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SOVIET ENVIRONMENTALISM: THE PATH NOT TAKEN

1. Introduction

Capitalism is a system which by its very nature must expand until it destroys the conditions of its own existence. It is hardly surprising then that Marxists in the Soviet Union argued that in the current environmental crisis lay the ultimate reason for replacing capitalism with socialism. As A.D. Ursal, the editor of *Philosophy and the Ecological Problems of Civilization*, argued:

[T]he crisis of the environment, which is reaching extreme development almost everywhere, coincides with the last stage of the general crisis of capitalism. A conviction is growing throughout the world that only collapse of the capitalist system and victory of socialism throughout the world will create a general, fundamental, social opportunity for rational use of natural resources and the highest degree of optimum interaction with nature... Convincing evidence that socialism is a necessary condition for optimising relations between society and nature is socialism as it actually exists, and the policy of socialist countries in respect of the environment.¹

However with the collapse of the Soviet Union, all hope that Eastern European communism might somehow be transformed into a more attractive, less environmentally destructive social order than the liberal democratic societies of the West has been destroyed. The description of the modern predicament by Alvin W. Gouldner has become even more poignant: "The political uniqueness of our own era then is this; we have lived and still live through a desperate political and social malaise, while at the same time we have *outlived* the desperate revolutionary remedies that had once been thought to solve them."² If this is the case, there is reason to examine the failure of the Soviet Union more closely. Was it possible that things might have worked out differently; and if so, does this provide any orientation for the present? In this paper I will show how an alternative path for Soviet society had been charted, and partly implemented, in the 1920's by the radical wing of Bolshevism, a path which made environmental conservation a central issue. And I will suggest that this is the path which holds most hope for the future.³

2. Socialist Environmentalism

One of the unfortunate legacies of Soviet communism was to leave Russians ignorant of much of their past. In the last decades of the Soviet Union there emerged a large environmental movement.⁴ This was more than a movement concerned with the environment. While some Soviet ideologists such as Ursal attempted to use environmental destruction in the West as an instrument of ideological struggle against the West, and others such as Boris Komarov to condemn communism as an inherently environmentally destructive system,⁵ some saw in the environmental crisis a common cause for all humanity. Environmental destruction throughout the world was seen by Ivan Frolov (who under Gorbachev became editor of the Communist Party's theoretical journal *Kommunist*) to provide justification for ending the Cold War, for reorganizing societies for the benefit of their members rather than for the struggle for world supremacy, and more fundamentally, for replacing anthropocentrism with "biocentrism" or "biospherecentricism".⁶ Since the overthrow of communism, new environmental movements

¹ A.D. Ursal ed., *Philosophy and the Ecological Problems of Civilisation*, trans. H. Cambell Creighton, (Moscow: Progress Publishers, 1983), pp.10f.

² Cited without reference in Alec Nove, *The Economics of Feasible Socialism*, (London: George Allen & Unwin, 1983).

³ This is further argued in Arran E. Gare, *Beyond European Civilization: Marxism, Process Philosophy and the Environment*, (Bungendore: Eco-logical Press, 1993).

⁴ See Philip R. Pryde, *Conservation in the Soviet Union*, (Cambridge: Cambridge University Press, 1972) and *Environmental Management in the Soviet Union*, (Cambridge: Cambridge University Press, 1991); Joan DeBardeleben, *The Environment and Marxism-Leninism: The Soviet and East German Experience*, (Boulder: Westview Press, 1985); and Douglas R. Weiner, "The Changing Face of Soviet Conservation", Donald Worster ed. *The Ends of the Earth: Perspectives on Modern Environmental History*, (Cambridge: Cambridge University Press, 1988).

⁵ Boris Komarov, *The Destruction of Nature in the Soviet Union*, (London: Pluto Press, 1978). The author now lives in Israel.

⁶ Ivan T. Frolov "The Marxist-Leninist Conception of the Ecological Problem" in Ursal ed. *Philosophy and the Ecological Problems of Civilisation op.cit.* and I.T. Frolov and V.A. Los, "Filosofskie osnovaniia sovremenio ekologii", *Ekologicheskaiia propaganda v SSSR*,

have formed, mostly anti-Marxist either of a right-wing, extreme nationalist and racist, or a left-wing, anarchist variety. However none of these environmentalists appear to be aware that a strong environmental movement developed in the 1920's as one of the outcomes of the revolution of 1917,⁷ nor of the roots of this environmentalism in the ideas of the left-wing of Bolshevism, a movement which attempted a synthesis of socialism and anarcho-syndicalism and was aligned with Western Marxists opposed to both the control of society by markets and to the domination of society by centralized State bureaucracies. This movement aimed to transform people through the creation of a new culture, and along with this, the to transform humanity's relationship to its environment.

