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ALEKSANDR BOGDANOV: PROLETKULT AND CONSERVATION

1. Introduction

The most important figure among Russia's radical Marxists was A.A. Bogdanov (the pseudonym of Aleksandr Aleksandrovich Malinovskii). Not only was he the prime exponent of a proletarian cultural revolution; it was Bogdanov's ideas which provided justification for concern for the environment. And his ideas are not only important to environmentalists because they were associated with this conservation movement; more significantly they are of continuing relevance because they confront the root causes of environmental destruction in the present, and offer what is perhaps the only way to overcome these causes.¹ Bogdanov's career and ideas are therefore worth investigating in more depth.

2. The Bogdanov's Life and Concerns

Bogdanov is historically significant in a number of different contexts.² Born in August, 1873 into the family of a teacher in Sokolko, Province of Grodno,³ Bogdanov first studied natural sciences at the University of Moscow and then medicine at the University of Kharkov from which he graduated in 1899. But even before graduating he had become a radical political activist. In 1894 he was banished from Moscow University to Tula for his part in a student protest. He joined pro-revolutionary movements and from 1896 onwards worked as a revolutionary propagandist. Originally a Narodnik, Bogdanov soon became a Marxist. By the winter of 1895-96 he had become a social democrat by conviction, and he joined the Social Democratic Party in 1898. However he remained sympathetic to anti-centralist and anti-State sentiments of the Narodniks, and later embraced many of the ideas of the anarcho-syndicalists. He continued his work as a propagandist after his graduation in 1899 and was arrested and sent into exile to Vologda in 1901. In 1904 he was one of the founders of the Bolsheviks, and until his expulsion in 1909, Bogdanov was the Bolsheviks' second in command and the faction's principle leader in Russia. In the uprising of 1905 he was the chief Bolshevik and a leader in the St. Petersburg Soviet, and was arrested and jailed until the summer of 1906. Together with Lenin, Bogdanov founded, and then became editor of the Bolshevik journal *Vpered* (Forward). The polemic between Lenin and Bogdanov associated with their break was one of the most important chapters in the history of Bolshevism. Bogdanov led a group of left-wing Marxists, the *Vperedists*, a group which included the future heads of the Commissariat of Enlightenment, A. Lunacharskii and M. Pokrovskii, and the author, Maxim Gor'kii. It was in the platform of this group that the slogan "proletarian culture" was first formulated. Lenin devoted an entire year to writing *Materialism and*

¹ I have tried to reformulate Marxism in the spirit of Bogdanov to address the environmental crisis in *Beyond European Civilization: Marxism, Process Philosophy and the Environment*, (Bundgendoro, Australia: Eco-Logical Press, 1993).

² Bogdanov wrote a brief autobiography describing his main political involvements and his main intellectual achievements. This is translated in Georges Haupt and Jean-Jacques Marie, *Makers of the Russian Revolution: Biographies of Bolshevik Leaders*, tr. C.I.P. Ferdinand and D.M. Bellos (Ithaca and New York: Cornell University Press, 1974).

³ George Gorelik, "Introduction", A. Bogdanov, *Essays in Tektology: The General Science of Organization* (2nd ed., Seaside: Cal.: Intersystems Publications, 1984), p.i. Most writers on Bogdanov mistakenly give Tula as his birthplace.

Empiro-Criticism to refute "Bogdanov and Co.",⁴ and Lenin continued to regard Bogdanov as his main rival for the allegiance of left-wing Marxists after the revolution in 1917. Bogdanov's ideas provided the matrix for the "cultural Marxist" alternative to Plekhanov-Leninism even after Lenin's death.

Bogdanov was also a major intellectual figure. While still a student he wrote a book on economics and developed an original interpretation of Marx's economic theory,⁵ and then published another on philosophy. He wrote on knowledge and culture and was the most original proponent of the effort to weld Marx's social theory with the "scientific philosophy" of neo-positivism.⁶ But he was also influenced, at least indirectly, by Georges Sorel and Friedrich Nietzsche, and was concerned with "meaning of life" issues.⁷ He anticipated Western Marxist theorists of culture and sociologists of knowledge and systematically analysed the genetic and functional relationships between ideology and social structure through history and laid the foundations for a general theory of organization, foreshadowing the development of cybernetics, general systems theory and praxiology.⁸

