-proclaimed first emperor Qin Shi Huang (259–210 BCE), started the unification the immense country, enabling major reforms in all administrative and cultural aspects of the state. A contested story is the purported burning of old texts and the burning of Confucian scholars.⁴⁶ This form of brutally implementing a new regime with a new culture is not unique. Think about Napoleon Bonaparte (1769–1821), who, after his power grab, crowned himself emperor and introduced centralised administrative reforms, the metric system (still contested in the Anglo-Saxon world), and the re-codification of the law. Think about the Stalinist State-Philosophy of DIAMAT, after the ‘bureaucratic counterrevolution’ from the late 1920s. Or the, brown eyed, Adolf Hitler (1889–1945) and his dream of a ‘Third Reich’ of Arian quality.⁴⁷ More recently Mao Zedong’s (1893–1976) power grab with his Cultural Revolution in the late 1960s, including his deification, via his *Little Red Book* of eternal wisdom, and the destruction of much of China’s cultural heritage. Among the many, often bizarre, dictatorial mimics today, we have Donald Trump (1946–?), as self-appointed chairman of the John F. Kennedy Center for the Performing Arts, and source of inspiration of the pruning of books from school libraries by his disciples.

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46. See: https://en.wikipedia.org/wiki/Burning_of_books_and_burying_of_scholars.

47. And the infamous book burnings across the country and eugenic ‘race improvement’ practise.

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From Proletkult to Epistemic Politics: Commentary on Bogdanov's Theses on Proletarian Science (1918)

Sascha Freyberg

ABSTRACT: In September 1918, Alexander Bogdanov presented 14 theses on “Science and the Working Class” to the Proletkult movement, arguing that the institutional organization of science and the politics of knowledge cannot be separated, and that the class character of science shows in all disciplines—or in science (*nauka*) in general. This article presents a political-epistemological reading of the theses, arguing that they still have something to say to us today, even though (and because) Bogdanov works with the distinction between given bourgeois and a projected proletarian science. His diagnosis that science often separates knowledge from its basis in collective labor, fetishizes its own schemas as autonomous and neutral, and fragments into specialisms that lose sight of their social coordination concerns structural features of the organization of science we still face. His diagnosis remains productive well beyond its epistemological or metaphysical background and the Soviet context: it anticipates, and can sharpen, current debates about open science, epistemic justice, and the social orientation of the sciences, where the same tension recurs between science's claim to neutrality and the concrete interests, exclusions, and forms of ownership that shape what counts as knowledge and who gets to produce it. In other words, Bogdanov's analysis touches on basic issues of a Marxist critique of the sciences. Read this way, Bogdanov's theses contribute to our understanding not as a historical curiosity but as an unresolved question about the ideal and organization of the sciences and their social orientation.

KEYWORDS: Proletkult, social orientation of science, epistemic politics, political epistemology, scientific pluralism, class reproduction and its overcoming

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1. Introduction

In 1918, just a few months after the October Revolution, Alexander Bogdanov presented his view of the task of developing science under socialism in two texts both titled “Science and the Working Class” (see Şenalp and Bogdanov 2026). In the revolutionary context he tries to bring in his ideas on what we call today science policy and epistemic politics. In short, Bogdanov claims here that the institutional organization of science and the politics of knowledge (or epistemic politics) cannot be separated and he is calling for developing a proletarian approach to science education and organization. His argument was embedded in the project of Proletkult, which itself drew inspiration from different sources, like workers education and other earlier ideas of Bogdanov and his associates, among them the first “Commissar of Enlightenment,” Anatoly Lunacharsky, who supported Bogdanov’s ideas while trying to balance out the political tensions with Lenin and other leading Bolsheviks.

Bogdanov presented two distinct texts under the same title: a rather discursive February lecture that builds its case through an extended case study of astronomy, and the more compact September theses, which compress this argument into propositional, programmatic form. I will concentrate here on these theses, considering the February article (a good example of Bogdanov’s talent as an advocate and educator of science) rather as providing illustration and particular elaboration.

In this journal we have published translations of both texts by Bogdanov and discussed them. Now, we would like to open up the discussion to everyone. My stance is the following: while Kircz (in this issue) criticizes Bogdanov’s notion of “proletarian science” in a rhapsodic way along the lines of a critique of the idea of a “cultural revolution,” the conceived errors of empiriomonism, and Bogdanov’s shortcomings in terms of the connection of value-form and scientific knowledge, I claim that this doesn’t do justice to the content of Bogdanov’s theses, which is much more concrete and practical, or in one word Marxist. Kircz in his criticism of Bogdanov’s notion of “proletarian science” disregards this aspect and could refer to his accordance with the well-known criticisms of Lenin (in 1908 and in 1920) and Trotsky (1924),¹ but he doesn’t discuss

1. See Lenin 1972 and 1965 resp. Trotsky argues that “a distinct, fully formed proletarian culture could never exist under capitalism or during the transitional socialist phase, because the working class’s historic task is precisely to abolish class society, not to create a new class culture” (Trotsky 1924, chap. 6). While he is certainly right with his statement concerning the abolishment of class culture, his argument actually involves a gap, since the latter statement does not provide a complete reason for the

them in detail and mixes up the conceptual and practical levels involved (from metaphysics and epistemology to cultural politics and strategy) almost to the degree of misrepresentation. While Lenin and Trotsky both had some good reasons for their criticism, I fail to see the reasons in Kircz' attempt and thus have to reject it as misplaced. My argument is that Bogdanov's claims should be assessed not only in light of his philosophical works or Lenin's and Trotsky's criticisms, but first and foremost as an analysis of the ideal and the institution(s) of Science as such (capital S, in the more encompassing sense of *nauka* and *Wissenschaft*), and as part of a common Marxist tradition. I will illustrate this by drawing on several fields of contemporary debates about epistemic politics, to show that 'aitiological' readings² confine Bogdanov's ideas to their deviance in terms of the party line (a tricky thing in the Soviet context), whereas they may in fact touch upon a basic issue of emancipation beyond their context—even today. What is and how do we make accessible to everyone a truly scientific education? Is there just one way or do we necessarily need different ones? How do affirmative action and universal emancipation work together? Who educates the educators, etc.? Since I cannot cover all implications of the theses, I will concentrate on those aspects which seem to be the most virulent.

My reason to not elaborate here on counter-criticism very much is that the following is rather meant as an introduction to the arguments and context of the 14 September theses, in order to give a basis for discussion and to provide the incentive for further debate. In other words,

former claim. The claim concerning a "fully formed proletarian culture" just shows the contradiction involved in some of Proletkult's more extreme ambitions. Bogdanov can indeed be read along those lines (see Soboleva 2021). We can take it as caveat against some exaggerated ideas of Proletkult, which are in danger of creating exactly what it tries to abolish. However, it seems to me that this is precisely the all-too real contradiction involved in the whole Soviet project once the need to gain control of the state apparatus is on the agenda (where Trotsky played himself a contradictory role—as long as he was involved): education in terms of empowerment (particular) and of enlightenment (universal) at the same time.

2. Apart from Kircz see also Potamias 2026. The perceived epistemological and metaphysical shortcomings of Bogdanov's view should not automatically disqualify all that he says. In the end, we are discussing the merits and flaws of Bogdanov's analysis of science in the theses here. A different kind of criticism was that of Evald Ilyenkov, which is discussed in Lotz 2024 and Ervin 2026. The latter presents his reaction to Bogdanov's *Red Star* in the context of Ilyenkov's defense of Leninist dialectics. That reaction, I think, is important and also touches on Bogdanov's understanding of science but again aims rather at some basic and general aspect, namely technocratic ideas and the positivist image(s) of knowledge in general.

I would like to give my reading of the theses. May the readers judge for themselves and correct us!

The commentary proceeds as follows. §2 sketches the historical context and the institutional structure of Proletkult. §3 gives a short overview of Bogdanov's arguments, focusing on the fourteen theses presented to the Proletkult Congress. §4 presents the political-epistemological tensions involved and discusses the advantages and disadvantages of Bogdanov's view of science in general. §5, finally, shows its relevance—in both strengths and weaknesses—for contemporary debates on epistemic politics, such as the “Open Science” and perspectives ranging from epistemological pluralism to radical science movements (e.g., Rose and Rose 1976; Ienna and Freyberg 2023). In the end, Bogdanov's arguments and his vision of the social orientation of scientific research and organization for “Proletarian science” rests on a Marxist analysis of “bourgeois science,” an analysis which identified crucial issues and contradictions that still concern us today. Reading the theses now means to provide a transparent translation into contemporary contexts, which, I think, is valid for all socialist heritage, if we want to learn from and appropriate it in a reasonable, multidimensional, if not scientific way. In the end my argument is that we should discern the common Marxist problems³ still in effect today and not discuss in abstracto and thin air.

2. Historical and Organizational Context

The Proletkult (Proletarian Cultural and Educational Organizations) began as a loose coalition of clubs, factory committees, workers' theaters, and educational societies devoted to the cultural needs of the working class, first taking shape in Petrograd in 1917, just a few days before the October Revolution. An organizing conference of proletarian cultural-educational organizations met in the Petrograd city дума in mid-October 1917, one week before the storming of the Winter Palace, bringing together some two hundred workers and intellectuals under the chairmanship of Anatoly Lunacharsky. It was at the close of this conference that the organization's secretary, Vasilii Ignatov, coined the abbreviation “Proletkult” (Mally 1990, 27–30). The movement was

3. It should be noted that Bogdanov upheld positions which were not that uncommon among Marxists as both critics and adepts may want. Simona Poustilnik has noted that e.g. German Marxist and biologist Julius Schaxel (1887–1943) “last student of Ernst Haeckel, distinguished ‘bourgeois science’ from science as part of ‘proletarian culture.’ [...] In a manner similar to Bogdanov, he talked about science as socialist form of knowledge” (in Oittinen 2009, 133).

instrumental in literacy campaign and widely influential during the first years of the Soviet Union.⁴

By February 1918, Bogdanov had helped organize a founding conference for a Moscow Proletkult, where delegates staked out an ambitious range of competences extending from workers' hygiene to a proposed proletarian university (Mally 1990, 40–41). The First All-Russian Conference in September 1918 then marked the founding of the national organization: 330 delegates and 234 guests convened in Moscow, meeting in the auditorium of the Women's Higher Courses during one of the most difficult stages of the Civil War, only two weeks after an assassination attempt on Lenin (Mally 1990, 45–46). The conference elected Pavel Lebedev-Polianskii as the first national president, with Fedor Kalinin and Aleksei Samobytnik-Mashirov as vice-presidents and Vasili Ignatov as secretary; Bogdanov himself was chosen for the Central Committee and for the editorial board of the journal *Proletarian Culture* (Mally 1990, 49). Kalinin, a metalworker and autodidact from Bogdanov's earlier Vpered circle, simultaneously headed the Division for Proletarian Culture within the People's Commissariat of Enlightenment (Narkompros), which Lunacharsky led since 1917 (Mally 1990, 41–42).

