

Marx's Ecology Materialism and Nature

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Part -1 Introduction

"It is not the unity of living & active humanity with the natural, inorganic conditions of their metabolic exchange with nature and hence their appropriation of nature, which requires explanation or is the result of a historic process, but rather the separation between these inorganic conditions of human existence and this active existence, a separation which is completely posited only in relation of wage labor & capital."
Karl Marx, Grundrisse

Materialism as a theory of the nature of the world arose with Greek philosophy of antiquity in the western world. Marx's doctoral thesis, completed in his early twenties, was on Epicurus, a Greek philosopher about 500 BC. Epicurean materialism emphasized the mortality of the world; the transitory character for all of life & existence. (*While Marx studied Greek Materialist Philosophy of antiquity, Materialist Philosophy also developed elsewhere, including India, where of the six schools of philosophy in Hinduism some from over a thousand years B.C., four were not based on the existence of a Divine Being, i.e. they were materialist, of which two are known as Lokayat and Sankhyavad, literally meaning Numerology. It was not until the 8th century, faced with the rise of Islam and aggressiveness of Christianity (Crusades) that the Vedanta School of Philosophy, one that is currently dominant in Hinduism, that emerged over others, possibly as a reaction to these developments in West Asia.*)

German philosopher, G.W.F. Hegel (1770-1831) in his dialectical philosophy argued that the objectification and alienation that separated human beings from the external world, and thus set up problems of cognition, is in the process of being overcome through the development of the spirit in history. Hegel wrote: "*The idealism of philosophy consists in nothing else than recognizing that the finite has no veritable being*".

Marx, who recognized Hegel's contribution in identifying human alienation, departed here from Hegel's idealist philosophy. To Marx, the correctness of our views of the world, the confirmation of our reason, is established as we transform the world and ourselves with it, creating our own distinctly *human-natural* relations – by acting, i.e. through our material praxis (practice). Epicurus, according to Marx had played a crucial role in the formation of a dialectical conception of reality, because he was the first to "acknowledge human self consciousness as the highest divinity." Epicurean materialism emphasized the mortality of the world and the transitory character of all life and existence. Death was immortal (*mors immortalis*). Hence, Epicurus' philosophy had no need of Aristotelian final causes.

Marx's notion of the alienation of human labor was connected to an understanding of the alienation of human beings from nature. From medieval up thru the nineteenth century, the dominant world-view was the teleological one of the Great Chain of Being (later modified by Natural Theology), which explained everything in the universe in terms of divine providence, and secondarily in terms of creation of the earth by God for "man". All species were separately created.

In 1842, Darwin's evolutionary account of nature was derived from this uncompromising strain of Epicurean materialism. This remarkable bio-historical work, complemented by work of German agricultural chemist Justus Von Liebig, with his emphasis on the circulation of soil nutrients and its relation to animal metabolism, that modern ecology emerged in the mid-19th century.

Epicurus' philosophy was to play an extraordinary role in the development of materialism of the English and French Enlightenments, which too was form of a struggle against the essentially Aristotelian philosophy of nature promoted by Christianity (& Hinduism) in which matter consisted of four elements: air, fire, water & earth.

Implicit in Epicurus' philosophy was the notion that knowledge both of the world of the atom (imperceptible to the senses) and of sensuous reality arose from the inner necessity of human reason embodied in abstract individuality and freedom (self determination). Idealism in contrast, is usually credited with having provided the "active" side of the "dialectic of perception". Human beings cease to be mere products of natural or supernatural forces - Marx observed, basing himself on Epicurus - when they related themselves not to some "different existence" (such as in relation to God), but to other individual human beings.

Holbach in his *System of Nature* argues that "the idea of divine powers that rule the world has always been associated with that of terror...Nothing therefore could be more dangerous than to persuade man that a being superior to nature exists, a being before whom reason must be silent and to whom man must sacrifice all to receive happiness". Commenting on this, Marx wrote: In fear, and specifically an inner fear that cannot be extinguished, man is determined as an animal, shorn of all self determination." This for Marx was the greatest sin of religion.

The Materialist Conception of Nature

Ludwig Feuerbach (1804-1872), a central figure among young Hegelians, in his *History of Philosophy from Bacon to Spinoza* wrote: "Bacon was the first to recognize the originality of nature; to recognize that nature cannot be conceived in derivation from mathematical or logical or theological presuppositions, or anticipations, but can and ought to be conceived or explained only out of itself". This departed from Hegel's philosophy, in which nature was not something that contained within itself the means of its own self-determination, its own meaningful action. It was reduced in his system to a mere mechanical entity. Hegel had separated essence from existence. It was here that Hegel's abstraction of the human mind alienated from nature is what Feuerbach

considered as denial of sensuous existence, and thus fell in the realm of idealism rather than materialism.

For Feuerbach, “there is no other essence which man can think, dream of, imagine, feel, believe in, wish for, and adore as the absolute, than the essence of human nature itself”. Here he embraced also “external nature; for as man belongs to the essence of Nature, in opposition to common materialism, so Nature belongs to the essence of man in opposition to subjective idealism; which is also the secret of our ‘absolute’ philosophy, at least in relation to Nature. Only by uniting man with nature can we conquer the super-naturalistic egoism of Christianity”. (*It can be added of other religions in general*).

“Matter” Feuerbach declared “is an essential object for reason. If there were no matter, reason would have no stimulus and no *material* for thought and hence no content. One cannot acknowledge matter without acknowledging reason. Materialists are rationalists.”

Marx saw in it humanist materialism transcended mechanical materialism, but felt it was insufficiently connected to politics. Critically studying Feuerbach, English Political Economy and French Socialism, Marx developed the concept of alienation of labor in his 1844 *Economic and Philosophical Manuscripts*.

“The universality of man manifest itself in practice” Marx wrote “ in that universality which makes the whole of nature as his *inorganic* body, (1) as a direct means of life and (2) as the matter, the object and the tool of his activity...Man lives from nature, i.e. nature in his body, and he must maintain a continuing dialogue with it if he is not to die. To say that man’s physical and mental life is linked to nature simply means that nature is linked to itself, for man is part of nature.”

It follows that alienation is at one and the same time the estrangement of humanity from its own laboring activity and from its active role in the transformation of nature. Such alienation according to Marx, “estranges man from his own body, from nature as it exists outside him, from his spiritual essence, his *human essence*”. Moreover, this is always a social estrangement.

The domination of the earth itself, for Marx, took on a complex, dialectical meaning derived from his concept of alienation. It meant both the domination of the earth by those who monopolized land and hence the elemental power of nature, and also the domination of the earth and of dead matter (Capital) over vast majority of human beings. The root of private property, which predates capitalism – were in feudal landed property. The private land became the inorganic body of the feudal lord, who used it to dominate the peasantry. But, it is the bourgeois society, which brings this domination of the earth (and thru it domination of humanity) to perfection. Money therefore was the essence of man’s alienation from nature.

Of the new industrial factories, Marx in 1844 *Economic and Philisophical Manuscripts*: “ Even the need for fresh air ceases to be a need for the worker... Moreover, the worker has no more than a precarious right to live in the human cave which is now polluted. He

can now be evicted should he fail to pay for this existence at any time....*Dirt* – this pollution and putrefaction of man, the *sewage* of civilization – becomes an *element of life* for him. Universal unnatural neglect, putrefied nature, becomes an element of life for him.” (Marx words above, written in 1844 are true for perhaps 90% of the industrial and service workers of the world even today).