Finally, combining his political and intellectual work, Bogdanov participated in the organization (along with the other *Vperedists*) of the first social-democratic party schools at Capri in 1909 and Bologna in 1910. He became the principle proponent of the view that it was necessary to develop a new proletarian culture which would be the future socialist culture, and set forth a practical programme for this in *Cultural Tasks of Our Time*, published in 1910. In this project he called for the establishment of a worker's university as a comprehensive educational and scientific institution outside existing educational institutions designed to eventually take their place, and for the production of a proletarian encyclopaedia. After the revolution he founded the Moscow branch of the Proletarian Culture Movement (Proletkult), a movement formally instituted as an all-Russian organization in 1918.⁹ This movement, which Bogdanov dominated, gained the allegiance of many of Russia's leading writers and artists, and by the end of 1920 had between 400,000 and 500,000 members and had established a Proletarian University. Bogdanov's ideas continued to influence education after Lenin had reined in and then destroyed Proletkult.¹⁰ As Sochor has pointed out: "Even those who criticized Bogdanov during the 1920s conceded that, despite all the controversy, he continued to

⁴ Lenin's motives for writing this were complex. David Joravsky argues that Lenin's primary concern was that the Bolsheviks be seen as orthodox. See Joravsky, *Soviet Marxism and Natural Science: 1917 - 1932* (N.Y.: Columbia University Press, 1961), p.33. However John Biggart argues that Lenin was trying to discredit Bogdanov as a Marxist to reinforce his own position in the Bolshevik leadership. ("Anti-Leninist Bolshevism": the *Forward* Group of the RSDRP," *Canadian Slavonic Papers*, 23, (2), June, 1981.

⁵ Bogdanov's first book, *A Short Course on Economic Science* initially published in 1897, went through fifteen editions and was still being published and used as a text for students in 1924 when Bogdanov was coming under increasing criticism.

⁶ K.M. Jensen, *Beyond Marx and Mach: Aleksandr Bogdanov's Philosophy of Living Experience* (Dordrecht: Reidel, 1978).

⁷ As Zenovia A Sochor has argued, "A.A. Bogdanov: In Search of Cultural Liberation" in *Nietzsche in Russia*, ed. Bernice Glatzer Rosenthal (Princeton: Princeton University Press, 1986).

⁸ The best brief characterization of Bogdanov's theory of organizations is George Gorelik, "Bogdanov's tektology: its basic concepts and relevance to modern generalizing sciences." *Human Systems Management* 1, 1980. Gorelik is the translator of Bogdanov's *Essays in Tektology* and has written a number of expository papers on Bogdanov. See also Rafael E. Bello, "The Systems Approach - A. Bogdanov and L. Von Bertalanffy", *Studies in Soviet Thought*, 30, 1985.

⁹ See Lynn Mally, *Culture of the Future: On the Proletkult Movement in Revolutionary Russia* (Berkeley: University of California Press, 1990).

¹⁰ This is evident in Sheila Fitzpatrick's study, *The Commissariat of Enlightenment* (Cambridge: Cambridge University Press, 1970).

attract 'a large number of young enthusiasts.'"¹¹ In 1918 Bogdanov became the first director of the Socialist Academy of Social Science (after 1924 the Communist Academy, a name change which Bogdanov opposed) and continued in that position until 1923. Despite his concern to create a proletarian culture, he took the side of the "mechanists" against the efforts of the "dialecticians" to impose a "politically correct" philosophy on scientists.¹² After Lenin's death in January, 1924 Bogdanov was asked to rejoin the Party by the Bolshevik leaders Zinoviev, Kamenev and Bukharin, who hoped to bring him into collaboration against Stalin, an invitation which, perhaps unfortunately, he declined. In 1926 Bogdanov founded the first Russian Institute for Blood Transfusion. He died in 1928 after an experiment in which he exchanged his blood with a seriously ill patient.