The origins of environmentalism in Russia go back long before the revolution, and there were a number of strands to Bolshevik environmentalism. In his monumental history of Soviet environmentalism up until 1935, Douglas Weiner pointed out the strong commitment by Lenin to the cause of conservation. In 1919, with Kochak's armies crossing the Urals and making their way toward the heartland of Soviet-controlled Russia, Lenin personally took time out to hear the case for conservation.⁸ However Lenin's conservation policies and general attitude to government were for the most part very similar to those of the Progressive Conservation Movement which developed in U.S.A. under the Presidency of Theodore Roosevelt.⁹ Like Roosevelt, Lenin had a strong faith in science and was committed to creating an efficiently managed society. Lenin's environmentalism, while important and enlightened, offers us little that is new. In fact there are good grounds for accepting the argument of the anti-Bolshevik Council Communist Anton Pannekoek that Leninism was simply the expression of the late drive by Russians for industrialization.¹⁰ Marxism as it was appropriated by such Russians as Struve, Plekhanov and Lenin provided an ideology which enabled them, as it has since enabled a number of political leaders in the Third World, to appropriate the Western drive for technological development while struggling against efforts by the advanced capitalist societies of the West to subjugate them. The history of the Soviet Union has been a continuation of this struggle, and it is impossible to understand the oppressive, technologically oriented policies of the Soviet Union except in relation to almost constant threats of invasion from the West. However by promoting their drive for industrialization as a Marxist revolution, many more radical ideas than those supported by Lenin were not only promoted, but at least to some extent, put into practice. The central idea of these radicals was that to create a socialist society it would be necessary to develop a new culture.

In September, 1918, the Proletarian Cultural and Educational Organizations or Proletkult, were set up to give substance to the dreams of a group of Marxists to create a proletarian culture. The organizers of this movement, the left-Bolsheviks, were the butt of Lenin's polemic in his *Materialism and Empirio-criticism*. The leader of the left-Bolsheviks was Aleksandr Aleksandrovich Bogdanov. To fully understand his ideas and their significance it is necessary to see his work in relation to his political views and the philosophers and scientists along with whom he and his fellow Bolsheviks were condemned as idealists by Lenin. These thinkers were influenced primarily by thermodynamics or energetics. Their "empiricism" was elaborated as part of their efforts to overcome the dualism between matter and mind associated with the

(Moscow: Nauka, 1984). This paper is discussed and partly translated by Douglas Weiner in "Prometheus Reclaimed: Ecology and Conservation in the Soviet Union" in Loren R. Graham ed., *Humanistic Dimensions of Science and Technology in the Soviet Union*, (Cambridge, Mass.: Harvard University Press, 1989).

⁷ Douglas Weiner gave a paper he had written on Stanchinskii to Frolov in 1985 when Frolov spoke at Boston University. Frolov appeared to be unaware of the conservationists of the 1920's.

⁸ Douglas R. Weiner, *Models of Nature: Ecology, Conservation, and Cultural Revolution in Soviet Russia*, (Bloomington and Indianapolis: Indiana University Press, 1988), p.27.

⁹ This has been described by Samuel Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement 1890 - 1920*, (Cambridge: Harvard University Press, 1959).

¹⁰ Anton Pannekoek, *Lenin as Philosopher* [1932], (London: Merlin Press, 1975).

mechanistic view of the world.¹¹ Being almost all socialists of one form or another, they were among the founders of what Juan Martinez-Alier has called ecological economics. The first to develop ideas along these lines was a Ukrainian Narodnik, strongly influenced by Marx's economics, Serhii Podolinskii who lived from 1850-1891 and who met Marx and Engels in 1872 and corresponded with Marx in 1880. Podolinskii tried to reformulate Marx's theory of surplus value in physicalist terms as appropriation of usable energy, thereby focussing attention on the limits of the natural environment, on the way in which peasants were being exploited, and on how some regions were being exploited by others. Similar ideas were then developed, largely independently, by Edward Sacher, Leopold Pfaundler, Josef Popper-Lynkeus, Wilhelm Ostwald, Ernst Mach, Frederick Soddy and Otto Neurath.¹² It was these thinkers whom Lenin attacked.

Bogdanov developed his ideas trying to reconcile Marxism with the energetic monism of Wilhelm Ostwald. However his intellectual work was associated with his engagement in political action and a range of ideological disputes. As a student Bogdanov had become a Narodnik, and still adhered to the views of Narodnaya Volya (the People's Will - the group which had assassinated Alexander II in 1881) on his exile to Tula in 1894.¹³ It was while participating in political agitation in Tula that he became a Marxist. However unlike most other Russian Marxists, Bogdanov was not interested in combating the Narodniks, and was sympathetic to the spontaneous action of the workers. In 1904 he wrote that "workers know better by experience what exploitation is" and urged the use of strikes and trade unions so that "the workers will unite in larger and larger masses".¹⁴ After the uprising of 1905, in which workers with little direction from political leaders had almost succeeded in seizing power, he, along with a number of other Bolsheviks, including Maxim Gor'kii and Anatolii Lunacharskii, was strongly influenced by the ideas and practices of the anarcho-syndicalists.¹⁵ He was influenced by Georges Sorel (whose book *Reflections on Violence* was translated into Russian in 1907) who argued workers need a myth to inspire them to action rather than just a scientific analysis of society. Bogdanov sympathised with Lunacharskii's efforts to join socialism with anarcho-syndicalism and his call for the subordination of political organizations to a class syndicalist organization, a kind of "General Worker's Soviet". It was this more than anything else which led in 1908 to the split in the Bolsheviks between Lenin and Bogdanov and his supporters, including Lunacharskii, and it was this split which precipitated Lenin's attack on the philosophy of his opponents among the Bolsheviks in *Materialism and Empirio-criticism*. In 1909 Bogdanov wrote that "the working class as a social system does not exist unless the proletariat is organized into a party, syndicates, and so forth," as a "living collective."¹⁶ Along with the left Marxists of Western Europe such as Pannekoek and Gorter, Bogdanov extolled the work of the worker-philosopher Joseph Dietzgen (1826-1888) who had argued that: "For a worker who seeks to take part in the self-emancipation of his class ... the prime necessity is to cease allowing himself to be taught by others and to teach himself instead"¹⁷ and who, to support the historical role he attributed by him to the subject, argued for a monist philosophy in which active, experiencing subjects had a place in the world. However Bogdanov regarded Dietzgen's philosophy as still too much based on contemplation, defending Marx's (and modern physicists') concept of matter as that which resists labour (or