Association of Producers versus Political Economy

The abolition of the monopoly of private property in land, Marx argued “would be realized thru association (of producers) which when applied to the land retains the benefits of large landed property from an economic point of view and realizes for the first time the tendency inherent in the division of land, namely equality. At the same time, association restores man’s intimate links to the land in a rational way, no longer mediated by serfdom, lordship and an imbecile mystique of property. This is because the earth ceases to be an object of barter, and thru free labor and free enjoyment once again becomes an authentic, personal property for man”. (One can therefore now ask the question: Was Stalinism, in collectivizing farms, putting in practice Marx’s idea of association of producers or was it to reduce peasantry from its petty bourgeois status to that of serfs for the state capitalists. Or, was it something else?)

Natural Theology

If the Enlightenment and particularly the scientific revolution of the 17th & 18th centuries had broken down the old teleological perspective, rooted in the scriptures and ancient Aristotelian philosophy, it cannot be said that Enlightenment was unambiguously anti-religious or materialist.

Religion was, again sought, to be established thru Natural Theology. Newton, Boyle, both scientists and Reverend John Ray, both a scientist and theologian (1627-1705), went reconnecting nature, science, religion, the state and the economy, so as to resurrect a teleological view compatible with – if not a feudal universe – at least the system of landed property & industry that constituted early agrarian capitalism.

While started in late 16th century, the natural theology developed in the 17th, 18th 19th centuries that argued, by John Ray: “If the Works of Nature are better, more exact and perfect than the Works of Art, and Art effects nothing without Reason, neither can the Works of Nature be thought to be effected without Reason.” This was the reason for divine Architect. (*‘Intelligent Design’ folks are reinterpreting John Ray to look like they belong in the 21st century, while their minds are stuck in the 19th*).

Part - 2 Natural Theology and Political Economy

Thomas Robert Malthus (1766-1834), an English curate wrote the *Essay on Population* in 1798, which had a great influence on Archdeacon William Paley (1743-1805), who,

in his *Natural Theology* theorized: “Mankind will in every country” always “breed up to a certain point of distress”, which was part of the design imposed by Deity. Hence “population naturally treads upon the heels of improvement. Yet, such limits, if they can be spoken of at all, apply” he insisted “only to provisions for animal wants” while moral needs are capable of unlimited fulfillment. “We should reason from nature up to nature’s God and not presume to reason from God to nature”. The Supreme Being, through the “gracious design of providence ordained that population should increase faster than food.” He argued that hardship awakened “Christian virtues”.

Malthus argued that population, when unchecked tended to naturally increase at a geometrical rate while food supply at best at an arithmetical rate. Therefore, attention needed to be given to actual checks that ensured that population stayed in equilibrium with the limited means of subsistence. Plague and famine according to him were the checks on population. Without this any improvement of society in his opinion was impossible. On which Marx interpreted Malthus’ intent: “it only goes to prove the necessity of a class of proprietors, and a class of laborers.” So, for Malthus: “The impoverished head of household who has chosen to marry without the means of supporting a family should be taught to know that the laws of God had doomed him and his family to starve for disobeying their repeated admonitions: that he had no claim of right on society for the smallest portion of food, beyond that which his labor would fairly purchase.”

In his second essay on population (1803), Malthus argued: “With regard to illegitimate children, after the proper notice has been given, they should on no account whatever be allowed any claim on parish allowance...The infant is, comparatively speaking, of no value to the society, as others will immediately supply its place.”

A Malthusian political economist, and a natural theologian, a parish minister, Thomas Chalmers (1780-1847) was professor of divinity at the University of Edinburgh and an influential preacher. He wrote several books that together came to be known as the *Bridgewater Treaties*, in which he reduced and interpreted scientific knowledge that had so far been challenging religious interpretation of nature as series of proofs of the wisdom, goodness and benevolence of God in opposition to materialists. Here is one example of his arguments: “The tendency of atheistical writers is to reason exclusively on the laws of matter, and to overlook its dispositions. Could all of the beauties and benefits of the astronomical system be referred to the single law of gravitation, it would greatly reduce the argument for a designing cause....If we but say of matter that it is furnished with such powers as make it subservient to many useful results, we keep back the strongest and most unassailable part of the argument for a God. It is greatly more pertinent and convincing to say of matter, that it is distributed into such parts as to ensure a right direction and beneficial application for its powers. It is not so much in the establishment of certain laws for matter, that we discern the aims or the purposes of intelligence, as in certain dispositions of matter, that put it in the way of being usefully operated upon by the laws,”

Chalmers saw the signature of a Deity not only in external nature as such, but also in moral and intellectual life – and particularly in the realm of the economy. “Had a legislator of supreme wisdom and armed with despotic power been free to establish the best scheme for augmenting the wealth and the comforts of human society – he could have devised nothing effectual than the existing constitution of property, which obtains so generally throughout the world.” For Chalmers, the world of trade and the market was “one of the animate machines of human society” and the mark of the “intellect that devised and gave it birth.” So he followed “capital ever suits itself, in the way that is best possible, to the circumstance of the country – so as to have uncalled for, any economic regulation by the wisdom of man; and that precisely is because of a previous moral and mental regulation by the wisdom of God.” On this basis he attacked the Poor Laws that gave the displaced persons from the countryside and herded into the industrial cities to become a cheap proletariat a survival option. He termed Malthusian population theory “a pure case of adoption, between the external nature of the world in which we live, and the moral nature of man, its chief occupier.” In Chalmers, natural theology and political economy are fused – into defending of existing social and religious order.

It was this marriage of the political economy of Malthus with Christian natural theology, which made parson naturalists such a powerful threat, not only to the working class but also to all prospects for the unification of human beings with nature. Radical opposition to such views was therefore to play a crucial role in the development of the materialist conception of history by Marx and Engels.

Part - 3 **The Materialist Conception of History**

The narrow parsonic morality and the Malthusian ‘principle of population’ was a central theme of Marx’s political economy from 1844 to his death in 1883. For Engels, in his 1844 publication, *Outlines of a Critique of Political Economy* (edited by Marx), the essence of Malthus’ population theory lay in its religious conception of nature – an economic expression of the religious dogma, in an attempt to merge protestant theology & parsonic naturalism with economic necessity of bourgeois society (i.e. exploitation of human labor). “The immediate consequence of private property (in land) was the split of production into two opposing sides – the natural and human: the soil, which without fertilization (and working over) by man is dead and sterile, and human activity, whose first condition is that very soil.”

By removing the population from the land (enclosures movement), an intense exploitation of both land and humans became possible in the bourgeois social order. Malthusian population theory was designed to compel the estranged human beings to accept the harsh laws of political economy. In contrast Engels argued that it was necessary to reject “the crazy assertion that the earth lacks the power to feed man”, an assertion which he described as “the pinnacle of Christian economics” – at a time when only a third of the earth was cultivated, and where productivity of cultivation could, on that land be increased six-fold.

(In the 1960s, when I first arrived here from India, “population bomb” theory was popular among the intellectuals here. India and China were said to be those megaton bombs. What the intervening years with even a minimal industrial and agricultural development, public health and public education, and food distribution along with the destruction of feudal culture enslaving women showed, the population begins to stabilize when utter poverty and threat to survival is eliminated, with minimum Keynesian economic management. The idea of real effective measures for the security of life is only possible under socialism).

For Engels, the 18th century materialist revolt against religion was incomplete as it “posited Nature instead of God as the Absolute facing Man”. It was this rejection of revolutionary materialism in the form of utilitarianism of natural expediency, behind which lurked the old religious idea of providence, that made Malthusianism so dangerous and which made “every proposition” of economics, according to Engels, Christian in character.

In the 1834 English New Poor Law, the English State sought to no longer eradicate pauperism, which it had come to understand was the basis of its power (to create industrial proletariat from the enclosures movement for urban factories,) and this was assisted by the Malthusian parsonic naturalism.

Engels explained it in *The condition of the Working Class in England* in 1844 thus: “The old Poor Law, which had rested on the act of 1601 naively started from the notion that it is the duty of the parish to provide for the maintenance of the poor. Whoever had no work received relief, and the poor man regarded the parish as pledged to protect him from starvation. He demanded his weekly relief as his right, not as a favor, and this became, at last, too much for the bourgeoisie.”