The organizational structure of Proletkult was rather ambiguous with respect to the state. In the first half of 1918 alone, Narkompros allocated the organization a budget of more than 9,200,000 rubles—compared with 32,500,000 rubles for the Commissariat's entire Adult Education Division—yet Proletkult's leadership consistently insisted on institutional autonomy from Narkompros and, implicitly, from the Communist Party as well. Proletkult theorists compared the organization to a laboratory operating in parallel to the party: "The proletariat's cultural-educational organizations are also laboratories to realize the revolutionary-cultural program of the proletariat" (quoted in Mally 1990,

4. Proletkult with all its particularities was a crystallization of different emancipatory genealogies in tension (Marxist, socialist, industrial as well as general labour-movement, narodnik perspectives, etc.). Under extreme scarcity and civil war conditions the work done in just a few years is astonishing and had a lasting effect on Soviet culture even though it included also problematic perspectives and was officially discontinued. Needless to say that the issues Proletkult addressed in different fields did not just go away. The idea of the self-organisation of labor—a basic idea of Bogdanov—was somehow institutionalized but in effect given up. Later Yugoslavia and other socialist countries of Central and Eastern Europe experimented with similar models of the self-organization of labour and production. On a smaller scale self-organization was much more common than usually is presented in the official social histories of real existing socialism.

43). This claim to autonomy (*samostoiatel'nost'*) rested on the conviction that state institutions, unlike Proletkult itself, had to serve the needs of non-proletarian classes as well and were therefore unreliable custodians of a specifically proletarian culture (Mally 1990, 37–38).

This claim to autonomy should not be mistaken for straightforward opposition to the Communist Party as such: over half the delegates at the 1918 conference, and roughly two-thirds by 1920, were party members, and Lebedev-Polianskii himself argued that Proletkult would sooner accept subordination to the party than to Narkompros (Mally 1990, 39–40, xxi). Growth was extremely rapid: the center already listed 147 local affiliates by the end of 1918, and by the autumn of 1920 the national organization counted some three hundred Proletkults across Soviet territory, claiming roughly four hundred thousand members at its peak—though provincial journals sometimes cited even larger, less reliable figures (Mally 1990, 51–52, xix).

Bogdanov's role in Proletkult must be understood against the background of the "left Bolshevik" opposition that formed after the defeat of the 1905 Revolution. Lenin argued that Social Democrats should participate in legal parliamentary channels; Bogdanov and his allies—including Anatoly Lunacharsky, Maxim Gorky, and Pavel Lebedev-Polianskii—held that the revolutionary struggle should continue underground, and, more fundamentally, that Lenin's rigid materialism gave culture and ideology too small a role in Marxist theory (Mally 1990, 3–5). In 1908, Lenin attacked this reinterpretation of Marxism in *Materialism and Empirio-Criticism*, and shortly afterward ousted Bogdanov from the Bolshevik faction (Mally 1990, 7).

The 'left Bolsheviks' translated their critique into a concrete pedagogical project: exile schools for worker-cadres on Capri (1909) and in Bologna (1910–1911), where thirteen worker-students elected from party committees studied under teachers including Gorky, Bogdanov, Lunacharsky, and the historian Mikhail Pokrovsky. At the close of the Capri school, participants formed the *Vpered* ("Forward") circle; its founding platform, written by Bogdanov, declared: "Using the old bourgeois culture, create a new proletarian one opposed to the old and spread it to the masses. Develop a proletarian science, strengthen authentic comradely relations in the proletarian milieu, devise a proletarian philosophy, and turn art in the direction of proletarian aspirations and experience" (quoted in Mally 1990, 8).

Crucially for understanding the tension between vanguard and mass orientations, Bogdanov's prerevolutionary institutions were explicitly

conceived as cadre training rather than mass education. However, the cadres were workers returning to the production sites eventually. Bogdanov's perspective on self-organization of labour had to integrate both, but needed a plan. Mally observes that the Capri-type "proletarian universities" Bogdanov proposed "would be open to the most sophisticated representatives of the working class," who were to form a new proletarian intelligentsia and only then "begin the task of organizing the broad mass of workers"; his program, she concludes, "was essentially an exclusive one; he was not proposing methods for mass education," but rather sought to ensure that Bolshevism's vanguard came from the proletariat itself (Mally 1990, 9). This orientation persisted into the Proletkult period and stood in tension with the movement's later self-description as a mass organization of several hundred thousand members.

As we have mentioned and Mally as well as Soboleva (2007, 2021) have observed, Proletkult was far from a unified bloc with one single ideology. Instead of labeling the project "utopian" or "romantic," as Kircz does, it is much more important to see what the function of Bogdanov's interventions in Proletkult amount to, namely making an attempt of building or forming (that is developing and not prescribing) conditions to make a different kind of science and of science education possible. The real challenge, as Soboleva (2021) puts it, is that

Bogdanov moves the revolutionary problems from the field of economy into the field of ideological structure. These ideas can be evaluated as modernization of Marxism. Instead of the proletarian revolution, Bogdanov drafts in his texts on proletarian culture a programme of the proletarian evolution. To Marx, "communist consciousness" was a product of the social revolution, not its prerequisite. To Bogdanov, proletarian culture is, on the contrary, not a consequence but a condition of socialist modernization of society.

This seems to me a point worthy of translation and discussion.

At the September 1918 conference, Bogdanov expounded on "the need for a proletarian science," a topic he had already developed at length before the revolution. To realize this goal, he proposed "a special proletarian university where participants would fashion a proletarian encyclopedia, codifying working-class knowledge in the same way that the eighteenth-century French encyclopedia had done for the bourgeoisie" (Mally 1990, 47–48). Bogdanov's theses "Science and the Working Class" were closely tied to this institutional program: an earlier version of the argument had already been presented at the Moscow Proletkult's February 1918 founding conference, and it was elaborated further in the pages of the new journal *Proletarian Culture* (*Proletarskaia kul'tura*),

which served as the movement's principal theoretical organ from March 1918 onward (Mally 1990, 42).

The conference itself adopted resolutions establishing science, alongside art and everyday life, as one of the central domains of proletarian cultural construction. The demands articulated there—for a Workers' University and a Workers' Encyclopedia to codify and reorganize scientific knowledge from the standpoint of collective labor—were not abstract proposals but led directly to institutional experiments, including the founding of a Proletarian University in Moscow in the following years (Mally 1990, 47–48). Bogdanov's Central Committee membership and editorial role placed him at the intellectual center of this program even though the organization's presidency belonged to Lebedev-Polianskii (Mally 1990, 49).

3. Arguments of the Theses

3.1 Universal Class Character (Theses 1–2)

Bogdanov's first thesis makes a claim that distinguishes his position from more moderate attempts to identify ideology in science. He argues that an actually existing science may be bourgeois or proletarian “by its very ‘nature,’” in terms of its origin, point of view, and the methods by which it is elaborated and explained. Crucially, he extends this analysis beyond the social sciences: “all the sciences, not only the social sciences but all the other sciences, including mathematics and logic, may be said to have, and actually do have, a class character” (Bogdanov 1918, thesis 1).

This universalization of class character was a hot topic of the early years of the Soviet Union, where as e.g. Mikhail Lifshitz observed, ‘vulgar sociologism’ reigned, and historical materialism was often taught in the sense that the class of agents was seen as all-decisive. It is clear, that this is an extreme position and it is important to note that also the other pole was present in the Soviet debates, namely that of keeping apart class and works, or ideology and objectivity completely. This view also distinguished, e.g. between natural sciences (potentially objective) and social sciences (inherently ideological). However, Bogdanov's second thesis explains this through the concept of science as “organized, collective experience” serving as an “instrument of the organization of the life of society.” Bourgeois science has been developed primarily by representatives of the bourgeois intelligentsia, who have concentrated in it the material experience available to the bourgeois classes, understood and interpreted it from the point of view of those classes, and thereby

produced a science that “has served and continues to serve as an instrument of the bourgeois structuring of society” (Bogdanov 1918, thesis 2).

3.2 The Problem of Abstraction from Labor (Theses 3–4)

Theses 3 and 4 develop Bogdanov’s most penetrating critique of bourgeois science: its “fundamental limitation of point of view” derived from “the separation of science from its real basis: social labour.” This separation originates in the differentiation between mental and physical labor, which renders invisible, for the bourgeois classes, “the indissoluble link between practice and theory in the social process as an integral whole.” Having been educated to think in terms of private property and market competition, the bourgeois classes acquire an individualistic consciousness that makes the social nature of science incomprehensible to them (Bogdanov 1918, theses 3–4).

For bourgeois consciousness, knowledge is “something in itself, even something that is opposed to practice, something that is of an ‘ideal’ or ‘logical’ nature.” Bogdanov terms this the “abstract fetishism of knowledge”—a concept that parallels Marx’s commodity fetishism but locates it specifically in the realm of epistemology (Bogdanov 1918, thesis 4). This fetishism prevents bourgeois science from recognizing that knowledge has arisen out of practical activity and is acquired in order to be used in practical activity.

3.3 Fragmentation and the Lack of Coordination (Theses 5–6)

Theses 5 and 6 diagnose a structural problem in bourgeois science that extends beyond epistemology to organization: the tendency toward ever-increasing specialization. Science became “fragmented into branches that increased in number and diverged at the expense of vital interactions between these branches.” The individualistic separation of people accentuated this process, resulting in “a huge loss of coordination in science just as there was a loss of coordination in capitalist society” (Bogdanov 1918, thesis 5).

The consequences are severe: each specialism develops its own language, incomprehensible not only to the masses but even to scientists in other fields. Methods penetrate from one branch to another only “with much delay and difficulty,” producing a “narrow, professional outlook” that weakens creative activity (Bogdanov 1918, thesis 6). While machine production stimulated some trend toward methodological unification, Bogdanov argues this cannot succeed as long as the fundamental divide between the individual branches of science remains.

3.4 *The Barrier to Proletarian Access (Thesis 7)*

Thesis 7 addresses a problem that remains urgent today: the social barriers to scientific participation. Bourgeois science, with its “laborious, obscure and complicated professional language,” is scarcely accessible to the working class and, as a commodity in capitalist society, sells at a high price. But Bogdanov identifies a more complicated problem: even when individual proletarians manage to master a scientific field through enormous expenditure of energy, the class character of science reasserts itself. The gulf between science and collective work produces “an estrangement in their lives from the interests and mentality of the working community from which they emerged” (Bogdanov 1918, thesis 7).

3.5 *The Proletarian Task: Reinterpretation and Reorganization (Theses 8–11)*

Thesis 8 articulates the working class’s specific tasks: science must be reinterpreted from a proletarian point of view, both in content and in the form in which it is taught, and there must be “the creation of a new organization, both for the elaboration of science and for the dissemination of scientific knowledge amongst the working masses.” Importantly, Bogdanov acknowledges that in most branches of science, accomplishing these tasks will entail “a methodical assimilation of the legacy of the old world,” while some branches will need profound and far-reaching innovation (Bogdanov 1918, thesis 8).

Thesis 9 specifies what reinterpretation means: the material of science must be understood as the practical experience of humanity, and its schemas, conclusions, and formulae must be seen as tools for organizing the entire social practice of people. Bogdanov offers concrete examples: astronomy as the science of orienting work processes in time and space; physics as the science of the resistances encountered in collective labor; physiology as the science of labor power; logic as the theory of the social harmonization of ideas (Bogdanov 1918, thesis 9).