¹¹ Seen in relation to the history of logical positivism, their philosophies have been largely misrepresented. Paul Feyerabend, on reading Ernst Mach, characterized him as a "dialectical rationalist". See "Mach's Theory of Research and Its Relation to Einstein," *Farewell to Reason*, (London: Verso, 1987), pp.192-218.

¹² J. Martinez-Alier and J.M. Naredo, "A Marxist Precursor of Energy Economics: Podolinski", *Journal of Peasant Studies*, 8, 1982, pp.207-224; and Juan Martinez-Alier, *Ecological Economics*, (Oxford: Blackwell, 1987).

¹³ On the early evolution of Bogdanov's political ideas, see James D. White, "Bogdanov in Tula" *Studies in Soviet Thought*, 22, 1981. See also John Biggart, "Bogdanov and Lunacharskii in Vologda" *Sbornik*, 5, 1980.

¹⁴ Cited by Robert C. Williams, "Collective Immortality: The Syndicalist Origins of Proletarian Culture", *Slavic Review*, 39, September, 1980 p. 395 from Riadovoi [Bogdanov], *O sotsializme* (Geneva: 1904), pp.15, 17, 21.

¹⁵ On the syndicalist influence on Bogdanov and other Marxists, see *ibid.* pp. 389-402. However, none of the Marxists appear to have been influenced by the work of Peter Kropotkin.

¹⁶ Cited from A. Bogdanov, "Filosofia sovremennago estestvo ispytatelia", in *Ocherki filosofi kollektivizma*, (St. Petersburg, 1909), p.133 by White, *op.cit.*, p.397.

¹⁷ Cited by D.A. Smart, *Pannekoek and Gorter's Marxism*, (London: Pluto Press, 1978), p.18.

action) against Dietzgen's conception of matter as substance or primary being. Ostwald's monism provided Bogdanov with a philosophy to address and relate these diverse concerns.

There were two stages to Bogdanov's intellectual career. To begin with, in his work *Empiriomonism*, published between 1904 and 1906, Bogdanov added a social dimension to the epistemological theories of the empirio-critics, Ernst Mach and Richard Avenarius, whom Ostwald had used to justify taking energy as the basic principle of scientific explanation in place of matter. Opposing the concept of passive experience of the empirio-critics, Bogdanov argued that while the experience of the mental world is the product of individually organized experience, the physical world is the product of socially organized experience, primarily associated with labor. These two worlds reveal two different biological-organizational tendencies.¹⁸ He argued that the conflicts of value associated with the sphere of individually organized experience were manifestations of the divisions within society based on class, race, sex, language, nationality, work specialization, and relations of domination and subordination of all kinds. It was necessary to overcome these conflicts for a new communal consciousness to emerge in which basic values could be agreed upon. But while Bogdanov accepted that it was important to transform class relations to achieve this, he argued that the importance of this had been over-emphasized by Marx. Other conflicts, including organizational relations and unequal relations between the sexes, also had to be overcome. And to achieve this, it was necessary for the proletariat to transcend bourgeois culture, which he argued could only be achieved by creating a new culture to organize experience.¹⁹ Anticipating later Marxist critiques of the science which emerged with capitalism, he saw the mechanical view of the world, the split between mind and matter, idealism and materialism, as expressions of the social practices of capitalist society, of the fetishism of commodities involved in market relationships and of the split between the organizational and the executive functions in the labour process. Bogdanov called for a cultural regeneration based on developing the modes of understanding appropriate for a society in which the divisions in society, including the division between manual and mental labour, had been overcome.

In the second stage of his intellectual career from 1913 to 1922 Bogdanov attempted to provide the key to these modes of understanding in his three volumed work, *Tektology: The Universal Organizational Science*, a general theory of organization.²⁰ Tektology was designed to provide a harmonious unity between the spiritual, cultural and the physical experience of the "working collective" in whose interest all science and activity were to be organized and all past culture, including bourgeois science, reworked. By uniting the most disparate phenomena under one conceptual scheme, tektology would allow human beings torn apart by strife to find a common language. Since the sources of strife were larger than the merely economic, the common language had to be larger than traditional Marxism, although Marxism would be included as a special case. According to this philosophy, all objects are distinguishable as different degrees of organization. The focus was not on what the world was made of, but on the nature of organization. Organized complexes or systems are composed of inter-related elements, conceived of as activities, such that the whole is greater than the sum of its parts. Living beings and automatic machines are dynamically structured complexes in which "bi-regulators" provide for the maintenance of order. Bogdanov argued that 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.