Bogdanov's concern for the natural limits to economic development were expressed in his utopian novel *Red Star*, published in 1908. On the basis of this tract, Loren Graham commended Bogdanov's prescience in predicting the environmental problems which economic development would inevitably bring.¹³ However this alone would hardly justify considering Bogdanov of major significance to the environmental movement. Douglas Weiner, who has provided us with the history of the early Soviet conservation movement, has shown that the most important group in this movement were field naturalists and ecologists, and that the individual most responsible for providing the conditions under which these scientists and other conservationists could influence government was Anatolii Lunacharskii, the Commissar of Enlightenment.¹⁴ Furthermore it was Lenin who provided an important initial impetus to the conservation movement. He supported the efforts of the ecologists to have conservation issues addressed, appointed Lunacharskii Commissar of Enlightenment, and conferred responsibility for administering conservation matters on the Commissariat of Enlightenment. What I will suggest is that it was Bogdanov who offered the basic philosophical direction required for the conservationists to flourish and who helped create the intellectual milieu within which ideas in ecology could be developed to provide the intellectual foundation for the conservationists.

Bogdanov's significance in this regard is not appreciated because the range of his achievements and the diversity of the fields to which he contributed has blinded people to the interrelationship among all aspects of his work. Yet it is in the unity of his work, both intellectual and political, that his importance to the conservationists in the Soviet Union lies. What is unique about Bogdanov is that while anticipating Western Marxist theorists of culture, he was also a scientist concerned to see humans as part of and within nature; while developing a critical sociology of knowledge showing how science has been expressive of and implicated in oppressive social relations, he was proposing an alternative form of science appropriate for a social order free from class domination; and while being a highly original thinker, he was also an active revolutionary who went some way towards realizing the ideals for which he was fighting. Although influenced by a great variety of thinkers, including Spencer and Bergson, Bogdanov was attempting to mediate between two major traditions: German social thought, pre-eminently the work of Marx, and

¹¹ Socher, 1988, op.cit. p.56.

¹² On this see David Joravsky, *Soviet Marxism and Natural Science: 1917 - 1932* (N.Y.: Columbia University Press, 1961).

¹³ Loren R. Graham, "Bogdanov's Inner Message" in Alexander Bogdanov, *Red Star: The First Bolshevik Utopia*, ed. Loren R. Graham and Richard Stites (Bloomington: Indiana University Press, 1984).

¹⁴ Douglas Weiner, *Models of Nature: Ecology* op.cit.

German natural science as this was evolving towards its greatest achievements in the early twentieth century, and to transform the ideas of each tradition in the light of the other into a coherent world-orientation for political action and for the creation of new form of society. His contribution was to understand science as part of culture and of socio-economic formations, while simultaneously situating the dynamics of societies within the broader context of nature; and carrying this out as an integral part of his revolutionary work of creating a new social order.¹⁵

3. Bogdanov's Point of Departure

Bogdanov claimed that it was only with Marx's publication of *A Contribution to the Critique of Political Economy* in 1859 that the foundations were laid for a scientific study of the structure and dynamics of human society.¹⁶ In the following four decades Marx and his followers had successfully explained a mass of historical developments. However Bogdanov was highly critical of Marxists who treated Marx's works as the embodiment of absolute and eternal truths. He equated this with outmoded authoritarian and religious frames of mind. To begin with, there were defects in Marx's ideas. His division between the economic base and the superstructure was problematic. The notion of forces of production was defined ambiguously. Sometimes it was taken to refer to just tools and equipment, at others to include the human social activity and the technological knowledge, skills and methods of labor required to use them. And no distinction was made between relations of production occurring in the actual labor process and relations associated with appropriation of the produce. "Economic structure" was also imprecisely defined. How could law, which defined legal relations of ownership, be relegated to the superstructure when it is the basic element in the articulation of the mode of production? And Marx did not explain why every society needs ideology, or show what is the relationship between ideology and economy. More importantly, revolutionary changes in the natural sciences, such as Darwin's theory of evolution, raised serious questions which Marxists could not ignore. Marxist theory of social change needed to be brought into relation with biological theories of change and with the new scientific psychology. It needed to take a stand on the accelerated mathematization of science, and it needed to give a place to energy.

The most important scientific influences on Bogdanov were the Monists: Ernst Haeckel (1834-1919) - the biologist who coined the term ecology and who late in life founded the Monist League,¹⁷ and Wilhelm Ostwald.¹⁸ While Haeckel was the greatest exponent of Darwin's theory of evolution in Germany in the nineteenth century, and a supporter of eugenics, he was more fundamentally influenced by the *Naturphilosophen*, the anti-mechanistic philosophers who strove to create a new science of nature in the late eighteenth and early

¹⁵ See Georgii Gloveli, "'Socialism of Science' versus 'Socialism of Feelings': Bogdanov and Lunacharsky," *Studies in Soviet Thought*, 42, 1991.