Thesis 10 announces an ambitious goal: overcoming scientific fragmentation through unity of scientific language and a convergence of methods across branches of knowledge and practice, so that “a total monistic system can be developed, comprising both domains.” This would be realized in a “universal organizational science”—Bogdanov’s *Tektology*—needed by the proletariat as the future organizer of the whole life of humanity (Bogdanov 1918, thesis 10). Thesis 11 addresses pedagogical

cal simplification without prejudice to substance, achieved partly by discarding scholastic ballast and partly as a natural consequence of liberating science from the abstract fetishism that generated “so many pseudo-problems and unnecessary stratagems” (Bogdanov 1918, thesis 11).

3.6 Institutional Proposals: Workers’ University and Encyclopedia (Theses 12–14)

The final theses propose concrete institutional forms, to be realized through the Workers’ University and Workers’ Encyclopedia (Bogdanov 1918, thesis 12). The Workers’ University was envisioned as a system of cultural-educational institutions operating at various levels and culminating in a single center for the training and organization of scientific forces. Crucially, “the basic form of relationship between teachers and students should be comradely co-operation,” in which the competence of the former does not justify an unaccountable exercise of authority, and the trustfulness of the latter does not degenerate into passivity. The principal goal of teaching should be a mastery of methods (Bogdanov 1918, thesis 13). Thesis 14 directs the university’s publishing activity toward creating a Workers’ Encyclopedia—not a mere compilation of scientific findings, but a harmoniously organized system explaining the methods of practice and cognition and the vital links between them (Bogdanov 1918, thesis 14).

4. Critique and Political-Epistemological Tensions

The conflict between Bogdanov and Lenin ran deeper than organizational politics; it involved fundamentally incompatible epistemologies. Lenin’s 1908–1909 *Materialism and Empirio-Criticism* had already attacked Bogdanov’s philosophical position, developed from the ideas of Ernst Mach and Richard Avenarius, as subjective idealism, and this dispute directly preceded Lenin’s move to expel Bogdanov from the Bolshevik faction (Lenin 1972; Mally 1990, 5–7; Bakhurst 2018; see also the essays collected in Oittinen 2009). Lenin insisted that science discovers objective realities existing independently of human consciousness or class position; Bogdanov’s claim that even mathematics and logic possess class character appeared, from this standpoint, not merely mistaken but anti-materialist.

Bogdanov’s position, by contrast, emphasized science as collective human practice. While this approach resonates with later developments in the sociology of scientific knowledge and practice-based epistemology

(Bloor 1976; Longino 1990; Pickering 1995; Rouse 1987), it raised genuine questions about whether scientific claims could be adjudicated independently of social interests.

This epistemological divide produced divergent political strategies. Lenin's position, articulated in the draft resolution he prepared for the First All-Russian Proletkult Congress in October 1920, insisted on "the development of the best models, traditions and results of the existing culture, from the point of view of the Marxist world outlook and the conditions of life and struggle of the proletariat in the period of its dictatorship." Marxism, the draft continued, had won its historic significance as the ideology of the revolutionary proletariat precisely because, "far from rejecting the most valuable achievements of the bourgeois epoch," it had assimilated and refashioned everything of value in the development of human thought and culture (Lenin 1965, 316–317). The task was critical appropriation, not reconstruction from scratch.

For Lenin, the urgency of socialist construction demanded immediate utilization of existing scientific and technical knowledge; the new Soviet state could not wait decades for a new "proletarian science" to be elaborated. Bogdanov's strategy appeared dangerously utopian from this perspective. His insistence that individual proletarians who mastered bourgeois science risked estrangement from their class implied that technical education itself could threaten revolutionary consciousness, while his vision of reconstructing all sciences from a collective labor standpoint suggested a decades-long cultural project that would divert energy from immediate material tasks.

The organizational question crystallized these deeper tensions. Proletkult's claim to *autonomy* directly challenged the Leninist principle of *party hegemony* over all aspects of revolutionary transformation. The First All-Russian Proletkult Congress, meeting in Moscow from October 5 to 12, 1920, became the site of decisive confrontation. On October 8, *Izvestia* reported that Lunacharsky, addressing the Congress, had promised Proletkult a special status and complete autonomy—a position Lenin had explicitly instructed him not to take. Lunacharsky later recalled: "Vladimir Ilyich instructed me to attend it and pointed out quite definitely that Proletcult should be subordinated to the People's Commissariat of Education... He summoned me and gave me a good talking-to" (quoted in Lenin 1965, 317 n2).

Lenin then drafted a resolution, discussed by the Politburo of the Central Committee on October 9 and 11, which the Congress adopted unanimously. It categorically rejected "all attempts to invent one's own

particular brand of culture, to remain isolated in self-contained organisations, to draw a line dividing the field of work of the People's Commissariat of Education and the Proletkult, or to set up a Proletkult 'autonomy' within establishments under the People's Commissariat of Education." Instead, all Proletkult organizations were obliged to consider themselves "auxiliary bodies of the network of establishments under the People's Commissariat of Education," fulfilling their tasks under the general guidance of the Soviet authorities and the Communist Party as part of the tasks of the proletarian dictatorship (Lenin 1965, 316–317).

Following the Politburo's decision, the Chief Committee for Political Education drafted instructions governing relations between Proletkult and Narkompros, which the Central Committee's plenary session endorsed on November 10, 1920. A further letter from the Central Committee, "On Proletkult Organizations," published in *Pravda* on December 1, 1920, gave a detailed critique of the movement's errors (Lenin 1965, 317 n1).

Bogdanov's departure from Proletkult and politics tout court occurred gradually over the following months. In a 1925 autobiographical sketch, he wrote: "In the autumn of 1921 my work in the Proletkult came to an end and I devoted myself exclusively to scientific work" (quoted in Biggart and Bulgakowa 2021, 76).

However, in the summer of 1923, Soviet secret police arrested Bogdanov on suspicion of having inspired the clandestine opposition group "Workers' Truth"; he was interrogated and released after roughly five weeks (Biggart and Bulgakowa 2021, 76). The episode appears to have confirmed, rather than caused, a withdrawal from politics that had already been underway since 1921. Bogdanov devoted his remaining years increasingly to blood transfusion research, founding the Institute for Blood Transfusion in Moscow in 1926 and dying in 1928 after a transfusion experiment on himself went fatally wrong (Krementsov 2011).

From today's view it seems to me that Bogdanov's diagnosis of the separation between science and labor as a fundamental epistemological problem anticipates sophisticated later analyses. His concept of the "abstract fetishism of knowledge" identifies a real ideological structure in which science appears autonomous from social practice—an insight developed by subsequent traditions including the sociology of scientific knowledge (Bloor 1976), feminist epistemology (Harding 1986), and science and technology studies.

Second, his analysis of scientific fragmentation and loss of coordination remains remarkably prescient given the acute hyperspecialization and disciplinary silos of contemporary science (Frodeman, Klein, and Pacheco 2017). Third, Bogdanov correctly identified social barriers to scientific participation as not merely economic but epistemological and cultural; his observation that proletarians who master bourgeois science risk estrangement from their communities anticipates contemporary discussions of epistemic injustice (Fricker 2007). Fourth, his pedagogical proposals—the emphasis on comradely cooperation rather than hierarchical authority, and on mastery of methods rather than memorization of facts—anticipate progressive educational theory. Finally, his insistence that the organization of science profoundly affects its content aligns with contemporary emphasis on research infrastructures and institutional design (Edwards 2010).

Bogdanov's extension of class character to all sciences, including mathematics and logic, raises serious philosophical problems. The claim that mathematical truths themselves are class-specific is difficult to sustain and made the argument vulnerable to *reductio ad absurdum*. Also, the strategy of comprehensive reconstruction rather than critical appropriation was strategically questionable: Bogdanov's own acknowledgment that "in most branches" the task would be methodical assimilation of the old world's legacy (Bogdanov 1918, thesis 8) sits uneasily with his more radical universal claims.

The vision of a "universal organizational science" creating a "total monistic system" (Bogdanov 1918, thesis 10) is epistemologically questionable (as also Kircz notes), especially when we see it in the light of the emphasis contemporary philosophy of science places on scientific and theoretical pluralism (Kellert, Longino, and Waters 2006). Bogdanov's institutional proposals, while innovative, provided no clear mechanisms for addressing disagreement or preventing new hierarchies from emerging within nominally egalitarian structures, as the later history of Soviet institutions would demonstrate (Fitzpatrick 1999; on Ilyenkov's critique see Lotz 2024). Perhaps most importantly, the very notion of "proletarian science" risked essentializing class identity in ways that could be, and later were, weaponized for political persecution under Stalin (Graham 1993)—a possibility Mally notes was already latent in the movement's own internal debates over how expansively or exclusively to define its proletarian constituency (Mally 1990, xxvi).

A critical limitation in Bogdanov's theses is their apparent focus on industrial labor. His references to "collective labor," "the working class,"

and the “proletarian standpoint” evoke primarily the factory worker engaged in material production—though it is worth noting that Mally shows Proletkult members themselves never agreed on this point: some understood the proletariat narrowly as the industrial working class, while others, echoing the Populist tradition, extended it to the whole laboring *narod*, welcoming typists, house painters, and peasants without any sense of contradiction (Mally 1990, xxv). Yet as Engels noted in his 1888 footnote to the Communist Manifesto, “By proletariat is meant the class of modern wage-labourers who, having no means of production of their own, are reduced to selling their labour-power in order to live” (Marx and Engels 1998, 34). This definition encompasses far more than industrial workers: it includes all who must sell their labor power—service workers, care workers, knowledge workers, precarious gig workers, the growing multitude of waged masses under contemporary capitalism.

If we take this expanded definition seriously, what becomes of “proletarian science”? The answer shifts the emphasis from a specific class location (the factory) to a fundamental social relationship: the separation of the producers from control over the conditions and products of their labor. Proletarian science, in this expanded sense, would not be science specifically oriented toward industrial production but science oriented toward collective self-organization against the alienation inherent in wage labor itself. The “proletarian standpoint” is not the viewpoint of a particular occupation but the perspective of those who experience the separation of knowledge from collective control, the expropriation of social intelligence, the transformation of human capacities into means serving purposes determined elsewhere.

This reformulation helps clarify what is at stake in Bogdanov’s argument. The core issue is not whether scientists come from working-class backgrounds or whether research serves industrial productivity. Rather, it concerns the social orientation of science: Does scientific practice serve to consolidate the separation between those who know and those who labor, between conception and execution, between expert authority and collective experience? Or does it work to overcome these separations by making methodological literacy accessible, by democratizing participation in knowledge production, by reconnecting abstract schemas to the practical experience from which they arose? Understood this way, “proletarian science” names not a class-essentialist epistemology but a mode of organizing scientific practice that resists the fetishization and privatization of collective intelligence.