Conceiving humans as part of and within nature, as existing only through their capacity to obtain and process usable energy, the limitations of the natural environment were immediately

¹⁸ See Kenneth Jensen, *Beyond Marx and Mach: Aleksandr Bogdanov's Philosophy of Living Experience*, (Dordrecht, Holland: D. Reidel, 1978).

¹⁹ It appears that Gramsci's ideas ultimately derived from Bogdanov. See Zenovia A. Sochor, "Was Bogdanov Russia's Answer to Gramsci?" *Studies in Soviet Thought*, 22, February, 1981.

²⁰ This has not been translated. However a good idea of his philosophy can be gained from *Essays in Tektology: The General Science of Organization*, trans. George Gorelik, (Seaside, CA: Intersystems Publications, 1980). See also George Gorelik, "Bogdanov's tektology: its basic concepts and relevance to modern generalizing sciences", *Human Systems Management* 1, 1980.

brought into sharp focus. This concern was expressed *Red Star*, a novel written in 1908 by Bogdanov to proselytise his ideas.²¹ This work is set on Mars, a planet on which the communist order had already been established, in which society is governed by a "Council of Syndicates". In one conversation Bogdanov has his Martian interlocutor point out the continuing problem in Martian history of natural resource and energy shortages, despite the power of their science and technology. The highlight of *Red Star* is a debate between two Martians over whether they should exterminate the Earthlings to get access to more natural resources. Sterni defends this on the grounds that socialist society on Mars is the highest form of life. Netti, Sterni's opponent, reprimands him for proposing to eliminate "an entire individual type of life, a type which we can never resurrect or replace."²²

3. The Proletkult Movement

The Proletkult movement, inspired by and largely under Bogdanov's direction, gained over 400,000 members, and attracted the support of a wide section of the Russia's artists, musicians and writers.²³ Major Proletkult organizations were established in the big industrial towns and capitals, Proletkult cells were established in every factory, and studios, where eighty thousand workers learned and practiced the arts and sciences, were set up around the country. Between 1918 and 1923 this organization published as many as thirty-four journals.²⁴ People in part inspired by Proletkult formed the "Worker's Opposition" who opposed the bureaucratic tendencies of the new government, the "return to capitalism" of the New Economic Policy (N.E.P.) and also Trotsky's call to militarize society, and instead, called for worker's control of industry. This whole development, which resonated with developments in Western Marxism, was attacked by Lenin, who saw it as a syndicalist threat to his own political philosophy and the institutions he was building.²⁵ Lenin, who conceived history in dualist terms as a dialectical conflict between spontaneity and conscious direction, in which progress is achieved through the control of spontaneity by consciousness,²⁶ condemned the syndicalist tendencies among Marxists as an "infantile disorder".²⁷ Bogdanov in particular came under attack. Lenin, who as Robert Williams noted, "was well aware that behind the Aesopian language of 'experience', 'energy', and 'collectivism' lay the syndicalist politics of direct action",²⁸ republished his *Materialism and Empirio-criticism* to undermine Bogdanov's authority. As with his philosophy of history and political philosophy, this work affirmed a fundamental dualism between consciousness and the world, with knowledge being conceived as the true representation of the world. Late in 1920 Lenin forced the subordination of the hitherto free-wheeling Proletkult to the People's Commissariat of Enlightenment or Education (*Narkompros*), and it was later abolished altogether. By the time *Tektology* was completed in 1922, Bogdanov's prestige had been almost destroyed. However his works continued to have an influence, particularly through the

²¹ Alexander Bogdanov, *Red Star: The First Bolshevik Utopia*, ed. Loren R. Graham and Richard Stites, trans. Charles Rougle, (Bloomington: Indiana University Press, 1984).

²² *Ibid.*, p.116.

²³ See Lynn Mally, *Culture of the Future: On the Proletkult Movement in Revolutionary Russia* (Berkeley: University of California Press, 1990).

²⁴ Sochor, 1988, op.cit. p.129.

²⁵ Peter Kropotkin had written to Lenin, predicting that "the syndicalist movement ... will emerge as the great force over the next fifty years, leading to the creation of the communist stateless society" (cited by Robert C. Williams, "Childhood Diseases: Lenin on 'Left' Bolshevism", *Sbornik*, 8, 1982, without a reference. In 1920, there had been an epidemic of trade union unrest, anarchists had bombed the Moscow party headquarters, and in the Ukraine the anarchist Makhnovites, flying the black flag, were attacking the Red armies as well as the White. Towards the end of 1920, anarchist organizations in Russia were crushed.

²⁶ The best analysis of Lenin's political philosophy is Neil Harding, *Lenin's Political Thought*, (Atlantic Highlands: Humanities Press, 1983). However it is in Katarina Clark, *The Soviet Novel: History as Ritual*, (Chicago: Chicago University Press, 1981) that the best analysis of the dialectic of spontaneity and consciousness and the influence of this on Soviet culture are provided.

²⁷ V.I. Lenin, "'Left-Wing' Communism - An Infantile Disorder", (April 1920), *The Lenin Anthology*, ed., Robert C. Tucker, (N.Y.: Norton, 1975). On Lenin's relation to left Marxists, see Williams *op.cit.*

²⁸ Williams, 1980, *op.cit.*, p.397.