¹⁶ A.A. Bogdanov, *Iz psikhologii obschestva [From the Psychology of Society]*, (St. Petersburg, 1904). For an exposition of Bogdanov's arguments, see Alexander Vucinich, "A Blend of Marxism and Neopositivism: A.A. Bogdanov", *Social Thought in Tsarist Russia*, (Chicago: University of Chicago Press), 1976, p.208ff.

¹⁷ The importance of Haeckel to Bogdanov has been convincingly argued by Mark B. Adams, "'Red Star': Another Look at Aleksandr Bogdanov," *Slavic Review*, 48, 1, 1989, p.10f.

¹⁸ Alexander Vucinich in his chapter on Bogdanov in *Social Thought in Tsarist Russia*, op.cit. argues that Ostwald's energism was an enduring influence on all Bogdanov's work. See also Alexander Vucinich, *Darwin in Russian Thought* (Berkeley: University of California Press, 1988), p.367f.

nineteenth centuries.¹⁹ In particular Haeckel was influenced by Goethe, and referred to Lucretius, Bruno and Spinoza as sources of his opposition to the dualism between Spirit and matter. He argued that they had all shown "the oneness of the cosmos, the indissociable connection between energy and matter ... mind and embodiment."²⁰ Haeckel's successor as the chief exponent of Monism and head of the Monist League in Germany, Ostwald, was the leader of an important group of scientists who were extending the ideas not only of Haeckel, but also of Mach, who argued against atomism on the grounds that all untestable hypotheses should be eliminated from science, and that science should proceed by taking an intuitively plausible principle and then striving to harmonize all particular ideas with this principle. Ostwald argued that all observable phenomena should be reduced to the principle of energy, and he proposed the development of all scientific fields in terms of energetics.²¹ At first only inanimate matter was to be reduced to this principle, then the phenomena of life were included, and finally from 1900 onwards Ostwald attempted to deal with psychological phenomena as energetic processes. Integrating Ostwald's program into his own schema of concepts and propositions, Bogdanov represented human society as an integral part of nature, an energetic process subject to self-adjusting natural processes which could be scientifically measured, and he formulated in terms of this scheme an interpretation of the historical succession of social systems and a new theory of knowledge.

4. Society as a Cultural Process Within Nature

Bogdanov's first philosophical work, *Basic Principles of a Historical View of Nature* published in 1899, argued for a synthesis of Newton and Darwin, or rather Haeckel's version of Darwin, giving a central place to energy in this synthesis. This program was further developed in his next work, *Knowledge from a Historical Point of View* published in 1902. In these books Bogdanov argued that nature and society together are perpetually changing, although without there being any purpose in this change, and the social sciences should be based on natural science models. This was essentially an extension of Ostwald's project of conceiving everything in terms of the transformation of energy.²² As Bogdanov understood it, the conservation of energy is the same as the law of uniformity and continuity of natural processes: everything must issue from something else. Accordingly, the basic task of science is to study the interaction and succession of natural phenomena, and Bogdanov saw the energy theory of causation associated with this as one of the major innovations of nineteenth century science. Science is no longer concerned with cause and effect as distinct phenomena, but with the processes involved in causal sequences. The focus is shifted from the ontological to the functional aspects of nature; modern science is not so much interested in what things are but in how they work. Extending this approach to humanity supports the historical approach in the social sciences, placing the primary emphasis on the

¹⁹ For the source and structure of Haeckel's ideas and their importance for conservation, see Anna Bramwell, *Ecology in the 20th Century: A History* (New Haven and London: Yale University Press, 1989), ch.3.

²⁰ E. Haeckel, *Monism as Connecting Religion and Science. The Confessions of Faith of a Man of Science* (London and Edinburgh, 1894), p.5.

²¹ On Ostwald, see Yehuda Elkana, "Boltzmann's Scientific Research Program and its Alternatives", *The Interaction between Science and Philosophy*, ed. Y. Elkana (Atlantic Highlands, N.J.: Humanities Press, 1974), pp.243-279, p.265.