This reading gets significant when we recognize that contemporary capitalism has generalized the proletarian condition far beyond the factory. Knowledge work, affective labor, digital labor, platform labor—all share the fundamental structure of selling labor power while remaining separated from control over the broader systems within which that labor is embedded. Teachers implement curricula they did not design; programmers execute specifications they did not determine; care workers follow protocols they cannot revise; platform workers are coordinated by algorithms they cannot inspect. Bogdanov’s insistence on overcoming the separation between science and collective labor thus speaks directly to these contemporary conditions. The question is not only who has access to scientific careers but who controls the organizational schemas—the models, protocols, algorithms, standards—that structure social practice across all domains of wage labor.

5. Contemporary Connections

5.1 *Artificial Intelligence and the Technosphere*

Bogdanov’s conception of science acquires striking contemporary relevance once we recognize that modern technoscience—particularly data-driven modeling, algorithmic systems, and artificial intelligence—operates (seemingly) as he described: as organized collective experience serving as an instrument for organizing social life. Machine-learning models, economic simulations, and algorithmic decision systems could be seen as condensations of collective social experience and practice—language, behavior, judgment—translated into operational schemas that orient and reorganize society (cf. Pasquinelli 2023 on the “general intellect” and the machinic organization of collective labor). The decisive question is therefore not whether these systems are “true” or “accurate” in some abstract sense, but how, by whom, and for what purposes collective experience is being organized.

His claim that science may be “bourgeois or proletarian by its very ‘nature’... in terms of its origin, its point of view, and the methods by which it is elaborated” (Bogdanov 1918, thesis 1) applies directly to contemporary AI and economic modeling. The class character does not lie primarily in biased results or discriminatory outputs but in problem selection, data ownership, methodological priorities, and institutional control (Noble 2018; O’Neil 2016). What today appears as the neutrality of “the model” or “the algorithm” exemplifies precisely what Bogdanov called the “abstract fetishism of knowledge”—the tendency to treat schemas as autonomous entities standing above practice rather than as tools

arising from and for practice (cf. the Mertonian norm of disinterestedness in Merton 1942/1973). This fetishism intensifies under digital capitalism, where collective social intelligence is expropriated, formalized, and returned to society as an apparently objective and authoritative force governing work, markets, and administration (Pasquale 2015; Zuboff 2019).

5.2 The Praxeological Character of Bogdanov's Theses

A decisive feature of Bogdanov's theses, often underestimated in later receptions, is their explicitly praxeological character. Science is not merely about practice; it is itself a mode of practice, a specific form of social labor whose products intervene back into the organization of collective life. His call for the Workers' University and Workers' Encyclopedia were not merely pedagogical projects but organizational technologies designed to restructure how knowledge is produced, shared, and coordinated (Bogdanov 1918, theses 12–14; Mally 1990, 47–48).

From a contemporary standpoint, this praxeological thrust becomes particularly salient in relation to data-driven science, AI, and economic modeling. Today, Bogdanov's concrete measures would translate into several interrelated interventions: public and collective infrastructures for model-building and data governance, built through participatory processes accountable to those whose experience they formalize (Costanza-Chock 2020); participatory forms of scientific and technological design, in which those whose labor is coordinated by algorithms help design the systems that organize their work; open and revisable model repositories that make computational models, training datasets, and algorithmic systems transparent and subject to collective revision (Gebru et al. 2021); and educational institutions oriented toward methodological literacy rather than proprietary expertise.

Bogdanov's praxeology offers neither technophobic rejection of modern science nor naive solutionism. The problem is not models, algorithms, or automation as such but their social form: whether they remain fetishized instruments of alien administration or become conscious tools of collective self-organization. Many current reform proposals accept the existing separation between technical development and social use, seeking only to make systems "fairer" or more "transparent" while leaving intact the fundamental structure in which collective intelligence is expropriated and returned as external authority (Moro-

zov 2013). Bogdanov's theses suggest a more fundamental transformation: reconnecting the production of organizational schemas to collective practice.

5.3 Open Science and Epistemic Justice

Sabina Leonelli's 2023 critique of open science reveals striking parallels with Bogdanov's 1918 analysis. Leonelli shows that "despite the good intentions and the vast efforts committed to their actualization, OS initiatives are fraught with difficulties" (Leonelli 2023, 4), not least because they operate within a research system shaped by commodification (Leonelli 2023, 14; 48) and the political economy of publishing. She argues that the interpretation of "openness as sharing" rests on an "object-oriented view of science" (43–44), and that the standardization demanded by some OS initiatives "threatens to blindly privilege specific ways of knowing, thus potentially disrupting sophisticated methodologies, inadvertently dismissing well-established research traditions, and exacerbating the already large epistemic and social divides separating research domains and locations" (5). She proposes instead "a conception of openness as judicious connection, which is grounded in a process-oriented epistemology of science that recognizes the situated, embodied and goal-directed nature of communication and collaboration among researchers" (8). Moreover, Leonelli identifies how open science initiatives can reinforce existing inequalities. Data-sharing regimes premised on high-tech infrastructure can result in "the exclusion from data sharing initiatives of researchers who are not based at prestigious academic institutions" (22), and author-pays models of Open Access are "likely to exasperate existing vulnerabilities and divides among prospective authors" (69). At the same time, "commercial innovation is among the favoured outcomes of the free use of research components facilitated by OS," with OS encouraged "particularly within publicly funded research, with the expectation that downstream application of the resulting solutions may well be patented and commercialized for exclusive use of specific providers" (16). This dynamic, public goods privatized for profit, represents a contemporary form of what Bogdanov analyzed as science serving as an instrument of bourgeois structuring. The "openness" is more often than not purely formal, while, as Leonelli points out, the purpose of sharing objects "is not simply to convey information, but rather to facilitate human agency" (52).

5.4 Epistemic Justice and Participatory Research

Bogdanov's Thesis 7—warning that proletarians who master bourgeois science become estranged from their communities—anticipates contemporary discussions of epistemic injustice. Miranda Fricker's influential framework distinguishes testimonial injustice (credibility deficits due to prejudice) from hermeneutical injustice (lack of conceptual resources to articulate one's experience) (Fricker 2007). Community-Based Participatory Research attempts to address such questions by involving community members throughout the research process (Wallerstein and Duran 2006), though it also reveals tensions Bogdanov did not fully resolve: power imbalances persist even in ostensibly participatory structures, and academic partners often retain ultimate control over research design and publication.

5.5 Scientific Fragmentation and the Need for Integration

Bogdanov's diagnosis of scientific fragmentation has only intensified under conditions of exponential growth in specialized subdisciplines (Frodeman, Klein, and Pacheco 2017). However, his proposed solution—a universal organizational science creating a monistic system—now appears problematic. Contemporary philosophy of science generally embraces theoretical pluralism, recognizing that different explanatory frameworks may be appropriate for different phenomena (Kellert, Longino, and Waters 2006). Nevertheless, his point about disintegration remains valid, given that the capilist setting is necessarily constraining and hindering certain epistemic values (as e.g. in open access, or as Merton put it “the communism of science”) and self-reflection to become consequential (see also Sheehan 2026).

5.6 Global Inequalities, Colonial Legacies, Commodification

Bogdanov's framework focused on class, but contemporary debates about epistemic justice necessarily engage race, gender, colonialism, and global inequality. Bibliometric research evaluation systems produce geopolitical knowledge inequality, with continued Euro-American dominance in scientific content reproducing old North/South and West/East hierarchies (Chavarro, Tang, and Ràfols 2017). Indigenous knowledge systems face systematic marginalization in supposedly universal science (Smith 2012). These intersecting forms of epistemic injustice suggest that Bogdanov's analysis, while pioneering, was too narrow: a truly democratic science must address not only class but colonial legacies, racial hierarchies, and gender exclusions.

Bogdanov's observation that science had become a commodity in capitalist society remains profoundly relevant. Contemporary academic science is increasingly shaped by market logics, with knowledge patented and commercialized and pharmaceutical companies controlling access to life-saving medicines through intellectual property regimes (Mirowski 2011; Radder 2010, 2019). The corporate capture of scientific research extends beyond direct funding to shape research agendas and suppress unfavorable findings (Oreskes and Conway 2010), vindicating Bogdanov's core insight that one cannot separate science's epistemic content from the social interests it serves. It has to be noted, of course, that all the contemporary connections mentioned are embedded in a completely different setting from that of Bogdanov, which was in context, aim and scope revolutionary. The aim here was to discuss what we can learn from that story.

6. Conclusion

So, what practical lessons can contemporary movements for epistemic justice and radical science draw from Bogdanov's theses and the historical experience of Proletkult? First, institutional autonomy matters, but autonomy alone is insufficient without mechanisms for internal democracy and accountability—a lesson underscored by Proletkult's own difficulty translating its formal claims to autonomy into consistent local practice (Mally 1990, 50). Second, the tension between appropriation and reconstruction remains unresolved. Third, universalizing frameworks risk creating new exclusions even while claiming to overcome old ones; respect for epistemic diversity may be more important than theoretical unification. Finally, the relationship between reform and revolution cannot be avoided: Leonelli's analysis suggests that well-intentioned reforms can worsen inequalities, yet Bogdanov's revolutionary alternative led to authoritarian control. Perhaps the answer lies not in choosing between reform and revolution but in sustaining experimental spaces for alternative practices that prefigure more democratic futures.

Taking seriously the criticisms of Bogdanov's work (including, for instance, Ilyenkov's; see Maidansky and Oittinen 2020; Oittinen 2024) I argue that we can learn from both sides also in terms of the Lenin-Bogdanov debate (cf. Freyberg and Kobakhidze 2025), but that it is not sufficient to confine the contemporary analysis to a single level (e.g., the idea of cultural revolution, or Bogdanov's Machist background, "idealism" etc.). Dialectically speaking, these criticisms remain valid but one-

sided once we assess the arguments and ideas involved in a wholly different context, namely our own, which offers no direct prospect of political realization. While the various levels of that debate could not all be presented here, I hope this commentary at least indicates a way of assessing Bolshevik ideas and the socialist heritage more comprehensively, and encourages readers to take Bogdanov's ideas seriously, at least in the fields to which I pointed.

What I tried to show is that Alexander Bogdanov's theses are a systematic attempt to theorize the relationship between class, knowledge, and scientific organization that anticipated many contemporary debates in epistemology and science studies. His diagnosis of bourgeois science's fundamental limitations—its separation from labor, its abstract fetishism, its fragmentation through specialization, and its barriers to working-class participation—identified real structural problems that persist today. Yet his solutions—comprehensive reconstruction of all sciences from a proletarian standpoint, unification through a universal organizational science, autonomous cultural organizations independent of political direction—proved problematic both theoretically and practically, and his institutional model of an autonomous Proletkult challenged the Leninist principle of party hegemony in ways that made conflict all but inevitable, culminating in the movement's subordination in October 1920 (Lenin 1965, 316–317) and Bogdanov's own gradual withdrawal from political activity by 1921–1923 (Biggart and Bulgakowa 2021, 76).

When we understand “proletarian science” as Science oriented toward overcoming the alienation inherent in all wage labor—in the sense Engels gave the term proletariat (Marx and Engels 1998, 34), Bogdanov's framework gains new relevance. The question becomes whether scientific practice consolidates or challenges the separation between expert knowledge and collective control. In an era where knowledge work, care work, platform labor, and digital labor have generalized the proletarian condition far beyond the factory, this question applies across all domains where individual expertise is mobilized within opaque organizational frameworks.