Commissar of Enlightenment, Lunacharskii, Bogdanov's brother-in-law and a supporter of his philosophy.²⁹

Lunacharskii had become the Commissar of Enlightenment in 1917 and remained in this position until he resigned in September, 1929. This period is regarded as the Golden Age of Soviet culture, largely due to the influence of the Commissariat for Enlightenment and the policies promoted by Lunacharskii. These achievements can be accounted for by the increased State support for education and other cultural activities, by the pluralistic policies pursued by Lunacharskii, but also by the significance accorded to culture, and correspondingly, to the intense debates on fundamental issues of culture. These debates progressively impinged upon the sciences.

4. Soviet Science

Alexander Vucinich in his study of the Academy of Sciences of the USSR characterized scientists of the 1920's as struggling to rebuild science after the chaos of the World War and the Civil War, and to fend off Marxist efforts to control science. He claimed that "...during the first ten years under Soviet rule the Academy was involved in a gruelling struggle to regain the growth momentum lost at the beginning of World War I: it was not until 1928 that its publication output reached the prewar level."³⁰ For Vucinich, it was only with the Stalinization of Soviet science, that is, the reduction of science to an instrument of the economy, that science came to be Marxist. I wish to suggest that it was the developments in science which took place under the auspices of Lunacharskii's Commissariat of Enlightenment which give some idea of what a socialist science would be like. Later developments are better characterized as revivals of Russian nihilism.³¹ Developments in science in the 1920's were moving Soviet society towards a new relationship to its natural environment, and these developments were closely associated with the conservation movement.

Initially the Commissariat of Enlightenment promoted the establishment of specialized Institutes of Research, and cultivated the support of the largely anti-Marxist scientific establishment. Marxist appointees within universities defended science as the ultimate product of human consciousness. Their views of science were essentially positivistic - science was seen as superior to and independent of philosophy, and mechanistic. Reductionist theories, such as Pavlov's psychology, were defended, and it was argued by these Marxists (and by Trotsky) that the goal of science is to explain the world in terms of chemistry and physics. However these "mechanists" were soon opposed by a new intellectual movement. In 1918 the Communist Government set up the Socialist Academy of the Social Sciences (which was renamed in 1923 the Communist Academy). It rapidly expanded its activities, and was the guiding star in widely ranging efforts to create new centres for the training of future Marxist scholars. In 1921 it set up the Institute of the Red Professoriat to supply institutes of higher learning with Marxist instructors in economics, sociology and philosophy. This provided the conditions for the establishment of a Marxist intellectual culture and in 1924, the Society of Militant Dialectical Materialists was founded. Its leader, A. M. Deborin, based in the Communist Academy and giving seminars at the Institute of the Red Professoriat, was able to create a movement devoted to critically scrutinising the philosophical assumptions of natural science.³² Bogdanov's idea of a proletarian science was refurbished.

²⁹ On Lunacharskii's policies and influence, see Sheila Fitzpatrick, *The Commissariat of Enlightenment*, (Cambridge: Cambridge University Press, 1970).

³⁰ Alexander Vucinich, *Empire of Reason*, (Berkeley: University of California Press, 1984), p.122.

³¹ That Stalinism was a conscious throwback to the nihilism of the 1860's has been argued by James H. Billington in *The Icon and the Axe*, [1966] (New York: Vintage Books, 1970), p.534f. The connection between Stalinist biology and the biologists of the 1840's, 50's and 60's (extolled by the nihilists) has been shown by Douglas Weiner, "The Roots of Michurinism: Transformist Biology and Acclimatization as Currents in Russian Life Sciences", *Annals of Science*, 42, 1985.

³² The conflict between the mechanists and the "dialectical" Deborinites has been described by David Joravsky in *Soviet Marxism and Natural Science 1917-1932*, (New York: Columbia University Press, 1961).

While the mechanists claimed the successes of reductionist science validated their position, the dialecticians were strengthened by the publication in 1925 of Engels' *Dialectics of Nature*. The dialecticians rejected both the reductionism of the mechanists as well as the organic analogies of Western anti-mechanists. While rejecting Bogdanov's philosophy, they defended similar ideas, arguing that nature is essentially dynamic and creative, generating qualitatively new processes which cannot be understood in terms of the conditions of their emergence. Humans were seen as creative participants within nature who could only be understood in their own terms, as determined neither by their constituents nor their natural or social environments, but able to control their own destinies. From 1926 onwards the dialecticians not only criticised developments within science, but were able to influence the direction of research.

In 1928, following Stalin's alliance with the supporters of the N.E.P. to expel Trotsky, Kamenev and Zinoviev from the party leadership, Stalin embraced the cause of the workers who, disaffected by the contrast between the decline of their own living standards and the growing prosperity of the peasantry, regarded the N.E.P. as a betrayal of the revolution. In response to the demands of the workers he initiated a cultural revolution to purge society of bourgeois forms of thought.³³ Initially, this move put the Deborinites in a good position to exert their influence, which culminated in 1929 when they gained control of the Communist Academy and other institutions. Entire fields of science were then scrutinized for their philosophical assumptions. However Stalin's agenda was to speed up economic growth. Arguing that immediate industrialization was required to face the growing threat from Western Europe and collectivization of land was required to supply workers with food, Stalin called for a reassertion of conscious direction over spontaneity. In this milieu, in which Stalin was working to destroy the power of the remaining Bolshevik leaders,³⁴ Deborin's ideas were no longer supported. Having breached the walls of the "bourgeois professoriat" and after having established the principle of direct political intervention in scientific institutions, Deborin and his followers were attacked in turn by former Deborinites led by M.B. Mitin for not serving the revolution.³⁵ By the end of 1930, by which time Lunacharskii had resigned as Commissar of Enlightenment in protest at the rejection of his ideals of humanistic education and cultural pluralism, the Deborinites were distinctly out of favour. While "mechanists" had been knowledgeable about science, but ignorant of philosophy, and the Deborinites had been knowledgeable about philosophy, but ignorant of science, Mitin and his followers achieved a dialectical synthesis of the ignorance of each. However there was more to Mitin's views than ignorance. He revived the ideas of the nihilists of the 1860's and 70's; in particular, the idea that science is nothing but an instrument for the development of technology. It was Mitin's defence of this view which endeared him to Stalin, who then dismissed the Deborinites as "Menshevizing idealists" - his ultimate term of abuse and dismissal. Thereafter proletarian science was no longer anti-mechanistic science, but science in the service of Five Year Plans devoted to the domination of nature.