It was in response to Malthus’ theory that Engels developed the concept of *reserve army of labor*, which was to be central to Marxian political economy. *(In the US, whenever the unemployment rate officially goes below 5%, which is nearly double of that in reality including under-employment, it becomes the duty of Federal Reserve Chairman to raise interest rates in “the interest of keeping down inflation”. The vast majority of population in the US is so conditioned by the bourgeois propaganda that it thinks it was being done as a favor to them.)*

Both Engels and Marx, in surveying the conditions of the working class in industrial towns were concerned about environmental toxins. With the estrangement of general human needs that characterizes capitalism, according to Marx, “Light air etc. -the simplest *animal* cleanliness – ceases to be a need for manThe Irishman has only one need left – the need to eat, to eat potatoes, and more precisely to eat *rotten potatoes*, the worst kind of potatoes. But England and France already have (their) *little Ireland* in each of their industrial cities.” *(Today that condition of the working classes exists for 90% of the world outside of North America and Western Europe, and probably in parts of the former USSR).*

The New Materialism

The Hegelian system had stood opposed to materialism, viewing nature as nothing more than the alienated essence of the absolute idea. The young Hegelians of 1930s in their “fight against positive religion were driven back to Anglo-French materialism” according to Engels. This contradiction between Hegelian idea and its followers was what Feuerbach “pulverized” and put materialism on the throne again. But the abstract materialism of Feuerbach, even as it refuted the Hegelian system, was static and ahistorical in its conception. Its humanism lacked a concept of transformative practice (praxis). Being for Feuerbach was the same as essence, a contradiction between the two was not allowed, leading to nihilism. In dissolving religious alienation into material existence, Feuerbach thus lost sight of the real earthly alienation.

Marx: “The chief defect of all previous materialism – that of Feuerbach included – is that things, reality, sensuousness is conceived only in the form of the *object*, or of *contemplation*, but not as *human sensuous activity* and practice. Hence, it happened that the *active* side, in contradistinction to materialism, was set forth by idealism – but only abstractedly, since of course, idealism does not know real, sensuous activity as such.” “Feuerbach”, Marx argued, “forgot that religious self-alienation, the formation of a duplicate, imaginary, religious world superimposed on a real one beneath it, also means that that the secular forms are characterized by self-cleavage and must be criticized and transcended.”

For Marx “the human essence is no abstraction inherent in each single individual. In its reality, it is the *ensemble* of social relations.....The standpoint of old materialism is ‘civil society’; and the standpoint of the new materialism is *human* society or associated humanity.”

A practical materialism as conceived by Marx therefore recognized that “the coincidence of the changing circumstances and of human activity can be conceived and rationally understood only as revolutionizing practice.....The philosophers have only *interpreted* the world in various ways; the point however is to *change* it.”

One consequence of Marx’s new – practical materialism, however was that the focus of materialist thought shifted from nature to history, without denying the ontological (as the next) priority of the former. Even though Marx’s materialist conception of history (historical materialism) was rooted in the materialist conception of nature, which together constituted the realm of natural history, his emphasis in his social critique was overwhelmingly on the historical development of humanity and its alienated relation to nature, and not on nature’s own evolution. It is from here that socialists of certain variety narrowed Marxism and divorced it from nature – in a way to allow materialism to regress to mechanistic materialism.

In contrast, Marx and Engels posit: “The first premise of all human existence, and therefore of all history is that men must be in a position to live in order to be able to “make history.” But life involves before everything else, eating and drinking, clothing

etc. The first historical act is thus the production of the means to satisfy these needs, the production of material life itself. And indeed this is a historical act, a fundamental condition of all history, which today, as thousands of years ago, must daily and hourly be fulfilled merely in order to sustain human life.”

In the historical evolution of the division of labor, Marx and Engels argued “the division of labor inside a nation leads at first to the separation of industrial and commercial from agricultural labor, and hence the separation of town and country, and to the conflict of their interests.” It was this division they insisted, that resulted in the severance of the rural population from “all world intercourse, and consequently, from all culture.” Hence, “the abolition of contradiction between *town & country* is one of the first conditions of communal life.”

Part - 4 **The Materialist Conception of Nature**

In the materialist conception of nature it was established in the 19th century that not only life but geology and geography also evolved over time, i.e. these also were historical. On the origin of life and its impact on planet earth, noted scientists Richard Levins, an ecologist and Richard Lewontin a geneticist, both at Harvard University faculty have written several books, most well known of them is also coauthored by paleontologist Stephen Jay Gould, *The Dialectical Biologist (published in 1980s)*: “The law that all life arose from life is true only for about a billion years. Life originally arose from inanimate matter, but that origination made its continued occurrence impossible, because living organisms consume the complex organic molecules that recreate life *de novo*. Moreover, the reducing atmosphere that existed before the beginning of life has been converted, by living organisms themselves, to one that is rich in reactive oxygen.” Here then is the beginning of historical nature.

Russian ecologist V.I. Vernadsky in his theory in *The Biosphere (1926)* writes” “the atmosphere we know it, was produced by life itself. By the atmosphere, life had altered the conditions from those that had made “spontaneous generation (of life) possible.” Speaking of German historical geographer Karl Ritter (1779-1859), New England conservationist George Perkins in his *Man and Nature (1864)* wrote: “Whereas Ritter and Guyot (a Swiss follower of Ritter) think the earth made man (mother earth), man in fact made earth” – this was to depart from the geographical determinism of Ritter, who was an influence on Hegel. However, he accepted Ritter’s critique that the disentrainment of human beings from nature which progressed with civilization, meant that humanity was now a potent force in the transformation of the globe, with often devastating consequences.

Marx, who studied Ritter, also turned Ritter (like he did Hegel) around in his *The German Ideology*, by pointing out that earth that existed prior to the rise of humanity was now exceedingly difficult to find.

Critique of True Socialists

An intellectual trend developed in the mid-1840s among German writers who mixed an abstract humanism and abstract naturalism with various concepts drawn from political economy, in order to generate a notion of “true socialism” predicated on the idea of re-establishing true humanity and true nature, all the while ignoring material bases of human development & natural history.

Wishing to reconcile humanity with nature, Rudolph Matthai, a True Socialist invited the reader to take a walk in the realm of “free nature” in order to bridge the alienation of human beings from nature by spiritual means afforded by nature itself thus: “Gay flowers,... tall and stately oaks,...their satisfaction, their happiness lie in their life, their growth and their blossoming,...an infinite multitude of tiny creatures in the meadows,...forest birds, ...a mettlesome troop of young horses,...I see (says “man”) that these creatures neither know nor desire any other happiness than that which lies for them in the expression and enjoyment of their lives. When night falls, my eyes behold a countless host of worlds, which revolve about each other in infinite space according to eternal laws. I see in their revolutions a unity of life, movement and happiness.”

True socialists saw discord as entering into this world thru the hand of “man”, i.e. abstract humanity. For Marx and Engels, the error of this form of “philosophical mystification” lay in the notion that humanity should be reunited with a “free nature”, so the “summons” to nature “presupposing that this dichotomy (alienation) does not exist in nature” as well. And since “man” too is a “natural body”, it should not exist for humanity either. To this, in opposition, Marx and Engels hold up the struggle for existence that takes place in nature, which can no longer be seen as pure. “ ‘Man’ could also observe a great many other things in nature, e.g., the bitterest competition between plants and animals.”

For Marx and Engels, reactionary sentimentalism about nature which sought to re-establish old feudal relations of hierarchy, while denying changing material conditions, were to be rejected.