²² It was not only the second book that was written under the influence of Ostwald, as Vucinich suggests. Bogdanov makes clear that *Basic Principles* was also written under Ostwald's influence in *Empiriomonism* Vol. III (St. Petersburg, 1906), p.xvii footnote. This is pointed out by Karl G. Ballestrem, "Lenin and Bogdanov", *Studies in Soviet Thought* 9, 1969, p.308 n.3.

interaction of social processes, particularly the relationship between technology and ideology. The key process revealing the regularities of social change is adaptation, the main mechanism of which is the social selection of the most effective techniques for the satisfaction of changing social needs. All phenomena of social dynamics are specific adaptations to increases and decreases in social energy, and as with other organic phenomena, there is a spontaneous tendency to eliminate contradictory tendencies and to strengthen harmonious relations. However this heavy dependence on natural science models did not mean that Bogdanov thought that the social sciences could be reduced to physics or biology. Mental life was seen as the most complex form of biological development, and sociality a higher manifestation of such mental development. The uniqueness of each level of development must be appreciated. Furthermore, a sociologist cannot conduct experiments and confronts the infinitely complex concrete details of social life. To go beyond description, social scientists must resort to an abstract method which is both deductive and historical to reveal the "tendencies" of social processes.

In *Knowledge from an Historical Point of View* Bogdanov was concerned primarily with applying the energy approach to the study of the evolution of knowledge. For Bogdanov economic life is an integral part of social being, and social being is identical to social consciousness; therefore it is knowledge which is the moving force of history and the main line of social progress. Taking knowledge as a sociological rather than an epistemological phenomenon, he argued that the study of the inner dynamics of social relations is equivalent to the study the development of knowledge: "An analysis of cooperation within individual groups provides the basis for a study of general forms of knowledge, characteristic for the entire society; an analysis of cooperation within individual groups provides the basis for the study of special ideological tendencies."²³ In his later writings the categories "social being" and "social consciousness" are merged in the category "culture".²⁴ The central theme of Bogdanov's sociology are then the regularities in social changes as recorded in cognitive culture.

Reformulating Marx, he argued that social being has two levels, the technical and the organizational. The organization of activity at the technical level generates technical knowledge or technology. For Bogdanov, "technology" denotes not material equipment but the organization and utilization of knowledge related to external nature. As the technical level became more complex, humans came to need organizational forms. This is the realm of ideology, or what has been called in idealist philosophy, the realm of spirit - concepts, thought, norms, all of those things which are called ideas in the broadest sense of the word. Bogdanov saw no essential difference between technical and ideological labor. Both exert effort against resistance; in the case of ideological labor, against the labor nature of humans. He was concerned to give due recognition to both technology and ideology in the advancement of society; they are correlates. Techniques are the very essence of human social existence and the primary matrix of social relations, but ideology, the entire sphere of social life outside the technical process, is also a vital social force.

²³ A.A. Bogdanov, *Poznanie s istoricheskio točki zreniia* [*Knowledge from an Historical Point of View*], (St. Petersburg, 1902), p.193f; translated and quoted by Alexander Vucinich, *Social Thought in Tsarist Russia*, op.cit., p.212.

²⁴ See A.A. Bogdanov, "Razvitie zhizni v prirode i v obschestve", in *Iz psikhologii obshchestva* [*From the Psychology of Society*] (St. Petersburg, 1904). This development is described by John Biggart in "Marxism and Social Anthropology", *Studies in Soviet Thought* 24, 1982, pp.1-9, esp. p.4. Biggart argues that this could have been an indirect source of inspiration for the American school of "cultural materialists" (Leslie White, Julian Steward, Betty Meggars and Marvin Harris).

5. Knowledge as the Organization of Experience

To develop this conception of society required more attention to the nature of knowledge. Bogdanov turned to the empirio-criticism of Ernst Mach, Ostwald's source of inspiration, and of Richard Avenarius, synthesizing their epistemological views with Marx's theory of social history to formulate an original theory of knowledge which he called empiriomonism.²⁵ However this did not involve abandoning Ostwald's energism, although this was pushed into the background, and it reinforced his commitment to the Monism of Haeckel and Ostwald. Bogdanov signified by the "monism" of his "empiriomonism," a world-view guided by a single comprehensive principle, which provides a key to all understanding and is applicable to the natural as well as the social sciences, so that reality can be experienced as one unitary organic whole, with all its parts interrelated.²⁶