Most strikingly, Bogdanov's analysis of science as organized collective experience applies with uncanny precision to contemporary artificial intelligence, algorithmic systems, and data-driven modeling. The abstraction of collective intelligence into apparently autonomous technical systems that govern work, markets, and administration represents exactly the “abstract fetishism of knowledge” that Bogdanov diagnosed. The question he raised (whose experience is organized, by

whom, and for what purposes) has never been more urgently discussed—though we have to see that this has mostly had consequences in words and not in actions. The praxeological character of Bogdanov's theses remains an important legacy: because science is itself a form of social practice, its transformation requires concrete institutional, educational, and organizational measures, not merely theoretical critique.

Bogdanov's theses thus remain productive not as a blueprint to follow but as a provocation to think critically about the relationship between knowledge and power, between scientific organization and social justice. His insistence that we cannot separate epistemological questions from political and organizational ones—that the form of science matters as much as its content—continues to challenge facile assumptions about scientific neutrality and accessibility. In an era of intensifying global inequality, corporate control of research, epistemic injustice along multiple dimensions, and the emergence of algorithmic governance, Bogdanov's century-old questions remain urgent: Whose science? For what purposes? Organized how? (cf. Böhme et al. 1983; Longino 2001; Stengers 1997/1998, 2018). These are questions that must be answered anew, learning from both the insights and the failures of those who struggled with them before.

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Evald Ilyenkov: Towards the Concept of “a Human's Body” versus “the Human Body”

Translated and introduced by Kyrill Potapov¹

ABSTRACT: This article presents the first English translation of Evald Ilyenkov's late, unfinished essay “Towards the Concept of ‘a Human's Body’ versus ‘the Human Body’” (1978), together with an introduction situating the text in its intellectual and political context. Written near the end of Ilyenkov's life, against the lingering ideological dominance of Pavlovian doctrine after the 1950 Pavlov Session, the essay mounts a sustained critique of physiological reductionism and its convergence with cybernetics and behaviourism. Ilyenkov argues that the human body cannot be grasped as a biologically given organism but only as a socially constituted form of life. Through a thought experiment imagining an infant raised in total isolation from culture, he isolates the “purely biological” in order to show that almost everything specifically human is a product of labour rather than nature. His central target is the Pavlovian “second signal system” and the concept of the “conditioned reflex”: Ilyenkov contends that signality and conventionality are not natural properties later projected onto the human psyche, but historically specific achievements of socially organised activity. The accompanying introduction links these arguments to ecological niche construction, dialectical biology, and contemporary 4E approaches to cognition, while drawing out the political stakes of Ilyenkov's Spinozist, anti-functionalist alternative. A.G. Novokhatko's 2008 commentary is also included, further exploring Ilyenkov's contemporaries and influences.

KEYWORDS: Evald Ilyenkov, Ivan Pavlov, embodied cognition, Soviet psychology, biology

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Introduction

In 1950 Stalin's government organized The Pavlov Session to formalize Pavlov's teachings as mandatory doctrine. Pavlov's former students split into accusers and accused; those who deviated from orthodox Pavlovianism were denounced and urged to admit their mistakes (Windholz 1997). Scientists and university professors across the biomedical and psychological sciences were forced to adopt Pavlovian doctrine, and the reforms extended into hospitals and clinical practice (Popova 2025). With parallels to the Lysenko affair in genetics, this marked a pattern of ideological interventions that flattened much of the nuance and debate in the Pavlovian work of the 1920s (Strick 2016).

The Stalinist formalization of Pavlov included the insistence that the nervous system exercises dominant control over every bodily function and that psychology was reducible to the physiology of higher nervous activity (Razran 1958). The *second signal system*: Pavlov's characterisation of language as "signal of signals" (Windholz 1990), became a mandated theory of human consciousness, while "subjective" or introspective aspects of consciousness were rejected. Trauma and psychological disorders were understood in terms of the patterns of excitation and inhibition caused by conditions in the environment.

Even as Pavlov's theories fell out of fashion, they continued to shape Soviet science. The Stalinist climate of accusation and censorship also persisted well into 1970s, when Evald Ilyenkov wrote *Towards the Concept of "a Human's Body" versus "the Human Body"*. This essay was written at the end of Ilyenkov's life as he suffered from alcoholism and depression caused in part by the persecution and restrictions he faced from the academy (Bakhurst 2023, 113–31) – one of the last Ilyenkov would write before his suicide. It is an impassioned draft with Pavlov as its perhaps surprising central target. It's hard not to read the multiple references to the "Tower of Silence" (the soundproof lab in which Pavlov carried out many of his experiments) as holding a wider symbolic significance for Ilyenkov.

As Ilyenkov rails against treating anthropomorphic concepts like "information" and "purpose" as properties of nature, there are clear allusions to the cybernetics of his own time. Both the Pavlovians and the cyberneticians ultimately understood life activity in terms of mechanistic functions (Gerovitch 2002). Ilyenkov's Spinozist counter-move is to insist that the psyche is not in the brain, but in the real activity of the whole body in its environment, and that for humans, that environment is always already shaped by labour.

The political stakes here are also clear. Pavlovian reflexology in its convergence with American behaviorism promises something similar to Soviet cybernetics: that the “conditions” of human behaviour can be engineered for the ends of social improvement. Of course, centralised state power is needed to achieve such a vision. This runs contrary to the “pedagogical utopia” (Maidansky 2015)² sought by Ilyenkov: in which capitalism is transformed into communism through everyone’s capacity to learn.

At the same time, Ilyenkov draws clear parallels between the focus of his criticism and his own work; for example, between Pavlov’s *second signal system* and his own theory of the ideal. As in much of his work, he reinterprets and reverses the surface resemblance into his own dialectical register. He turns the charge of anthropocentrism which he has often faced onto his scientific critics and at the culmination of the argument we see that Pavlov’s “signal” is not the foundation of consciousness but itself a human artefact.

Against dominant contemporary views in biology, which focus on genetically predetermined essential properties of the individual organism, Ilyenkov here promotes a focus on ecological niche construction: a process by which organism and environment are mutually constituting. A decade later, this approach would be championed by Lewontin and others in the West as a way to appreciate the dialectical character of organic life (Levins and Lewontin 1985). Ilyenkov’s dynamic anti-functional view of organisms as extending into and formed by their environment are resonant with contemporary 4E approaches to cognition (Di Paolo and Potapov 2024).

Adopting a more nuanced stance than in earlier work, Ilyenkov here emphasizes that social learning and niche construction are also vital to non-human animals: that all of life should be understood in terms of an organism’s activity in its metabolism with nature. What makes human beings unique is that they follow conventions. Recent developmental work confirms that a sense of conventionality emerges remarkably early in humans and appears absent in other great apes, but Ilyenkov’s account of why differs sharply from the cognitive-psychological mainstream (Rakoczy et al. 2008). Contra Rakoczy, Tomasello and others, Ilyenkov does not think of conventions in terms of the “mind-reading” of interlocutors but as embodied in symbols (cf. Potapov 2021). He is here closer to Deacon (De Villiers 2007; Deacon 1998). Even within cognitive

2. Thank you to Sascha Freyberg for this point.

science, there is today widespread recognition that the “natural” functions that define human uniqueness are the product of social learning (Heyes 2018). In Ilyenkov’s own time, it was much harder to swim against the mechanistic mainstream, though Leontiev and Vygotsky reached similar views via Baldwin.

In presenting this translation, the aim is not only to make available a late and neglected text, but to foreground a line of critique that remains insufficiently absorbed even where its conclusions are now partially echoed. Ilyenkov’s argument resists easy assimilation: it does not simply anticipate contemporary anti-reductionism, but challenges the conceptual grammar of “information,” “signal,” and “function” through which such positions are often still articulated. Read today, the essay forces a more radical question than whether mind can be reduced to brain, or organism to mechanism. It asks instead how these very oppositions arise from historically specific forms of practice, and what it would mean to think the human body not as a given object of science, but as a socially constituted form of life. If this text still has the capacity to unsettle, it is because the problems it addresses have not been resolved so much as reformulated. The “Tower of Silence” it invokes has, in many respects, yet to be dismantled.³

Towards the Concept of “a Human's Body” versus “the Human Body

We must not think of the human body—must not hold it in our imagination as the premise of our reasoning—as simply a biologically formed organism: the body of an individual specimen of *Homo sapiens*, a body whose only organs are those that are genetically programmed (the brain, hands, legs, teeth, and so forth). To think of it this way would already be an ABSTRACTION—an abstraction of just the same kind as a brain cut from a skull and lying on the anatomist’s table. Such a body is far from the whole human body. It is only a fragment, and within this fragment it is impossible to see—let alone understand—those real functions that, taken together, constitute the specifically human mode of life-activity. In the morphophysiology of the individual body, considered on its own terms, these functions simply do not exist.

After all, we could observe a morphophysiologicaly defined body of an individual of our species in only one case: if an infant could be raised

3. Thank you to members of International Friends of Ilyenkov for the helpful discussion of Ilyenkov’s text, and to Andrey Maidansky for comments.

in absolute isolation from everything belonging to the culture within which every normal individual develops. That is to say, the infant would be surrounded by all the conditions that are BIOLOGICALLY necessary for its existence and development—the conditions of its purely biological existence and maturation into an adult specimen—but every component of the “external environment” that is not a necessary condition of its purely biological existence would be scrupulously excluded.

Is such an experiment conceivable (not merely a “thought experiment” but a perfectly real one)? Yes, although it is *a priori* forbidden on moral and legal grounds. But let us set those aside for a moment, since from a purely biological standpoint they not only do not exist but cannot exist.

In practice it would look like this: the infant develops solely by virtue of the genetically programmed regularities built into it, into its body—and under no circumstances outside it. This means it must exist among objects (components of the environment) necessary for the satisfaction of the organically built-in needs, the “requirements” of the natural order: food, oxygen, temperatures within a certain range. That is roughly all. Very little. And the organism will not merely exist but will develop in accordance with the genetic programs built into it.

At the same time, every component of the “environment” that represents a product of SOCIO-HISTORICAL (social) activity of other human beings must be rigorously excluded. Of other people *as* people, not as biologically functioning “other” specimens of the species. That is, if the presence of another human being is also a necessary condition for the infant’s biological survival, then this other person, under the conditions of such an experiment, must function not as a “human being” but exclusively as a biologically defined body. Say—a mother, or more precisely—the mother’s body, her breast. The infant’s contact with her must be strictly limited to those actions of the mother that are absolutely necessary for its biological survival—and not one grain more. Acts of feeding, removing excretions, ensuring it neither freezes nor overheats, and does not suffocate. That is all.

If you permit any actions on the part of the other person beyond these, you have already violated the “purity” of the experiment—you have introduced “contamination,” you have introduced into its development something that is in no way dictated or shaped by BIOLOGICAL necessity. In other words: no human clothing, no human eating utensils, no sanitary-hygienic devices for removing excretions, and certainly no toys. The infant must be strictly surrounded, as its environment, only

by what is given by NATURE—nature not yet worked over by human labour.