5. The Career of Ecology

Prior to the revolution there had been a range of environmentalists in Russia roughly corresponding to the range found in Western Europe and U.S.A. (although there were also some highly original thinkers among Russian environmentalists).³⁶ To begin with there were those who were concerned about environmental destruction for purely utilitarian reasons, evaluating nature

³³ On this, see Sheila Fitzpatrick, "Cultural Revolution as Class War" and Moshe Lewin, "Society, State, and Ideology during the First Five-Year Plan", in Sheila Fitzpatrick ed., *Cultural Revolution in Russia, 1928-1931*, (Bloomington: Indiana University Press, 1978), pp.8-40 and pp.41-77.

³⁴ Stalin's main opponent was Bukharin - whose ideas were influenced by Bogdanov's work. Had Bukharin survived and defeated Stalin, the position of the conservationists would have been much more secure. On Bukharin, his relation to Bogdanov, his ideas and political career, and his struggle with Stalin, see Stephen F. Cohen, *Bukharin and the Bolshevik Revolution: A Political Biography, 1888-1938*, (Oxford: Oxford University Press, 1980).

³⁵ On this see Leszek Kolakowski, *Main Currents of Marxism 3 - The Breakdown*, trans. P.S. Falla, (Oxford: Oxford University Press, 1981).

³⁶ On the early history of Soviet ecology and conservation see Weiner, *Models of Nature, op.cit.* I am deeply indebted to Professor Weiner for sharing his vast knowledge of Russian ecology and environmentalism, and indeed for his help in my efforts to understand the dynamics of Russian culture.

only as an economic resource. Secondly there were those who extolled the intrinsic value of nature, and called for a recognition of the rights of all living things to their existence, such as Ivan Parfen'evich Borodin and Oleg Lzmailovich Semenov-tian-shanskii. But there was also a third group, the scientific one based on the development of phytosociology - the study of vegetational communities, a field in which Russians had been particularly innovative. These pioneers of plant ecology looked to virgin nature as a model of harmony, efficiency, and productivity that agriculturalists should strive to emulate. To put agriculture on a sound basis it was argued that pristine natural communities should be studied, and it was proposed that areas of nature be set aside as models (*etaloni*) within protected nature reserves (*zapovedniki*) against which cultivated land could be compared. It was this third group which gained vigorous support after the Revolution, firstly from Lunacharskii who commended the idea to Lenin, and then by Lenin who did all he could to support the environmentalists. Following Lenin's support for the first proposed *zapovednik* in 1919, responsibility for their creation and administration was granted by Lenin to Lunacharskii's Commissariat of Enlightenment to ensure their independence from short-term economic imperatives. By 1929 61 *zapovedniki* had been established, with a total area of almost 4 million hectares, distributed throughout the Soviet Union to provide the basis for developing a comprehensive understanding of the natural environment of the whole country.³⁷ After a number of battles with the Commissariat for Agriculture (*Narkomzem*) and the Commissariat for Trade (*Narkomtorg*), these *zapovedniki* were able to support a rapid expansion of ecology. Associated with this development, ecology was increasingly included in the curricula of universities and schools, and in the later 1920's ecologists were able to make a determined effort to influence State economic policy.³⁸

Before the revolution Russian ecology had focussed almost exclusively on plants and soils. With the provision of *zapovedniki*, Soviet ecologists began to appreciate the role of fauna in shaping the development of natural communities so that in the end communities were seen as a complex system of three interacting elements of equal importance - vegetation, fauna, and the abiotic environment. By 1931 when Daniil Nikolaevich Kashkarov published his great survey textbook of community ecology, *Environment and Community*, later published in English, it could be fairly argued that the Soviet Union led the world in ecology. To appreciate some of the ideas being developed by Soviet ecologists, and how these developments were related to the Communist revolution and to the ideas of Proletkult, it is necessary to examine the careers of some of the main figures.