The Mechanistic “Prometheanism” of Proudhon

Pierre Joseph Proudhon (1809-1865), a French socialist had a great deal of influence – both positive and negative on Marx’s thought. He is best known for his answer posed in his famous work: *What is Property?*: “It is theft.” In this he displayed his anarchistic bent. But, in this work, he also advanced materialist thought and ecological imperative. In *The Holy Family*, Marx and Engels offered their praise thus: “Proudhon makes a critical investigation – the first resolute, ruthless and at the same time scientific investigation – of the basis of political economy, *private property*. This is the great scientific advance he has made, an advance, which revolutionizes political economy and for the first time makes a real science of political economy possible.” Two years later Marx was to respond differently to a later work of Proudhon, *The Philosophy of Misery* (published in 1846, also known as *System of Economical Contradictions*). In this work he

developed the thesis which was termed *philosophy of poverty* which stated that the goal of a society is to create the greatest economic value and variety for society and to realize this proportionally for each individual according to the just distribution of economic rewards in accordance with labor time. “Whenever labor has not been socialized... there is irregularity and dishonesty in exchange” and society is not harmonious. He decided to depict society and to symbolize human activity by personifying both in the name of “Prometheus”, who according to his interpretation of fable was the symbol of human activity. “Prometheus steals the fire from heaven and invents art, sees the future, and aspires with Jupiter for equality; Prometheus is God. Then let us call society Prometheus...” For Proudhon, “Prometheus... extends his conquest over Nature.” For Proudhon, the essence of the antagonism between proletariat and society lay simply in the division of labor, which prevented harmonious development. His answer was machinery, the key to human progress, thus the mechanistic Prometheanism: “Every machine may be defined as a summary of several operations, a simplification of powers, a condensation of labor, a reduction of costs. In all these respects machinery is the counterpart of division, therefore thru machine will come *parcellaire* laborer, a decrease of toil for the workman, a fall in the price of product, a movement in the relation of values, progress towards new discoveries, advancement of the general workforce.” Proudhon also went on to defend rent on agricultural land.

To this *The Philosophy of poverty* of Proudhon, Marx responded with his critique in *The Poverty of Philosophy*, arguing that Proudhon, rather than explaining the historical genesis of social relations, by recognizing that human beings are “actors and authors of their own drama”, ... instead had given a historico-philosophic account of the source of an economic relation, of whose historic origins he is ignorant, by inventing the myth of Prometheus, ignoring all historical *development* and hence historic specificity. Proudhon, according to Marx, was translating real human relations into relation between things and was thus reinforcing status quo.

“Nothing is more absurd” Marx wrote “than to see machinery the *antithesis* of the division of labor, the *synthesis* restoring unity to divided labor.” Social relations, technology and ideas, in Marx’s view were, were constantly changing, and could only be viewed as fixed forms, thru a process of reification (i.e. the translation of real human relations into relations between things) in which their historical roots were forgotten.... There is a continual movement of growth in productive forces, of destruction in social relations, of formation in ideas: the only immutable thing is the abstraction of movement – *mors immortalis*.

Marx also criticized Proudhon for his support of land rent as “binding man to nature.” ...“Rent has so completely divorced the landed proprietor from the soil, from nature, that he has no need even to know his estates, as is to be seen in England. As for the farmer, the industrial capitalist & the agricultural worker, they are no more bound to the land they exploit than are the employer and the factory worker to the cotton and wool they manufacture: they feel an attachment only for the price of their production, the monetary product.” Contrary to Proudhon, then “rent instead of *binding man to nature*, has merely,

(under capitalist relations of production) bound the exploitation of the land to competition.”

Against Proudhon’s confused mysticism, even idealism, Marx counter-posed the materialist principle: Practical materialism and the recognition of the historical, contingent, and transitory nature of reality – which could only be approached, according to Marx, from the standpoint of material production, or the struggle of human beings to exist.

Ecology & the Communist Manifesto

The critiques of both Malthusianism and Proudhon’s mechanistic “Prometheanism” were central to the argument of *The Communist Manifesto (1848)*, which presented the materialist conception of history in the form of a revolutionary manifesto, for the first time. The Manifesto, as read from ecological perspective is often viewed as the prime locus of Marx’s own so called “Promethean” view of human-nature relation. According to this view, in Ted Benton’s (a socialist environmentalist) words: “Marx has adopted a ‘productivist’ ‘Promethean’ view of history”. Reiner Grundmann in *Marxism and Ecology* contends that “Marx’s basic premise “ was the “Promethean model” of the domination of nature, a position he then attempts to defend. For liberal Victor Ferkiss: “Marx’s attitude toward the world always retained that Promethean thrust, glorifying the human conquest of nature”. Anthony Giddens: “Marx’s concern with transforming the exploitative human social relations expressed in class systems does not extend to the exploitation of nature”. Social ecologist John Clark: “Marx’s Promethean ..”man” is a being who is not at home in nature, who does not see the earth as the ‘household’ of ecology.

The charge of “Prometheanism” (ironic that Marx, who had raked Proudhon over the coals for it should now be found guilty of it himself) carries implicitly within it a certain anti-modernist assumptions that have become sacrosanct within much of Green theory.

True environmentalism, it would seem demands rejection of modernity itself. Marx and Marxism as a whole are thus being branded as extreme version of modernism, thus more easily condemned. Wade Sikorski, a postmodernist environmentalist, writes that “Marx... was one of our ages’s most devout worshippers of the machine. Capitalism - was to be forgiven its sins because – it was in the process of perfecting the machine”.

For Marx however, the above Green critique notwithstanding, the Prometheus to be admired was the revolutionary mythical figure of Aeschylus’ *Prometheus Bound*, who defied God of Olympus and brought fire (light, enlightenment) to human beings, not the later figure of Prometheus, as representative of mechanistic materialism (of Proudhon); whom he severely criticized.

The charge of “Prometheanism” leveled against Marx by thinkers like Benton and Giddens is directed above all at *The Communist Manifesto*, where reference was made to “the subjugation of nature to man” and “the idiocy of village life” – points taken out of

context and at face value in isolation, which help conjure “Prometheanism” not only among Green but also in the understanding of some socialists and leftists who have not attempted to understand Marx and Engels in depth.

The *Manifesto* was a polemical, organizing document for the mass of working class, but even in it, contained ecological perspective. Part One of the *Manifesto* contained Marx & Engels’ famous panegyric to the bourgeoisie, celebrating its revolutionary accomplishments, thru which “all that is solid melts into air”, but then the contradictions that come with it – periodic economic crises and the birth of its heir apparent: the industrial proletariat. ...”(Capitalism) has created enormous cities, has greatly increased the urban population as compared with the rural, and thus has rescued a considerable part of the population from the idiocy of rural life. Just as it has made the country dependent on towns, so it has made barbarian and semi-barbarian countries depend on the civilized ones, nations of peasants on nations of bourgeois, the East on the West.” (*This is observed even in the US, where not until so long ago, a section of the population limited to the house and even today, and most of those living in small towns, remains heavily influenced by religion and thus consider the statement of the US presidents, whose allegiance to Capital against labor is clearly against their own self interests, on faith, rather than critically. Mass media has allowed the people in rural areas to be part of urban dialogue, but because of the antithesis between town and country, the rural population still remains cut-off and alienated*).

(While the Greens in the above, Marx & Engels as Promethean, some third world left intellectuals have also seen in this as Marx committing another sin: ‘racism’. Both are half right, i.e. both are completely wrong. Marx’s critique of Capitalism is dialectical, i.e. he does not paint it with one color, but provides the historical development of society thru this stage, in which capitalism plays a positive role in part, while a negative one overall.)

In part –2 of the *Manifesto*, Marx and Engels insisted on the need to carry out “a gradual abolition of the distinction between town and country, by a more equitable distribution of population over the country...” by “combination of agriculture with manufacturing industries”. Here then, Marx and Engels thus sought to reconnect at a higher level, what had been torn apart by capitalism – the human metabolism with nature.