The mother has no right to speak to the child, nor to teach it to walk on two legs (since neither the one nor the other is genetically-biologically “provided”), and she must disappear from the infant’s field of vision as soon as the need for her organism, her body, ceases to be necessary for the infant’s purely biological existence. In other words—as soon as it has acquired the biological capacity to digest something other than mother’s milk—to grab and chew pieces of food found in the natural environment: fruits, vegetables, raw meat, water from a stream, and so on. No bread, no cooked meat, no sugar—these are already historically, not biologically, “necessary” kinds of food. They do not exist in nature.

After this, the child must be left alone with “pre-human” nature and must develop further in the spirit of purely genetic programs, exclusively in accordance with them.

Only in this case would you be able to observe, as the result, the ABSTRACTLY PURE BIOLOGY of the human organism—not yet “spoiled” or “distorted” by any influences external to it. Then you would experimentally obtain only what is genetically-biologically pre-programmed in the body, and nothing more.

Such an experiment—and only such an experiment—would reveal in pure form the genuine facts about what is inherited biologically and what is not. The slightest violation of the listed conditions of a pure experiment would immediately destroy all its scientific demonstrative force.

Although no one has ever conducted such an experiment (and, God willing, no one ever will), it is nonetheless possible to sketch in broad strokes the appearance of its result, where everything purely biological would be presented “in pure form,” cleansed of everything that the SOCIO-HISTORICAL principle might have introduced—i.e. the influence of non-biological, socio-historical components of development.

This would be, first of all, a creature devoid of all specifically human needs without exception, and devoid of all specifically human ways of satisfying them. One can say with nearly one hundred percent certainty that this creature would move through space on all fours, like any mammal, since upright walking is not genetically provided for in its deoxyribonucleic acids, in the chains of DNA—every child must be TAUGHT to walk upright, and with great effort, patience, and persistence.

No facial expressions, since facial expression is an artificial language that a person LEARNS just as they learn verbal language. Still less any

degree of articulate speech—that goes without saying. Most likely, there would be no need for communication with another individual of the same species, since any purely organic need can be satisfied without and outside of such communication. Even the sexual need (this has been proven beyond any doubt by experiments with apes, and proven absolutely unambiguously). Its satisfaction is achieved here by the same means as the act of any other excretion. Still more so the “maternal instinct”—a mythical instinct that is in reality, at 100% already among higher primates, a need CULTIVATED BY THE GROUP, in no way genetically built in.

This, then, would be the creature that demonstrates, in pure form, in abstractly pure form, the PURELY BIOLOGICAL—the purely “animal” principle (component) in the human being. For everything else in the real human being that we observe in ourselves and in others is 100% the product of LABOUR—i.e. not biology as such, but what labour has made of biology. Biology transformed by labour, not biology “*als solche*” [German: as such].

One can hypothesize with a very high degree of confidence that this creature—a fur-covered creature—would run on all fours only as long as and whenever it is hungry, in search of food and water, and having eaten and drunk its fill, would have no further stimulus for movement through space and would therefore sleep and doze until it became hungry again.

What “psychic” mechanisms could form in such a creature? Only those that support the described “way of life,” and no others. This would apparently be that “reflex” which contemporary zoopsychology considers the FUNDAMENTAL psychic phenomenon—the SEARCH-ORIENTATION reflex—that is, the ability to move through space in the direction of food and water, orienting itself by NATURAL signals (sight, smell, sound, etc.) directly emitted and radiated by the NATURALLY OCCURRING object of the BODY’S NATURALLY OCCURRING NEED. And then, probably, “conditioned” (but necessarily connected in a NATURALLY OCCURRING way with the “object of need”) stimulus-signals—such things as, say, the tracks of game on the ground or snow—and nothing more: things that constantly accompany the present object of need.

In contrast to the laboratory conditions in which I.P. Pavlov studied the formation of “conditioned reflexes,” in nature as such, things that have nothing in common with each other are never linked together—a “signal” becomes only a PART OF THE OBJECT OF ORGANIC NEED

ITSELF. The appearance of food will never be linked there, say, with the lighting of a lamp or with a whistle—and precisely for this reason, even in Pavlov’s setup, the animal in which such an unnatural “reflex” has been forcibly created—i.e., a connection created by the ARBITRARY WILL (the will and consciousness of the experimenter)—continues to treat this absurd connection as “natural,” i.e., it takes the lamp to be a PROPERTY OF FOOD—it starts licking it and trying to eat it... And this is hardly surprising.

For the physiologist investigating the BRAIN (and only the brain), it is genuinely irrelevant whether food and “signal” are or are not connected by NATURAL MEANS. But for an animal in nature this is in no way irrelevant. It “connects” only what in the nature of the thing is “connected” inseparably, and it will never fix a PURELY CONDITIONAL connection in the form of a reflex... If it did so, it would perish. An animal—unlike a human being—does not know CONVENTION.

This—and nothing else—is why an animal does not know the “second signal system”: it connects, within the composition of a conditioned reflex, only a signal directly “emitted” by the body of food, i.e. only its own natural property. That is precisely why not merely a joke but a deeply true and witty critique of I.P. Pavlov’s methodology is contained in the well-known anecdote about Pavlov’s dogs (in the frame of the Tower of Silence, two dogs stand, tied up; the newcomer asks her companion: “What’s a conditioned reflex?”; the other answers: “See those two idiots over there? As soon as that light goes on, they’ll immediately bring us something to eat...”).

This is precisely why, upon finding itself in an UNNATURAL (human-created) “environment,” an animal acquires a heap of “conditioned reflexes” that completely disorient it in the forest and condemn it to perish if it ends up there again.

One can therefore successfully study the physiology of the BRAIN in the “Tower of Silence,” but the PSYCHIC ACTIVITY OF AN ANIMAL—absolutely not, because the latter is precisely the ACTIVITY OF THE ANIMAL’S BODY (and by no means of its brain alone), consisting in the active search for food (water, a mate, etc.), of which the “conditioned connections” and “conditioned reflexes” that form in the course of this activity are merely a “moment.” And here the word “conditioned” must be placed in large quotation marks—for there is nothing CONDITIONAL in these connections; what there is, is the fixation of a naturally occurring connection between TWO PROPERTIES OF THE OBJECT OF NEED ITSELF (food, etc.).

This is why the attempt to understand the secret of the psyche even of a DOG by investigating the “reactions” of ITS BRAIN is doomed to failure. The brain is merely one of the organs of its real body, and in it, as such, “psychic activity” can never arise or develop.

This is why the PHYSIOLOGY OF HIGHER NERVOUS ACTIVITY, which investigates the phenomena and processes that occur INSIDE THE BODY OF THE ANIMAL, does not at all touch upon the facts pertaining to the COMPOSITION OF THE PSYCHE, the patterns and laws of its operation. For the psyche is realized not in the space of the ORGANIC BODY but in that real space where the ANIMAL'S BODY SEARCHES AND FORAGES for FOOD, WATER, and so on. In that very real space-time in which the real SEARCH-AND-ORIENTATION activity is actually carried out—the active movement through the space of the naturally occurring “environment,” the space of the ecological niche.

But precisely for this reason, the concept of “signal,” in which the difference between the psyche of an animal and the psyche of a human being is obliterated, strictly speaking is applicable to the human being but in application to the animal represents only the crudest METAPHOR, and can first appear in an animal only where this animal is forced to act in UNNATURAL—human-created—CONDITIONS.

There is not a grain of CONVENTIONALITY in nature, and the very term “conditioned” as applied to a “reflex” is ABSURD. Especially when it is used to characterize the PSYCHE of an animal, rather than the physiology of its brain.

To attempt to describe the situation connected with the analysis of the animal's psyche through the terms “SIGNAL” and “CONDITIONED” (and if so, then also through the term “UNCONDITIONED”) is to already FALL INTO THE CRUDEST ANTHROPOMORPHISM—for both “signality” and “conditionality” directly express only specific phenomena of the HUMAN PSYCHE and are inapplicable to animals in any capacity other than as anthropomorphizing METAPHORS.

Moreover, this anthropomorphising has lodged itself in the minds of natural scientists all the more firmly because it was carried out not only in the imagination but also in the artificial conditions of the Pavlovian EXPERIMENT, where the arbitrary connection that arose in Pavlov's head (the connection between the lamp and food) was realized OBJECTIVELY and thereby turned into a REAL condition of the brains of those unfortunate dogs.

The secret of the “conditioned reflex” lies in PAVLOV’S CONSCIOUSNESS. It is THAT—i.e. Pavlov’s theoretical fantasy about the dog’s psyche—that appeared here under the pseudonym of CONDITIONED REFLEX... And the content of this fantasy is that the PSYCHE supposedly resides IN THE BRAIN, and not in the real life-activity of the animal’s whole BODY among the naturally occurring bodies of the ecological niche—in the space of that niche, and not in the narrow space of the dog’s SKULL.

And from here the next plot follows: the anthropomorphising of the animal’s psyche has as its reverse side the NATURALIZATION of the human psyche—the phenomenon of the CONDITIONALITY of the connections that make up the system of psychic orientation, i.e., psychic connections physiologically fixed in the nervous system.

So-called CONDITIONAL connections between objects and their properties—connections established only within culture, connections between objects that have nothing “in common” with one another in a natural sense (say, between a flash of a lamp and the physicochemical properties of a piece of meat)—PURELY IDEAL CONNECTIONS—in all their UNNATURALNESS are first attributed to the PSYCHE OF THE ANIMAL, and then treated as “natural”—as properties already present in the animal—as properties of the HUMAN PSYCHE, as its fundamental properties—as the “SECOND SIGNAL—CONDITIONAL—ALSO KNOWN AS CONVENTIONAL—system”

Here we have absolutely the same anthropomorphising of nature as in the theologians, so clearly exposed by Spinoza. That is to say, first the INCORRECTLY (in a Cartesian manner) understood psyche of the human being, with all its properties, is projected onto Nature, and instead of nature the human being begins to see God outside itself. And then the INCORRECTLY understood human psyche begins to be presented as a CHARACTERISTIC OF GOD, merely “incarnated” in the human body.

It is absolutely the same here. The positivistically-conventionalistically interpreted HUMAN psyche is projected—through the experiment—onto the dog, and then the dog, as a part of nature, is declared the subject of such specifically human psychic functions as the CONDITIONALITY (conventional character) of psychic connections, which in reality manifest themselves in the WORD. And in the end, the human psyche—its essence—is treated as a synonym of the SECOND-SIGNAL character of connections in the brain...

A double—and therefore inescapable—falsehood. The falsehood of an anthropomorphic understanding of the dog's psyche, which is then taken for a "scientific" understanding of the natural foundation of the human psyche...

The experiments in the Tower of Silence, which supposedly proved the presence of the psyche in the animal's brain in the form of a system of "conditioned reflexes," in fact proved something entirely different, for they experimentally revealed a quite different fact. Namely: together with the naturally occurring mobility of the dog's body in the real space of its natural ecological niche, I.P. Pavlov experimentally SWITCHED OFF the SEARCH-AND-ORIENTATION ACTIVITY of this dog as well; he carried out an OBJECTIVE-EXPERIMENTAL ABSTRACTION precisely from it, from its presence...