Along with the empirio-critics Bogdanov fully embraced the idea that what is real is experience, and that the goal of knowledge is to orient people therein. He also accepted the empirio-critics doctrine that experience comprises things and mental representations - it is not to be equated with sensations in the minds of individuals. However following Marx, that is, Marx understood as a philosopher of praxis rather than as a materialist, Bogdanov qualified this, arguing from "the labor point of view" or "the point of view of collective labor activity", that experience is the sum total of all human effort and resistance to that effort.²⁷ While the empirio-critics called for the analysis of experience into its component parts or elements to discover their bonds and relationships, Bogdanov argued that the components of experience are not *a priori* elements; there are many possible ways to divide experience into elements, some more useful than others. Elements are separated out to accord with the needs of production, they are the product of a certain amount and type of effort directed against a certain amount and type of resistance. Such activity is first physical and then mental; one first makes a brick as a physical element and then forms the idea of it. Matter, argued Bogdanov, is a mere abstraction, a metaphor designating that which resists labor.

Bogdanov also claimed there were weaknesses in the empirio-critics' analysis of the relation between mind and the physical world. For them the elements, which are neither mental nor material, are bound together by either psychical laws or physical laws, a division which Bogdanov regarded as failing to account for the relationship between neurophysiological processes and sensations. For him the psychical and the physical differ in being different levels of organization of experience. The psychical is individually organized experience within the limits of personal life, while physical experience is the product of social organization. The objectivity of the physical does not have a basis in epistemology but has a sociological basis as the product and reflection of social-labor organization. To deny the social-conditionality of the objective is to be "non-dialectical, non-historical and non-Marxist".²⁸ Both psychical and

²⁵ This doctrine was first worked out in A.A. Bogdanov, *Empiriomonizm: Stat'i po filosofii* [*Empiriomonism: Articles on Philosophy*], 3 Volumes (St. Petersburg 1904-6). However the doctrine was further developed and more succinctly stated in *Filosofiiia zhivogo opyta*, [*Philosophy of Living Experience (PLE)*] (St Petersburg, 1913). This work has been thoroughly analysed by Jensen, op.cit.

²⁶ This is how Zenovia Sochor characterized Bogdanov's monism in "A.A. Bogdanov: In Search of Cultural Liberation," op.cit. 1986, p.302 n.29, citing Bogdanov, *Novyi Mir* (Moscow, 1905), p.32.

²⁷ Bogdanov's understanding of experience, both physical and psychical, is carefully analysed by K.M. Jensen. Jensen shows how Bogdanov has generally been misunderstood on this crucial point. (Jensen op.cit., Chapter IV "Empiriomonism", esp. pages 126 & 128.

²⁸ *PLE* op.cit. p.287 (cited by Jensen, *ibid.* p.130).

physical knowledge are the products of long historical developments, the gradual, but inexorable expansion of social experience which has produced the growing complexity, depth and precision of humanity's organization of experience.

In defending this social theory of knowledge Bogdanov disagreed with the empirio-critics over the importance of explanation. As Bogdanov interpreted them, the empirio-critics were opposed to the "substitution" of metaphysical constructs for experience; for instance atoms for observed phenomena such as heat flows or correlations between temperature, pressure and volume. The empirio-critics wanted to free science from such substitutions and reduce knowledge to pure description of experience, which could be expressed in functional relationships between variables. For Bogdanov, description is a slave to experience; knowledge is the organization of experience, to form and fulfil it. While he was sympathetic to attacks on substitutions which had come to be taken as absolutes, he argued that all advances in knowledge are based on substitution - knowledge is organized by cognitive models through substitution. Substitution begins with language. For instance the word "anger" is a substitute for certain gestures and facial expressions. Through substitution people can understand one another and can explain the sense of their actions. From this elemental level, substitution has been carried over to all other levels of experience to understand, predict and explain, and to facilitate the control of nature. The process of substitution involves taking an object and effectively changing it into something else, while at the same time admitting the essential difference. For instance to say that the sun is a star, a conglomeration of gases in space which behaves according to the laws of motion, is to substitute something for the sun as it is visually apprehended by people. One complex of elements of experience is replaced by another. Substitution is employed at all levels of thought, including philosophical and scientific explanation. In general, advances in understanding are made by substituting for a simpler, less plastic complex with which relatively little may be done in practice or consciousness, a complex which is more subtle, more plastic and therefore more useful. Hence the tendency towards mathematical models in science. Substitution is the basic method for bringing all experience into a unified whole. What is required is not the abolition of substitution but a readiness to substitute indefinitely, and a recognition of the practical and conscious activity involved in such organization of experience. Bogdanov called for infinite substitution.