One of the most important figures was V.I. Vernadskii. Vernadskii had developed the concept of biosphere, and had himself warned of the bio-physico-chemical limits to economic development.³⁹ While an opponent of Tsarism, he had also been an opponent of the Bolsheviki.⁴⁰ However he was sympathetic to the work of Podolinskii and had very similar ideas to Lunacharskii and Bogdanov on the need for a close relationship between science and the popular masses, on the need to develop radically new ideas in science and to leave behind the old ideas of the nineteenth century, and associated with this, on the centrality of energetic processes and complex interdependencies within nature. Vernadskii's work on geochemistry and biogeology, which led him to promote and elaborate the concept of the biosphere, were entirely in accordance with Bogdanov's tektology. Proletkult and the *Commissariat of Enlightenment* had created a sympathetic environment for such ideas.⁴¹ After the revolution, Vernadskii tried to get permanent

³⁷ *Ibid.* p.61

³⁸ On the rapid expansion of ecology in Russia in the 1920's, and the rapidity with ecology entered the curricula of universities, see (apart from the work of Weiner) J. Richard Carpenter, "Special Review: Recent Russian Work on Community Ecology", *Journal of Animal Ecology*, 8, 1939.

³⁹ On Vernadskii's concept of the biosphere see Jacques Grinevald, "Sketch for a History of the Idea of the Biosphere", in *Gaia, the Thesis, the Mechanisms and the Implications*, ed. Peter Bunyard and Edward Goldsmith, (Camelford: Wadebridge Ecological Centre, 1988) pp.1-34. See also Weiner, 1988, *op.cit.* p.44.

⁴⁰ On Stanchinskii's relation to Vernadskii, see Weiner, *Models of Nature, op.cit.*, p.80. Stanchinskii explicitly acknowledge his debt to Vernadskii.

⁴¹ See Kendall E. Bailes, *Science and Russian Culture in an Age of Revolutions: V.I. Vernadsky and His Scientific School, 1863-1945*, (Bloomington and Indianapolis: Indiana University Press, 1990).

funding in the West, but was unable to do so, while in 1925 he was awarded a newly created chair at the Academy of Science in Russia.⁴² And while Vernadskii was criticised by some Marxists, his concepts were accepted into the mainstream of science in the Soviet Union in a way which contrasts radically with the marginal place they and similar ideas have occupied in the West.⁴³

The ecologist most influenced by Vernadskii, the man who in 1931 had become the foremost ecologist in the Soviet Union, was Vladimir Vladimirovich Stanchinskii. Stanchinskii obtained his doctorate from Heidelberg University in 1906, but found it was not recognized in Russia, and had to pass external exams at Moscow University.⁴⁴ It was only after the revolution, in the new, intellectually freer environment created by the Commissariat of Enlightenment, that Stanchinskii was able to embark on a successful career. During the Civil War he headed the local El'ninsk district branch of *Narkompros* (Commissariat of Enlightenment) RSFSR in Smolensk Oblast, and was one of the organizers of the new Smolensk University set up by *Narkompros*. Playing a major role in Smolensk intellectual life, he became full professor at Smolensk University and head of its Department of Zoology, while also serving as the president of the Smolensk Society of Physicians and Naturalists, which he founded. Having an exceptionally broad vision, he soon gravitated to one of the leading theoretical problems in biology, the mechanism of speciation. He then moved on to what had been defined in the Soviet Union as the other great theoretical issue of the day: the nature of biological community. His guiding idea in this study, an idea deriving from Vernadskii but clearly resonating with Bogdanov's energistic philosophy, was that by virtue of their being in a continual state of matter- and energy-exchange with their environment, and continually changing, destroying and synthesizing substances within themselves, each species must be seen to have a very specific biochemical and physico-chemical role in the "economy of nature". Stanchinskii had visited the *zapovednik* at Askania-Nova in 1926, and decided this was an ideal spot to relocate his investigations into biological communities. In the spring of 1929 he assumed the posts of deputy director of the reserve and director of its scientific sector, simultaneously gaining appointment as head of the Department of Vertebrate Zoology at Khar'kov University.

Biological communities had previously been defined by their floristic composition, by certain structural features, or by a certain visual homogeneity. Stanchinskii investigated the food webs to identify the boundaries of communities within nature, tracing the transformation of solar energy by vegetation and other "autotrophs" - organisms which gain their energy directly from the sun, through myriad biotic pathways of the "heterotrophs" - those organisms which gain the energy from other organisms, until all the accumulated energy potential had been exhausted. He showed how the biocenosis (biological community) was characterized by relative stability, a "dynamic equilibrium" in which relative numbers of the various component species remained surprisingly constant over long periods of time, despite their theoretical ability to propagate exponentially. Placing each organism on a "trophic ladder", he pointed out that each successive rung of the ladder would have less energy in the form of food than the next lower level, and could only exist with a fraction of the bio-mass, since each successive level was dependent on the previous one for its energy supply, and energy was dissipated at each level. He then constructed an ideal mathematical model to describe the annual energy budget of a simple theoretical biocenosis to guide his empirical research, and developed a methodology and the instrumentation for measuring the biomass of the various component species of a biocenosis.

What is significant about Stanchinskii's career is not simply the ideas he developed, which are now recognized to have been about ten years in advance of the work of American ecologists (whom he influenced), but the way in which his career was made possible by changes wrought by

⁴² See Kendall E. Bailes, *Science and Russian Culture in an Age of Revolutions: V.I. Vernadsky and His Scientific School, 1863-1945* (Bloomington and Indianapolis: Indiana University Press, 1990), p.161.

⁴³ For the place of Vernadskii's ideas in Russian science see DeBardeleben, *The Environment and Marxism-Leninism*, op.cit. p.93. On the place of these ideas in the West see Lynn Margulis and Edward Goldsmith, *Gaia, the Thesis, the Mechanisms and the Implications*, ed. Peter Bunyard and Edward Goldsmith, (Camelford: Wadebridge Ecological Society Centre, 1988), p.166.