Thereby he ensured ideal conditions for observing only those processes that take place INSIDE the dog's organism—processes that in reality require no psyche and reveal no psyche, but yield a sum of phenomena of the dog's brain at work.

And what is revealed, what appears in these phenomena that I.P. Pavlov named CONDITIONED REFLEXES? The search-and-orientation activity of THE EXPERIMENTER—i.e. the psyche of I.P. Pavlov himself, which was characterized precisely by its MECHANISTIC conception of the connection between psyche and brain, supplemented, naturally, by a purely Cartesian interpretation of the essence of the HUMAN PSYCHE—an interpretation based on the myth of CONDITIONALITY, of PURE CONVENTIONALITY—that is, the COUNTER-NATURALNESS, the NON-NATURALNESS of the "connections" that constitute its essence.

This is why, for him, the Word IS A SIGNAL-SYMBOL, a SYMBOLICALLY CONDITIONAL, merely conventionally established connection between two objects that HAVE NOTHING IN COMMON WITH EACH OTHER IN A NATURAL SENSE, nothing OBJECTIVELY SHARED—like between a whistle and the smell of food, like between the letters composing the word "M-E-A-T" and real meat...

And this is precisely the positivistic-mechanistic interpretation of, first and foremost, the HUMAN psyche, the human intellect, which is then projected onto the DOG'S psyche and thereby commits a double sin—the anthropomorphising of the HIGHER NERVOUS ACTIVITY OF THE ANIMAL and the naturalization of the HIGHER NERVOUS ACTIVITY OF THE HUMAN BEING.

Inescapable Cartesianism with not the slightest hope for a Spinozist way out of the dead end in the treatment of the secret of THINKING.

For the “brain” as such, it is indeed a matter of indifference what kind of “connection” arises in it—whether a connection reflecting an OBJECTIVELY GIVEN connection (between the physicochemical properties of food and its smell, colour, etc.; between a hare and the tracks of its paws in the snow, etc.)—or a “connection” that REFLECTS NOTHING, NO CONNECTION OF A NATURAL CHARACTER (between the smell of food and the flash of a lamp or the word “eat”)—i.e. a PURELY CONDITIONAL connection—in Latin, CONVENTIONAL—a connection existing only in an ARTIFICIALLY CREATED setting, in the BODY OF CULTURE CREATED BY LABOUR.

LABOUR—this is what gave birth to all so-called conditional connections. “Conditional,” “conventional” connections between things and their “properties” are in reality not at all CONDITIONAL but rather objectively real connections, established by human labour between things as conditions for the course of labour itself. The connection between a piece of flint and the stick to which it is bound by THE SINEWS OF A KILLED ANIMAL. And not at all by “convention,” not by the imagination, which supposedly can “connect” anything whatsoever with anything else.

Connections of this kind—UNNATURAL, non-natural, and from the standpoint of pure nature INEXPLICABLE—are the prototype of the CONDITIONALITY, the “CONVENTIONALITY” of the connections of the “second signal system.” For a “signal”—unlike a property of food itself—is a completely unrelated DIFFERENT object, placed in connection with food ONLY WITHIN THE PROCESS OF LABOUR, in the process of socially organized life-activity that transforms what is given by nature.

And in nature as such there is no “signal,” no “signality” or “conditionality” (conventionality) of CONNECTIONS BETWEEN THINGS—just as there is no “information,” no “meaning,” no “purpose,” or any other categories brought there only by a mind that anthropomorphizes nature.

This is why the real psyche of the animal includes (so long as it has not, to its misfortune, ended up in a human home) only such “connections” as REALLY EXIST outside its brain and body between two or more properties of one and the same object and are given only “together”—in the way that taste, smell, and the visual properties of food are given together.

In order to obtain facts pertaining to the PSYCHE of the animal (the dog), experimentally purified of all traces of ANTHROPOMORPHISM, what was apparently needed was precisely the reverse experimental abstraction from the one achieved in the "Tower of Silence." Namely—to isolate the animal not from the naturally occurring conditions of psychic functioning, but from the UNNATURALLY CONDITIONAL, from the ARTIFICIAL—the arbitrarily human-organized "connections" between the objects of psychic activity—from connections that exist only for human beings and only within human culture. That is—from the SIGNAL relation in the proper sense of the word.

THE SIGNAL as such (and this term, thanks to Pavlov, penetrated into physiology and the "psychology" based on it) and everything connected with it—this is a word that has from time immemorial designated a phenomenon specific only to human beings and occurring only within human life-activity. According to the definition of this word in the *Explanatory Dictionary*: "Signal—a CONVENTIONAL SIGN for the transmission of information, orders, etc. Storm signals. Railway signals. Light signals. Time signals. Signal of departure. Air-raid signal." "In the darkness and night a cannon shot was heard, then another.—'Ah, a signal!'—he thought.—'The water is rising'" (Dostoevsky).

CONVENTIONALITY—that is what distinguishes a "signal" from any other sensuously perceived object, from a "sign" as an "indicator" (i.e. a part of an object by whose presence one can judge the whole object or situation). Here "conventionality" derives not from the term "condition" as an objective category, but from *to agree upon*—i.e. to conclude an agreement that has meaning only for the participants in that agreement.

A "sign" that is not CONVENTIONAL (thus, a scar is a "sign of a wound," the mewing of cats is "an indiscreet sign of assignments," wrinkles are "a sign of time," etc.)—i.e. a NATURAL consequence or manifestation, independent of any agreement—is not a SIGNAL.

A sign as an INDICATOR—one of the distinguishing features of an object, its hallmark, its own sensuously perceivable (this is essential!) characteristic, property, manifestation, by which one can recognize the object, the thing. In this sense, smell, taste, and the directly visible appearance of a thing are its INDICATORS, its own sensuously perceivable properties and qualities.

A signal, however, is something altogether different. It is a sensuously perceivable object that expresses not itself but something entirely other—ANOTHER object, and is connected with this other object not by

a natural bond inherent in the nature of the object, but by a wholly CONVENTIONAL, ARTIFICIAL bond, established BY AGREEMENT, BY CONVENTION, by ARRANGEMENT.

Remove from the definition of “signal” this CONVENTIONALITY—and nothing of the word “signal” itself remains; it simply becomes a synonym for a sensuously perceivable object, THIS object, which is precisely what is being perceived.

An indicator is a characteristic—a sensuously perceivable one—of the very object that is being perceived. A SIGNAL, however, is something directly opposite. It is a sensuously perceivable characteristic NOT of THIS but of some OTHER object, one that has NOTHING IN COMMON with what is directly perceived. A given sensuously perceivable object with its sensuously perceivable indicators may serve as a signal or may not. Whether it becomes a signal or not depends solely and exclusively on AGREEMENT, on ARRANGEMENT, and the connection here is therefore purely arbitrary, dependent on “good will” and consciousness, and “posited” by them.

Thus the very use of this word (signal) already PRESUPPOSES will and consciousness, includes them as part of its direct meaning. A signal, therefore, exists ONLY for consciousness and will, for a being that possesses them—that is, for a human being.

Typical “signals” are therefore the SYMBOL, the HIEROGLYPH, and similar figures that have nothing in common with the objects they designate, apart from a conventionally established connection.

The following commentary by A.G. Novokhatko accompanied the 2008 Russian publication of this text

It is becoming ever clearer that Ilyenkov turned to Spinoza whenever his thought found itself in the most complex and theoretically intractable circumstances. In this connection, the problem of “Ilyenkov and Spinoza” must also be placed in an adequate worldview context: for Ilyenkov, Spinoza comes into full view (although he is visible in his grand stature from other angles as well—and more than one!) only in the perspective of the general logic of Western European civilization. For Ilyenkov, this is ultimately the standpoint of Hegel and Marx—that is, the communist perspective. This is why Ilyenkov formulates the vector of his relationship to Spinoza sharply and unambiguously, in the spirit of Plekhanov: “Marxism is a species of Spinozism.”

In Ilyenkov’s creative legacy one can identify at least three groups of problems that, in his words, “cannot in any case be untangled without Spinoza.” This was the situation with the analysis of the essence of the

categorical “forms of thought” at the end of the 1950s; later with the fundamental article-conception “The Ideal” in 1962, prepared for the second volume of the Philosophical Encyclopedia; and finally, in connection with the acute need for historico-philosophical foundations in the psychological-pedagogical science that was developing at that time (above all, typhlo-surdo-pedagogy, though not only that!), to which he devoted arguably the greater part of his subsequent life—not only as a theorist but also as a close friend and ally of A.M. Meshcheryakov and his students.

In the 1970s, the Soviet school of theoretical and experimental psychology experienced its flowering. Major synthetic works by A.N. Leontiev, A.R. Luria, P.Ya. Galperin, D.B. Elkonin, V.V. Davydov, and many other outstanding psychologists were published. For the first time, S.L. Rubinstein's manuscript *Man and World* was published. The Institute of Psychology of the USSR Academy of Sciences was established. A multi-volume collected works of L.S. Vygotsky was being prepared for publication. International congresses of psychologists were held with the active participation of Soviet scholars; all-Union congresses and conferences were held regularly. Meshcheryakov's scientific-experimental research received wide domestic and international recognition, and he was posthumously awarded the State Prize of the USSR. The dean of the Faculty of Psychology at Moscow State University, A.N. Leontiev, invited E.V. Ilyenkov and M.K. Mamardashvili to give special courses for his students.

These processes did not go unnoticed in the philosophical community. In the second half of the 1970s and early 1980s, famous theoretical and methodological discussions were held regularly—in some years monthly—at the “Davydov” institute (the Research Institute of General and Educational Psychology of the USSR Academy of Pedagogical Sciences), where A.N. Leontiev, E.V. Ilyenkov, V.V. Davydov, G.P. Shchedrovitsky, F.T. Mikhailov, A.S. Arseniev, and other well-known philosophers and psychologists filled auditoriums of young scholars with their papers and polemical contributions.

The text represents the opening part of a work broad in conception but never completed. It was written in the last years of Ilyenkov's life. The text is sharp, laid out and constructed on carefully verified, precise historico-philosophical intuitions. For all its brevity, it is deeply thought through and seems to have been sketched within the coordinates of the epistemological ideas of Spinoza, Fichte, Schelling, and Hegel. The problem is investigated by Ilyenkov from a direction unexpected for many

psychologists and zoopsychologists. It proved especially difficult, and far from immediately possible, to establish a dialogue with physiologists, neurophysiologists, and geneticists. Even the ever-gentle and tolerant P.Ya. Galperin—one of the most subtle Soviet psychologists, whose opinion Ilyenkov always respected—was never able to agree with Ilyenkov's critique of those apologists of I.P. Pavlov who used the authority of the brilliant Russian physiologist to justify their reductionist programs for the investigation of consciousness, for the vulgar conflation (and even identification!) of physiology and psychology. Ilyenkov's closest allies here were always Academicians A.N. Leontiev and N.P. Dubinin.