Unlike Malthusian population theory underpinning capitalism – which sought to sweep the peasants from the land so as to create town proletarians for the industry (*was it what Stalinism was doing in the 1930s, except for the state capital?*), Marx and Engels sought a synthesis between the two – that is the materialist-Green idea.

Part - 5

The Metabolism of Nature & Society

In *Capital*, Marx integrated the materialist conception of nature with the material conception of history, by the concept of “metabolism” to define the labor process as “a process between man and nature, a process by which man through his own actions, mediates, regulates and controls the metabolism between himself and nature.”

Yet an “irreparable rift” has emerged in this metabolism as a result of capitalist relations of productions and antagonistic separation of town and country. Hence under the society of associated producers it would be necessary to “govern the human metabolism with nature in a rational way”, which is completely beyond the capabilities of bourgeois society. In *Capital*, volume – 3, Marx wrote: “Large landed property reduces the agricultural population to an ever decreasing minimum and confronts it with an ever growing industrial population crammed together in large towns; in this way it produces conditions that provoke an irreparable rift in the independent process of social metabolism, a metabolism prescribed by the natural laws of life itself. The result of this squandering of the vitality of the soil, which is carried by trade far beyond the bounds of a single country. . . . Large scale industry & industrially pursued large scale agriculture have the same effect. If they are originally distinguished by the fact that the former lays waste and ruins labor-power and thus the natural power of man, whereas the latter does the same to the natural power of the soil, they link up in the later course of development, since the industrial system applied to agriculture also enervates the worker there, while industry and trade for their part provide agriculture with the means of exhausting the soil.”

Marx provided a closely related and equally important distillation of his critique of capitalist agriculture in his discussion of “Large-scale Industry and Agriculture” in volume 1 of *Capital*: “Capitalist production collects the population together in great centers and causes the urban population to achieve an ever growing preponderance. This has two results: On the one hand it concentrates the historical motive force of society (associated producers); on the other hand, it disturbs the metabolic interaction between man and the earth; i.e. it prevents the return to the soil of its constituent elements consumed by man in the form of food and clothing; hence it hinders the operation of the eternal natural condition for the lasting fertility of the soil. . . . All process in capitalist agriculture is a progress in the art, not only of robbing the worker, but of robbing the soil; all progress in increasing the fertility of the soil for a given time is a progress toward ruining the more long lasting sources of that fertility.” (*Such a process in the Punjab province of India created the social crisis and the Khalistan movement a hundred years after Marx wrote the above analysis.*)

Marx used the concept of metabolism to describe the human relation to nature through labor thus: “Labor is, first of all, a process between man and nature, a process thru which man, through his own actions, mediates, regulates and controls the metabolism between himself and nature. . . . it (the labor process) is the universal condition for the metabolic interaction between man and nature, the everlasting nature imposed condition of human existence.” He put in *Grundrisse* this most eloquently in a paragraph which is quoted at the start of this book (see top of page 1: Introduction)

In addition to this metabolism concept, Engels, unlike the age old conception that had placed human beings at the center of natural universe, professed a withering contempt for

the idealistic exaltation of man over other animals. The materialist conception of nature accords a sustainable equilibrium between animal and human existence.

One of the more prominent criticism of Marxists and in particular, Marx, questions the labor theory of value, which denies role of nature in the creation of wealth. This is a misunderstanding of Marx's materialism.

Genuine wealth according to Marx consisted of use values – the general characteristic of production, transcending its specifically capitalist form. It was the contradiction between use value and exchange value engendered by capitalism that Marx considered to be one of the foremost contradictions of the entire dialectic of capital. Nature, which contributed to the production of use values, was just as much a source of wealth as labor – even though its contribution to wealth was neglected by the system. (Berries picked in nature satisfy human want & need – use value – as against commodity trading of agricultural products – exchange value.) In the *Critique of Gotha Program*, Marx severely criticized socialists such as Ferdinand Lassalle who attributed what Marx called “supernatural creative power to labor”.

Even more important criticism frequently attributed to materialists in general and Marx in particular by the Green advocates is that they have an extremely optimistic, cornucopian view of conditions that would exist in a post-capitalist society due to its development of forces of production under capitalism, ignoring ecological limits on production.

Yet, unlike Alec Nove, who considered natural resources as inexhaustible, Marx argued that agriculture in general “when it progresses spontaneously and is not *consciously controlled* ... leaves behind deserts - Persia, Mesopotamia, Greece etc.”. (*Today, it may be added that not only in capitalist agriculture, but the entire wasteful consumerist economy created by the late 20th century capitalism has extended this threat to the ecology of the entire planet.*)

Towards the Society of Associated Producers

Marx: “ All production, under all forms of society is appropriation of nature on the part of the individual and through a specific form of society.” Yet the system of capitalist private property, as distinguished both from communal property and from private property rooted in individual worker-farmer proprietorship (i.e. the peasantry) over the land, arises thru the severing of any direct connection between the mass of the population and the earth – often by forcible removal.

The very existence of capital, for Marx, therefore presupposed “a process of history which dissolves the various forms in which the worker is a proprietor, or in which the proprietor works. Thus (1) *Dissolution* of the relation to earth – land & soil – as natural condition of production – to which he relates as to his own organic being...(2) *Dissolution of the relations* in which he appears as a proprietor. In the former what Marx called “primitive” accumulation, and together with latter lay the genesis of the capitalist system.

To the question “Where did the capitalists originally spring from?” Marx answers “Capitalist farmer emerged slowly, from the earlier form of the bailiff in the second half of the 14th century. At this point the landlord begins providing seed, cattle and farm implements, so that farmer can do the actual work of agriculture. Eventually, it took the form of a developed system based on ground rent. The agricultural revolution of the 15th century facilitated it, and the usurpation of common land, which began in England in the 14th century in the enclosures movement, where a great mass of rural population was forcibly removed and hurled on to the market as free, unprotected & right-less proletarians and ending during Reformation in the 18th century, when Catholic Church lands were seized. By the 19th century, the very memory of the connection between the agricultural laborers and communal property had... vanished.”

The genesis of the industrial capitalist for Marx, took a much shorter span of time: “ The discovery of gold and silver in America, the extirpation, enslavement and entombment in mines of indigenous population of America, the beginning of the conquest and plunder of India, and the conversion of Africa into a preserve for the communal hunting of black skinned people, are all things which characterize the dawn of the era of capitalist production. These idyllic proceedings are the chief moments of primitive accumulation.”

(In its most evolved stage, the imperialist capitalism of the 20th century, the antithesis between town & country has enlarged to antithesis between metropolitan centers of finance capital - the major cities of US, Japan & Western Europe, and small sections of the major cities of India and China on one han, against on the other, the vast populations of India, China, Latin & South America, with the former socialist countries in transition. Of the 6.5 billions on earth, at least 6.0 billions against the less than half a billion)

In their conception of a future society, Marx and Engels proposed a higher synthesis in the relation between town & country. *(To this I would add a similar synthesis is needed between metropolitan and periphery countries in the future world society, with a more even distribution of population, both within and between continents and a more even development of infrastructure and industry.)*

The close connection between Marx’s vision of communism and ecological sustainability is evident in the utopian conceptions of the 19th century English artist, master-craftsman, designer, poet and activist William Morris (1834-1896), who was both a Marxian socialist and a formative Green thinker in his novel *News from Nowhere* in which he described a society in which the overthrow of World Market had led to the demise of wasteful forms of economic production geared to artificial needs for the sake of profit, replaced by organization of production in such a way that “nothing can be made but for genuine use”. Where free time for pursuit of intellectual inquiry and independent craftsmanship was more readily available – because society had given up narrowly defined, instrumentalist ends – whereas work itself was seen as serving the needs of both human creativity and fulfillment of social needs. In this conception of a post-capitalist society, “the difference between town & country grew less and less.”