⁴⁴ For details on the life and career of Stanchinskii, see Weiner, *Models of Nature*, op.cit. pp.78-8 and passim.

the communist government, and the status his ideas were accorded within the Soviet Union. It appears unlikely that Stanchinskii's career would have been possible without the new opportunities opened by the expansion of education, by the establishment of new scientific institutions, and by the establishment of *zapovedniki* inaugurated by the communist government. It also appears unlikely that the diversity of theoretical approaches to ecology developed in the 1920's and early 1930's could have taken place in the rigid institutions of pre-war Russia. The cultural flowering of the 1920's, of which the development of ecology was a part, can only be accounted for by the ferment created by the significance accorded to culture, particularly to science, and the Marxist challenges to the assumptions underlying the sciences. This seems particularly evident in the case of Stanchinskii's work. The favourable reception of Stanchinskii's ideas can also be accounted for by the intellectual environment created by Bogdanov's philosophy and the Proletkult movement. The high status accorded to science, and the high status accorded to ecology within science, particularly when this was formulated in terms of energetics, gave Stanchinskii a significance in Soviet society unmatched by ecologists in other countries.

This high status attracted the attention of the Deborinites. I.I. Bugaev of the Communist Academy who was assigned the task of investigating the ecologists, attacked those ideas which failed to allow for emergence, and thereby the irreducibility of humanity to biology. Pachoskii's attempt to prove the necessity of inequality in nature and to extend this to humanity was censured. But Stanchinskii was able to reformulate his ideas to accord with the strictures of the Deborinites, and arguably, strengthened his theory and research program in the process. He replaced the static-sounding notion of the equilibrium of the biocenosis with the notion of "proportionality" and emphasised the continuous self-creation of the biocenosis which he depicted as growing out of interactions among its components and between them and the abiotic environment, with the result that new syntheses were continually arising in the form of successional series.⁴⁵ His work was then not only acceptable to the Deborinites, but could be taken by them as further corroboration of the dialectical nature of the world.

With the backing of his ecological theory, Stanchinskii was able to argue for a role for ecology in economics. He argued that by studying the energy flows in a whole range of biocenoses, humans would be able to calculate the productive capacities of these natural communities and would be able to structure their own economic activity in conformity with them. He also saw such a program of biocenotic research as an aid in achieving biotic protection of cultivated croplands and thereby overcoming the need to use harmful pesticides. Stanchinskii played a major part at the First All-Russian Congress for the Conservation of Nature held in September, 1929. In this, he argued that ecologists must play a major part in the formulation of the Five Year Plan, arguing that conservation organizations must be able to review plan targets and monitor plan fulfilment. The Congress accepted his arguments and resolved:

The economic activity of man is always one form or another of the exploitation of natural resources ... The distinction and tempo of economic growth can be correctly determined *only* after the detailed study of the environment and the evaluation of its production capacities with the aim of its conservation, development and enrichment. This is what conservation is all about.⁴⁶

The ecologists failed in their effort to gain a place in economic planning within the Soviet Union. They nevertheless became the most trenchant critics of the implementation of the Five Year Plan. They opposed the damming of rivers without due care for the effects of this, the collectivization and uniform mechanization of agriculture, the efforts to acclimatize exotic fauna, and interference in the lifestyles of traditional societies occupying ecologically fragile environments. They in turn drew a massive response from the Stalinists who condemned the conservationists as "organically alien to active youth and in particular to Soviet Youth, seized ... with the enthusiasm of socialist construction and reconstruction."⁴⁷ V.L. Komarov argued in

⁴⁵ Douglas Weiner, "Community Ecology in Stalin's Russia", *Isis*, 75, 1984, p. 692.

⁴⁶ Douglas Weiner, *The History of the Conservation Movement in Russia and the U.S.S.R. from its Origin to the Stalin Period*, (Ph.D. thesis, Columbia University, 1983), p.348.

⁴⁷ *Ibid.* p.275.

1931 that all reference to "plant communities" should be expunged from biology, a call which foreshadowed a drive against ecology by I.I. Present, a colleague of Lysenko, who was committed to the wholesale acclimatization of exotic species and creating a world in which "All living nature will live, thrive, and die at none other than the will of man and according to his designs."⁴⁸ Stanchinskii lost his job, the research station at Askania-Nova was closed down, and in 1934 he was arrested. The typesetting for his book which was about to be published was destroyed. Although conservationists fought an effective rearguard action, this was eventually defeated, and the science of ecology was virtually suspended for two decades.

6. Conclusion

The story of Proletkult, of Bogdanov, Lunacharskii and the ecologists, is the story of the path not taken. But it was a path sufficiently ventured upon to show what might have been if Leninism, then Stalinism, had not triumphed. It is this untaken path, the path of cultural revolution on the basis of a post-dualist (and post-mechanist) conception of the world in which people are seen as active, conscious participants within nature rather than as standing over and above nature, conjoined with a struggle to transform the social order which engendered such dualism - the commoditization of the world, the division between intellectual and manual labour, and relationships between people based on domination and subordination, which modern environmentalists must now consider.

⁴⁸ *Ibid.* p.517.