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Biography

Kyrill Potapov is BRAID research fellow at the University College London Interaction Centre. His work in human-computer interaction explores how technology mediates everyday experience and social practice, with a focus on personal data interpretation and participatory design. This has involved empirical work with teenagers in schools, in a lab with adults with chronic pain, and in homes to explore households’ sense of their domestic conditions and routines. Theoretically, he is interested in the work of Lev Vygotsky and Evald Ilyenkov as well as the philosophical traditions of enactive cognitive science and the Pittsburgh School of neo-pragmatism. A core focus here is on the role of representation in meaning-making. Most recently, he has explored how systems involving artificial intelligence support or undermine human agency. He is currently researching the potential role of AI in helping people on council estates manage collectively owned and shared solar energy. He is co-convenor of International Friends of Ilyenkov.

GUIDELINES FOR AUTHORS

The purpose of these guidelines is to ensure a clear, standard format for submissions. Please follow all guidelines as closely as possible.

Marxism & Sciences is an open access, volunteer-run journal. Access is free and no submission or processing fees are charged. On acceptance, a minimum publication fee of EUR 50 is requested to cover direct costs. Authors unable to pay may seek a waiver by sending a reasoned request to [science\[at\]soc21.nl](mailto:science[at]soc21.nl). Editorial and production work is undertaken collectively.

The basic descriptions and principles about the content of submissions are formally presented here. However, the priority of the journal is to achieve its aims collectively in collaboration with editors, editorial and advisory boards, authors and readers.

Marxism & Sciences accepts submissions only on the condition of contributing to Marxist conception of totality, materialist conception of history and/or materialist dialectics. Submissions satisfying this condition could be on any topic from any branch of sciences. The journal especially promotes submissions which are written collaboratively by more than one author from different and/or remote disciplines, or cover more than one discipline if written by a single author.

Marxism & Sciences welcomes any contribution that falls within the domain of its aims and scope. However, the journal especially encourages submissions with following four qualifications:

- *Class struggles*: Studies covering class struggles in nature, culture, and/or society.
- *Geographical prevalence*: Studies from Africa, Asia, Latin America, Central, Eastern and Southeastern Europe as well as Western Europe and North America.
- *Gender equality*: Studies by non-male authors and/or from Marxist and socialist feminist
- *Marxist ecology*: Studies which considers human as part of nature, not superior to it.

Each issue of the journal is published based on a specific topic announced publicly at the web page through the Call for Papers (CFP). Submissions on other topics are also welcome.

Marxism & Sciences welcomes a wide spectrum of academic writing styles from articles at one end to essays at the other. *Marxism & Sciences* also welcomes cultural works in fields of arts or traditional and popular culture particularly those related to the specific topic of each issue.

Below are the types of submissions accepted by *Marxism & Sciences*:

- **Articles** (5000-10000 words): Articles are original scholarly manuscripts that contribute to any field of research.
- **Essays** (5000-10000 words): Essays are original contributions with more personal, intuitive and introspective style and do not necessarily have to build on a comprehensive literature review and/or extensive research, unlike scholarly articles. Essays are expected to include critical reflections or political interventions into the past or actual natural/cultural/social issues and/or old or ongoing scholarly and intellectual discussions.
- **Review articles** (6000-12000 words): Critical review of the state-of-art of any topic or any discipline(s).
- **Cultural works** (max. 1200 words of texts or max. 1 GB of audio/visual material): Poem, play, story, music, short film, documentary, video, photographs, graphics design, painting, sculpture etc.
- **Communication** (1500-7000 words): Responses to previously published articles/essays or cultural works in the journal, or actual disciplinary discussions on Marxism, or brief political reviews from Marxist perspectives, or reports about planned or ongoing Marxist projects by scholars and/or activists. This category is intended to foster discussion, exchange, coordinate collaborations and international cooperation, Intention, standpoint, context, addressees and aims should become clear from the texts. Connections to knowledge, research and development are very welcome. Submissions under this category are not peer-reviewed but evaluated by the editors.
- **Translations** (6000-12000 words): Works either with an historical or actual significance written and published in languages other than English.
- **Interviews** (1500-3000 words): Interviews with leading Marxist scholars in any discipline.
- **Book, film, music recording, exhibition and performance arts reviews** (1000-2000 words)
- **Conference and symposium reviews** (1000-2000 words)
- **Letters to editors** (500-1000 words): Short communication on any topic that attracts the attention of the readers.

Open Peer Commentary (OPC): *Marxism & Sciences* may choose an accepted manuscript for an OPC process. The process begins once the approval of the author(s) is acquired.

Academic quality: Please consider originality, theoretical and practical significance, and methodological rigor, referring to the usual standards within your specific discipline or subdiscipline.

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CALL FOR PAPERS

ISSUE 10 | AUTUMN 2026 / ISSUE 11 | SPRING 2027

Dialectics and Life / Issue 10

Issue Editors: Sascha Freyberg & Charles T. Wolfe

This special issue explores the relationship between Marxism and the life sciences, focusing on the conceptual intersection between dialectics and life. We welcome contributions that examine how Marxism can engage with contemporary biological research, and how developments in fields such as systems biology, evolutionary theory, ecology, developmental biology, cognitive science, and microbiome research may challenge, refine, or enrich dialectical materialist approaches.

The issue seeks a two-way exchange between Marxist thought and current research in the life sciences. Biological findings may revise philosophical categories, while historical materialism can clarify the social conditions and assumptions of scientific practice. Contributions grounded in active research are particularly encouraged, including evolutionary development, synthetic biology and cognition, with attention to metabolism, organism-environment relations and ecological questions.

Topics of interest include, but are not limited to:

- What concept(s) of life can be found in Marx and Engels, and how do they relate to contemporary biology? How does Engels' metabolic definition of life — in the Dialectics of Nature and Anti-Dühring — connect to current systems biology and the extended evolutionary synthesis?
- What is the systematic role of Stoffwechsel in Marx? Does it constitute a theory of the living, or merely a figure of thought? How does it connect to accounts of metabolic rift and ecological crisis?
- How can the dynamical systems approach — with its negative-feedback units across scales from cell to ecosystem — be brought into dialogue with the Marxist dialectical tradition? What are the gains and limits of applying the same toolkit to social processes?
- How might concrete empirical research programs in evolutionary biology, ecology, systems biology, neuroscience, or microbiome science illuminate — or challenge — dialectical accounts of organism-environment interaction, emergence, and multi-level causation?
- In specific experimental systems or modeling practices, where do tensions arise between reductionist, gene-centred, or mechanistic explanations and more relational or systemic approaches — and how might these tensions be analysed in dialogue with Marxist or dialectical frameworks?
- What is the relation between the 'strong' dialectical claim (that life or nature is dialectical in itself) and the 'weak' methodological claim that living organisms must be understood dialectically, i.e. holistically and anti-reductionistically?
- How do DST, enactivism, and the 4E paradigm engage with, and potentially correct, the Marxist materialist tradition — and vice versa? What mutual corrections arise from these encounters?
- How does the concept of living labour in Marx connect to a broader theory of organic life, metabolic ecology, and the reproduction of life under capitalist accumulation?
- What does a Marxist concept of life contribute to bio-political discussions concerning the governance and commodification of bodies, populations, and ecological systems?

We particularly encourage submissions from life scientists reflecting on the conceptual implications of their research, as well as contributions from philosophy, history and philosophy of science, political theory, and critical theory.

Abstracts: 1 June 2026 (500 words). Acceptance notification: 1 July 2026. Full papers: 1 September 2026. Expected publication: late autumn 2026.

Marxist Aesthetics / Issue 11

Issue Editors: Jarek Paul Ervin & Sascha Freyberg

Marxist aesthetics emerged from the historic conditions that followed the October Revolution. Its intellectual debates and practical tasks were defined by a fundamental relationship to emancipatory cultural politics—not only for the socialist realm but for political movements all over the world.

Following the collapse of the Soviet Union, the dominant intellectual order retreated from Marxism, along with many artists, activists, and educators who formerly supported its goals. Though preserving the moral critique of the Marxist Left and chasing its radical cache, the post-communist liberal paradigm renounced its mission to serve as the scientific self-consciousness of the working class or a hammer to forge its future.

Rejecting humanism and universalism, its proponents shifted toward assimilationism—if not total resignation and a retreat into the "Grand Hotel Abyss." Consequently, the post-communist liberal Left has struggled to make sense of the economic, political, and cultural turmoil of recent decades.

While this moment marks a crisis for the Left, it also has opened the door for a new group of intellectuals, artists, and organizers who are unfettered by the ideas of the previous century or held hostage by its crumbling institutions (the university, the microset, the NGO, etc.). Central to these varying projects has been a return to Marxism: its history and its future.

As promising as this shift is, it has been slower to register in the corner of academia and the popular press that deals with the arts: music, film, literature, visual art, television, and other creative media. Arts commentary in a nominally Left-wing vein still largely takes for granted the assumptions of post-Cold War triumphalism, which includes the *damnatio memoriae* of aesthetic thought from outside the capitalist world—not to mention a fundamental detachment from political movements designed to realize genuine alternatives. The despair which has made itself felt in this realm has been called "capitalist realism": a state of no escape still yearning for post-capitalist imagination.

For this issue, we invite submissions that break with the above state of affairs. What does it mean to conceive of aesthetics as a historical materialist pursuit? How can the arts overcome despair and reinvigorate post-capitalist desires? What can we learn from the aesthetics of the Global South and the socialist-identified states? What possibilities arise from studying art with the methods of the natural and social sciences? What role do art and aesthetics play in the working-class political movement? And how can Marxist aesthetics resuscitate our imagination of post-capitalist life?

We especially welcome submissions on the following topics:

- General research on Marxism and art/aesthetics
- Aesthetics and the return to historical materialism
- Art/theory from socialist-identified states (the USSR, CEE states, China, Cuba, etc.)
- Key debates, critical perspectives, or polemics about Marxist aesthetics
- Marxist aesthetics from the Third World/Global South
- Socialist realism, Marxist avant-gardism, or other traditions of political art
- Aesthetics across the humanities/social sciences/natural science division
- Studies of cultural criticism – historic critics, interpretive methods, etc.
- Empirical, analytic, or non-humanistic methods for the study of art
- Culture and emancipation – theorizing post-capitalist culture
- Artistic responses/contributions to contemporary political struggle
- Creative works, criticism, translations, etc. (see below)

We also are happy to consider proposals that connect aesthetics to any of the core topics in the aims and scope of the journal: foundational studies in Marxist sciences and philosophy; class struggles; studies off/from the Global South; studies related to gender or feminist perspectives; and Marxist ecology. Additionally, we welcome contributions in our other core formats: reviews, cultural works, communications, translations, and archival publications. See our basic guidelines for authors.

Proposals: 1 May 2026; include an abstract of up to 300 words, an article outline and a short biography. Accepted articles: 1 July 2026. Expected publication: April 2027.

NOTE

Please submit manuscripts prepared for blind review with a separate title page that includes the title, affiliation and contact information. Send submissions to marxismandsciences[at]gmail.com. Full calls and guidelines are available at marxismandsciences.org.

DEADLINE

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