The revolution against capitalism required therefore, not only the overturning of its specific relations of exploitation of labor, but also the transcendence – thru the rational regulation of the metabolic relation between human beings and nature by means of modern science and industry – of the alienation from the earth: the ultimate foundation and precondition for capitalism. Only in these terms does Marx’s frequent call for the “abolition of wage labor” makes any sense.

(Viewed from this perspective, the failure of the 20th century socialist movement lay precisely in not even attempting to overthrow this precondition of capitalism. The second revolution in Russia, i.e. the Stalinist revolution of 1930s, which collectivized farming and pushed for an accelerated industrialization, was in fact a replay of the English & West European capitalist revolution, in this case the difference being the state was the instrument and owner, and rather than as a transient phenomenon and of the working class, the state diminishing over time as class divisions reduced, as Lenin envisaged it, became permanent and enlarged and created a caste – state and party bureaucracy – which in time became a harbinger of the liberal capitalism. However, there was a real difference between Russian socialist “primitive accumulation” of 1930s and 1940s and those of the Capitalist West, which Stalin could legitimately claim, referring to the 1920s Great Depression: “ The capitalists consider it quite normal in a time of slump to destroy the “surplus” of the commodities and burn “excess” agricultural produce in order to keep high prices and ensure high profits, while we here in the USSR, those guilty of such crimes would be sent to a lunatic asylum”. He did not say that along with these he also sent those others, who guided, sacrificed and were the most dedicated sons & daughters of the 1917 Russian revolution. Was there another way? It was this destruction of the original Boleshevism that had tragic consequences for materialist ecology as well. The centralized State and Party, in preserving its power, competed with Imperialist Capitalism on its own terms and methods, and thus undermined the moral appeal of socialism for a couple of generations. It is no wonder that the ecological record of the USSR when it collapsed in 1989, was not much better than that of capitalist West.)

Part - 6

The Basis in Natural History

Darwin wrote his first draft of his theory of the transmutation of species in 1842, but feared publishing it so as to not jeopardize his upper middle class status, and worse, being branded as blasphemy to Christian view of life, as the traditional society was threatened by the European revolution, which failed in 1848. In the “age of capital” that descended upon Europe and Alfred Russell Wallace’s similar theory, which was to be printed soon, pushed Darwin off the fence and the two published their findings together in 1856.

In explaining evolution of species, Darwin elaborated his “The Struggle for Existence” in terms of the principle of “Natural Selection”. The development of complex instinctual behavior, such as that of hive-making bees, Darwin explained, how all this could have originated in innumerable gradations by means of natural selection. This refuted firmly the natural-theological argument on the fineness of adaptation as constituting irrefutable

evidence for divine intervention in nature, which today is again being resurrected by the advocates of “intelligent design”.

Darwin’s “struggle for existence”, was inspired by Malthus’ population theory initially. In Malthus’ theological view, adaptation was a divine gift of God – not a product of species transformation. Darwin was to contribute even further to Malthusian interpretation of his theory – to what came to be known as “Social Darwinism” by adopting the concept of “survival of the fittest” – a term first introduced by Herbert Spencer in 1864 – as roughly synonymous with “natural selection”, which in biology came to mean survival of an individual organism to the point that it could pass its genes to its progeny. The social Darwinist” sense of the “survival of the fittest” came to be accepted as a justification for the law of the stronger and for the superiority of those who are on top in the social order. Similarly, the concept of “Evolution” came to be viewed as a teleological concept – as if it was an organic progress towards perfection, and thus it was opposed to Darwin’s materialist views initially expressed in *The Origin of Species* first edition in which natural selection meant only adaptation to local environments. It had not suggested superiority or inferiority. These adoption of Darwin’s materialist concepts in their Spencerian view – came to reinforce specifically bourgeois ideals of progress. Darwin himself, probably afraid of his own revolutionary materialist ideas, came to dilute his interpretation in the later edition of *The Origin of Species* for natural selection as a progress towards perfection. Soon however, it was to change. Two tenets of traditional thought: Essentialism and Teleology were undermined by the Darwinian revolution, his later dilution not withstanding.

Essentialism – is a philosophy attributed to Plato, which held that what we see of the phenomena of the world corresponds to the shadow of the real objects on the wall of a cave by a fire. We can never see the essence. The essence was constant, unchanging while the shadow moved, as the flame of the fire varied. Darwin’s transmutation of species established that there were no divisions between species – thus it questioned the exalted position of human beings and the permanence of “human nature”, undermining essentialism.

Teleology’s argument ran as follow: An organism or organ (A) is fitted to perform a function or purpose (B): therefore it was specifically constructed to perform that function. So, for example, the adaptation of all parts of a watch to the purpose of showing time, is evidence of a contriving intelligence adopting the means directly to that end. Darwin’s ‘natural selection’ proposed that an entirely contingent natural process could produce the same result – i.e. a “contriver” or “intelligent designer” was not necessary.

It was Thomas Huxley, a leading English follower of Darwin, who fought off the dilution that Darwin himself, out of fear, made to his own revolutionary theory, by insisting that Darwin’s theory, properly understood, was independent of any linear conception of progress, or purposive teleological process as for example: “suppose the ice age descended upon the whole of earth slowly, the process of weeding out will eliminate higher more complex organisms and would retain the lower forms of life. Thus linear

“progression to perfection” and man’s place on the throne of animal kingdom would both be proven false.

While Huxley and English physicist John Tyndall, both materialists, waged a relentless war against teleology and essentialism, a German thinker, Ernst Haeckel (1834 – 1910) coined the word “Okologie” or “ecology” in 1866 and described it thus: “...ecology is the study of all those complex inter-relations referred to by Darwin as the conditions of the struggle for existence. This science of ecology... has formed the principal component of what is commonly referred to as “Natural History”.

However, Haeckel in his philosophical “Monism”, connected religion and science in social Darwinist views: “the raging war of interests in human society is only a feeble picture of the unceasing and terrible war of existence which reigns throughout the whole of the living world. The beautiful dream of God’s goodness and wisdom in nature to which as children we listened so devoutly 50 years ago, no longer finds credit now...” These views were to exert influence in a tragic direction, on National Socialism.

Marx and Engels: Labor and Human Evolution

As England rocked by Darwinian revolution in 1860s, Marx studied Darwin’s work on ‘*Natural Selection*’ and found it to be compatible with his own materialist perspective, except for the Malthusian twists. In *Capital*, Marx compared Darwin’s development of specialized organs in plants and animals to that of specialized tools used by humans to help explain his own notion of how the historical process of manufacturing “multiplies the implements of labor by adopting them to the exclusive functions of each kind of worker”. Further Marx draws on the same distinction in Darwin to differentiate between the development of “natural technology” in the process of the natural evolution of plants and animals and the development of human technology in the process of human history: “Darwin has directed attention to the history of natural technology, i.e. the formation of the organs of plants and animals, which serve as the instruments of production for sustaining their life. Does not the history of productive organs of man in society, of organs that are the material basis of every particular organization of society, deserve equal attention? ...Technology reveals the active relation of man to nature, the direct process of the production of his life, and thereby it also lays bare the process of the production of the social relations of his life, and the mental conceptions that flow from these relations.” Human tools and technology, socially produced, were thus man’s inorganic body.

In *Capital*, Marx was able to define the labor process and human relation to (metabolic interaction with) nature in the following: “Leaving out of consideration such ready made means of subsistence as fruits, the gathering of which a man’s bodily organs alone serve as the instruments of his labor, the object the worker directly takes possession of is not the object of labor, but its instrument. Thus nature becomes one of the organs of his activity, which he annexes to his own bodily organs, adding stature to himself in spite of the Bible. As the earth is his original larder, so too it is, his original tool house. It supplies him for instance, rocks for throwing, grinding, pressing and cutting etc. The earth itself is

an instrument of labor, but its use in this way, in agriculture presupposes a whole series of other instruments and a comparatively high stage of development of labor power... The use and construction of instruments of labor, although present in a given (in minute form) among certain species of animals, is characteristic of the specifically human labor process... Relics of bygone instruments of labor (therefore) possess the same importance for the investigation of extinct economic formations of society as do fossil bones for the determination of the extinct species of animals.”

Alfred Wallace (co-discoverer of Natural Selection along with Darwin) in 1864 put it this way: “Human beings are able to change their relation to their environment by making tools and weapons and thus take away from nature that power she exercises over all other animals.”

Stephen Jay Gould, a Harvard paleontologist has argued that Engels provided the best 19th century gene-culture co-evolution theory when he argued that the human hand and brain are both organ and product. Heretofore, the focus of scientific thought had placed overwhelming emphasis on the development of the brain behind human evolution. Engels placed it on the dialectic of human-nature interaction. Marx and Engels saw the human relation to the earth thus in co-evolutionary terms. Human beings were able to transform their environment not entirely according to their choosing, but based on conditions provided by natural history.

Part-7 **The Revolution in Ethnological Time**

Lewis Henry Morgan (1818-1881), often viewed as the founder of social anthropology established that the human civilization had distinct “ethnical periods”: Savagery, Barbarism and Civilization, with each of the first two subdivided into three parts: lower, middle and upper. In lower Savagery, human beings subsisted on fruits and nuts and lived in caves, followed by middle Savagery in which fire-making knowledge allowed eating of fish and in upper Savagery, use of bow & arrow for hunting. Lower Barbarism developed pottery, middle Barbarism developed animal domestication, irrigation of land and basic dwellings and upper Barbarism was characterized by manufacture of iron in the beginning and ended with the invention of phonetic alphabet.

Morgan hinted at the early gene-culture co-evolution thus: “With the production, inventions and discoveries, and with the growth of institutions, the human mind necessarily grew and expanded; and we are led to recognize a gradual enlargement of the brain itself, particularly the cerebral portion,” and he concluded “..that man commenced at the bottom of the scale and worked his way up to civilization thru the slow accumulation of experimental knowledge..” Upon these foundations, Morgan went on to develop his analysis of the origin of the idea of government, the idea of family and the idea of property.

Marx studied Morgan and Engels used Marx’s notes together with Morgan’s work to develop his own arguments in *The Origin of Family, Private Property and the State*

(1884). For Engels, following Morgan, private property and class struggle now dominated only hitherto *written history*; in the period before, termed ‘prehistory’, society had been organized around kinship groups. Marx wanted to study the human development in this ‘prehistory’. Morgan’s focus on the arts of subsistence, in which he singled out the development of tools, ensured Marx’s following Morgan in connecting this to the changes in the family-kinship relations, property and the state. But Marx dissented from Morgan’s contention that man had developed “absolute control over the production of food”. To him rather the ecological problem associated with the development of the arts of subsistence existed into the capitalist period and would outlast capitalism itself. – posing problems that the society of associated producers would have to approach rationally, based on the understanding of the metabolic relation between human beings and earth.

In ethno-ecology, a field of enquiry since 1950s, anthropologists have sought to understand “traditional environmental knowledge” embedded in now extinct or threatened cultures; within this literature, subsistence is understood by leading ethno-ecologists (e.g.: Eugene Hunn) as the long term relationship between community and land use. Marx’s continual emphasis, throughout his work, particularly in *Grundrisse* and work of his last decade of his life – on traditional communal relations and the importance of a non-alienated relation to the earth has been seen by some of these ethno-ecologists as essential critical point of departure in the new field.

In 1882, the year before Marx’s death, Marx and Engels raised the question in *Preface to the second Russian edition of The Manifesto of the Communist Party*, “of whether the archaic Russian commune could provide the basis for a proletarian revolution, rooted in communal land ownership, that would serve as the departure for a communist development.” What was at issue they emphasized, was the existence not simply of communal social forms, but of a non-alienated relation to nature that would stand in sharp contrast to the system of “giant farms” of capitalist America.

The question of the material development of society was thus linked to the material development of the human relation to nature – in both cases history was not simply linear, but followed a complex, contradictory, dialectical pattern. In this dialectical movement lay the entire potential for revolutionary transformation.

Epilogue

Ecology After Marx

“We know only one science, the science of history. History can be viewed from two sides: it can be divided into the history of nature and that of man. The two sides however, are not to be seen as independent entities. As long as man has existed, nature and man have affected each other.”

K. Marx and F Engels, The German Ideology

Nikolai Bukharin (1888-1938), polit-bureau member of the ruling Boleshevik Communist Party from Lenin's days was a leading intellectual of Boleshevism.. He was arrested on (presumably) Stalin's orders in February 1937. A year later he was executed after being forced to "confess" himself as the "enemy of the people" in a public trial. In his last year in prison he wrote *Philosophical Arabaques*, which he contended to be his most mature intellectual work. In it he sought to reassess philosophy from the standpoint of science. His aim was to construct a more philosophically advanced, humanistic Marxism, based on Marx's practical materialism, in order to transcend some of the crude elements of mechanical materialism, so as to oppose solipsism, mysticism and fascism. Bukharin returned to Marx's metabolism of man with nature concept to develop the concept of "Equilibrium between Society and Nature". Bukharin's work appeared from secret Russian archives only in late 1980s. In the USSR, starting in 1930s, along with its twin in the West, the Marxist tradition lost the connection to science and nature in its social practice. However, Marx's ecology – dialectical materialism that encompassed the materialist conception of nature remained in the works of Engels, and were kept alive by Morris, Bebel, Kautsky, Luxemburg, Lenin and Bukharin.

Dialectical Naturalism

After Marx's death, Engels provided the most direct connection between Marxism and science. However, his work *Dialectics of Nature* was not published until 1927, after Lenin's death. So, the Marxism after Marx was therefore influenced by Engels' *Anti-Duhring*(1878) and *Ludwig Feuerbach and the Outcome of Classical German Philosophy*, in which Engels attempted to explain the origins of Marxism in the critique of the Hegelian System, to argue for the necessity of a materialist conception of nature, and to insist on a dialectical approach to materialism, as opposed to mechanical (or mechanistic) materialism. Engels was able to transcend mechanistic thinking by dialectical critique based on conception of natural *history* that emerged from Darwin's analysis that allowed one to understand nature dialectically, i.e. in its emergence.

Epicurus, Marx had argued, was the first to discover the alienation embedded via religion in human conception of nature. Hegel was the first to discover the alienation of labor (but only in an idealist mode as the alienation of thought). Marx was to combine within the larger dialectical synthesis, the conception of alienation within praxis (practice), associated with Hegel, and the materialist conception of alienation of human beings from nature to be found in Epicurus.

In the last years of his life, Engels began to recognize the importance of Marx's Ph.D. thesis on Epicurus in relation to the development of materialist dialectic. Georg Plekhanov had the Marxist intellectual mantle after Engels' death, but in his work his focus remained on the 18th century French materialists – who developed a materialism that was exclusively mechanical.

It is often contended that Marxism after Marx & Engels contributed very little to ecological analysis. However, truth is that Marx and Engels critique continued to have influence the decades following their death. It was discarded only later on, particularly

within the USSR, as the expansion of production to catch up with the west became an overriding goal of Soviet government.

From utopian socialist William Morris to mainline Marxist thinkers such as Bebel, Kautsky, Lenin, Luxemburg and Bukharin there was a continued trend to build on ecological components of Marx's thought, which finally came to an end with the removal and execution of Bukharin in 1938.

For Bukharin, it was technology that was the principal mediating force in man's metabolism with nature. The social metabolism with nature was therefore an "unstable equilibrium". The whole "process of social production", he insisted "is an adaptation of human society to external nature". Consequently "nothing could be more incorrect than to regard nature from a technological point of view" ... "Man, as an animal form, as well as human society, are products of nature, part of this endless whole. Man can never escape from nature... man's environment is society..., the environment of human society is external nature, and, even when he 'controls' nature, he is merely making use of the laws of *nature* for his own ends."

Soviet ecology in the 1920s was arguably the most advanced in the world. While western models of ecology still tended to rely on reductionist, linear, teleologically oriented models, geared to natural succession, Soviet ecology was pioneering in the development of a more dialectically complex, holistic, co-evolutionary models. V.I. Vernadsky (1863-1945) and N.I. Vavilov (1887-1943) are the two greatest Russian ecologists. In 1926 Vernadsky published *The Biosphere*. He was according to Lynn Margolis et.al., the first person in the history to come to grips with the real implications of the fact that Earth is a self-contained sphere." And it was Vavilov who in 1920s determined that there were a number of centers of great plant gene diversity – the richest banks of germoplasm, the basis for all human cultivation – located in underdeveloped countries "in tropical and subtropical mountain regions". For Vavilov, who adopted dialectical, co-evolutionary perspective, these centers of plant and genetic diversity were the product of human culture.

Today there is an international struggle between the third world nations where these centers exist and advanced capitalist centers of western world over control of these genetic resources, which is related again, like that of oil, to capitalist mechanism of seeking profit and dominance to secure it.

N.I. Komrov (among the group of scientists connected to Bukharin), in *Marxism and Modern Thought* quoted extensively from Engels' *Dialectics of Nature*, and noted "the private owner, however it may be to make the changing of the world comply with the laws of Nature, cannot do so since he aims at profit and only profit." Intensive agriculture and wasteful industrial production has already left natural resources in crisis in many parts of the globe as is well known.

Lenin was a sophisticated materialist, whose materialism (especially as developed in his *Philosophical Notebooks*) was dialectical and non-reductionist. Lenin studied Hegel and

Hegel's analysis of Epicurus and saw in Epicurus' philosophy as embodying "the guess works of genius and *signposts* for science, but not for clericalism."

In his writings and political pronouncements, Lenin insisted that human labor could not simply substitute for the forces of nature and that a "rational exploitation" of the environment, or the scientific management of natural resources in accord with the principles of conservation was essential. Conservation movement prospered in the 1920s with his support. However, in the 1930s, under Stalinism, conservationists were increasingly attacked for being "bourgeois" and many of the ecologists were purged along with Bukharin. As a crowning irony, ecological factors were eventually to play a major role in the precipitous decline of soviet economic growth rates and the onset of stagnation in the 1970s.

Caudwell's Dialectics

As the western Marxist school foundered along with the decay in the USSR, it was Christopher Caudwell, the only figure in Marxian social science who transcended the contradictions in western Marxism. He, an English socialist revolutionary, died at the age of 29 manning a machine gun to cover the escape of his comrades in the Spanish civil war as part of the international brigade fighting the fascists. His writings: *Illusion and Reality*, *Studies and Further Studies in a Dying Culture*, *The Crisis in Physics*, *Romance and Reaction* and *Heredity and Development*, the last of which remained unpublished until 50 years after his death in 1937. His general viewpoint is best expressed in this quote: "Either the Devil has come amongst us having great power or there is a causal explanation for a disease common to economics, science and art." Caudwell saw the cultural problem as the atomized, alienated world of bourgeois science and culture, characterized by dialectical rifts between nature and society., idealism and mechanism, and mechanism and vitalism within science. These dualisms and partial, one sided rationalities so characteristic of bourgeois society arose in his perspective, out of the necessary defenses of a dying culture.

For Caudwell, E.P. Thompsom wrote, bourgeois culture was characterized by "the repeated generation of idealism and mechanical materialism, not as true antagonists but as pseudo-antitheses, generated as twins in the same moment of conception, or rather, as positive and negative aspects of the same fractured moment of thought." But Caudwell also opposed not merely dualisms; he also opposed that form of positivism, which simply denied the antithesis, by adopting a crude "reflective" view of the subject-object relation within knowledge. Caudwell thus opposed the crude "epistemological" position of the then dominant Frankfurt school of "dialectical materialism" which included Lukacs & Gramsci.

Caudwell's *Heredity and Development*, a critical study of biology was published in 1986. In it his main analysis pointed towards a complex co-evolutionary synthesis, which is now followed in advanced biological and ecological analysis. "An earlier society," Caudwell pointed out "saw Nature as a system, in which the whole world of life co-operated in mutual assistance." Although this view could be interpreted as illusory, this view of nature captured a part of the reality that crude Darwinian view of nature – not to

be confused with Darwin and Huxley's real work – as a world of unbridled competition and “survival of the fittest” that was prevalent in mechanistic materialist interpretation of Darwin, all too often missed.

For Caudwell, “The relation within a species or between species is not solely inimical, in the sense of individuals fighting for individual possession of a limited food supply. The food supply itself is an outcome of the particular relations between life and nature..... Similarly, the multiplication of one species is not inimical to another, if it is the food of that species. Or the relation between species may be beneficial but indirect, as when birds distribute seeds, bees pollen, and coral polyps form reefs.”..

”Relation between organisms and environment is a mutually determining one” Caudwell wrote, “connected to material change. Indeed material becoming is what reality is.”

The Dialectical Ecologist

As noted, Caudwell's great contributions remained hidden and unappreciated due to its opposition to the then present trends in British communist party who took the responsibility for publishing his manuscripts. Yet, despite the disappearance of ecological discussions within Marxian social theory in the 1930s –1970s era, all was not lost. Monthly Review school of Marxian political economy retained recognition of some ecological issues and E.P.Thompson and Raymond Williams in Britain retained strong materialist orientation. Paul Sweezy's analysis included critiques of economic waste under the regime of monopoly capital, a theme he strengthened in his work of 1960s thru 1990s.

Within science, J.D. Bernal, J.B.S. Haldane and J. Needham's scientific work contained both materialism and dialectics. Haldane along with A.I. Oparin (USSR biochemist) in 1929 were the “co-discoverers” of the first genuine materialist explanation for the emergence of living organisms from the inorganic world – influenced by the analysis of biosphere by Vernadsky. Bukharin's influence on these scientists was significant.

In the 1970s to 1990s, the work of scientists Richard Lewontin , Stephen Jay Gould and Richard Levins (all at Harvard) gave impetus to the Marxist materialist and dialectical research. In the *Dialectical Biologist*, (1985, authors: Levins and Lewontin) the heart of the analysis is the notion of “the organisms as the subject and object do not simply adapt to their environment; they also change it, “ and “A commitment to evolutionary world view is a commitment to a belief in the instability and constant motion of systems in the past, present and future; such motion is assumed to be their essential characteristic.”

This essentially dialectical point of view is then used to critique ecological reductionism, which dominates much of ecological science; namely, the traditional view of Clementsian ecology that ecosystems demonstrate properties of growing diversity, stability and complexity and pass thru stages of succession – as if they were in effect “super-organisms”. For Levins and Lewontin, all such analysis is “idealistic” and non-dialectical. “What matters is not whether we modify nature or not” Yrjo Hila and Richard

Levins write in *Humanity and Nature: Ecology, Science and Society (1992)* – “but how, and for what purpose we do so.”

Epicurus, according to marx, had discovered alienation from nature; but Hegel revealed the alienation of human beings from their own labor, and hence from both society and the specifically human relation to nature. Marx forged these insights, together with the critical knowledge, obtained from Ricardo’s economics, Liebig’s chemistry, and Darwin’s evolutionary theory, into a revolutionary philosophy that aimed at nothing less than the transcendence of alienation in all its’ aspects: a world of rational ecology and human freedom with an earthly basis – the society of associated producers.

The End.