It is this theory of substitution which provides the foundation for Bogdanov's sociology of knowledge. One of the problems raised by the theory of substitution is where do the "substitutes" come from. Bogdanov elaborated a new form of the dialectic to account for this - a dialectic of social labor. He argued that workers who initially develop their separate perspectives through labor, come into conflict, which is intensified by the urge to complete a task. The conflict is resolved when one workers' perspective prevails over the other, or some third perspective is generated which is agreed upon. This scheme, "created in one realm of social experience, may then be applied beyond its limits to other realm of phenomena, social and extra-social." This Bogdanov characterized as the law of "sociomorphism".²⁹ Cognitive models which are used as substitutes may originate in simple social-labor practice, in the methods of social-labor technique, or in economic relations. Cognitive forms taken from the real world in this way, then reinforce the way this world is

²⁹ Ibid. p.218, cited by Jensen, *ibid.* p.93. *PLE* p.291f.

organized. Particular substitutes are taken as absolute, are fetishised and treated as idols, just as the institution of property is fetishised and idolized in capitalist society. For instance, Bogdanov argued that:

... the savage living in a commune which is organized on the basis of authoritarian leadership and passive submission, thinks, that is, organizes in his consciousness, of the entire universe in the same way: he thinks of the ruling "god" and the people and things subordinated to him; and he organizes them in his thought into the ruling, leading "soul" and the passive "body".³⁰

Conceiving of the universe in the same way, fetishizing the authoritarian relationship which is being used as a substitute, legitimates such authoritarian leadership and makes it difficult to even conceive the possibility of organizing society in a different way. Extending this theory of substitution Bogdanov argued that atomism "originated in ancient thought when *individualism* developed in society setting men apart. People were accustomed to think about themselves and others as isolated entities, and they transferred this habit onto notions about nature: in Greek, 'atom' means an 'individual,' and in Latin it means 'indivisibility.'"³¹ Atomism is then fetishised and used to legitimate such individualism. In *Philosophy of Living Experience*, Bogdanov used this way of analysing the source of cognitive models to explain the history of materialist philosophy from the pre-Socratics to the materialists of the nineteenth century. He also explained the ideas of the empirio-critics, whom he noted were socialists, as the product of a new class within capitalist society between the bourgeoisie and the proletariat which had partially overcome the division between intellectual and manual labor, and by virtue of this had come to see the substitutions of past science as fetishes, just as they had come to recognize that property is a fetish.³²

The criticism of empirio-critics for failing to recognize the importance of explanation, leading to the development of the theory of "substitution", and the socio-historical analysis of the development of knowledge utilizing the notion of "sociomorph", closely parallels the views of knowledge which developed in opposition to logical positivism in the West. "Substitution" corresponds to the central place given to analogies or to metaphors by Thomas Kuhn, Rom Harré and Mary Hesse, while the theory of "sociomorphs" anticipates the efforts of Marxist historians of science such as Franz Borkeuau, Edgar Zilsel and Robert Young to show the relationship between scientific theories and society. However while post-positivist philosophers of science such as Mary Hesse and Marxist historians of science such as Robert Young have been at loggerheads over whether developments in science should be understood in terms of internal criteria or explained by external factors, Bogdanov combined these two perspectives. He did so by a number of stratagems.

Bogdanov rejected the claim that any knowledge is absolute, arguing for the relativity of ways of organizing experience to historical conditions. While the cosmology of the Middle Ages must now be rejected, it can still be recognized as the best way of organizing experience at that time. However Bogdanov was not a complete relativist. He characterized the superiority of modern knowledge by casting in terms of it an historical narrative defining the achievements and limitations of past theories. As Alasdair MacIntyre has convincingly argued, this is the way theories can be evaluated without recourse to absolute criteria

³⁰ A. Bogdanov, *Essays in Tektology: The General Science of Organization* [1921] (Seaside, Calif.: Intersystems Publications, 2nd ed. 1984), p.29.

³¹ Loc.cit.

³² Jensen op.cit. pp.50-66, 81-86.

standing independent of all theories.³³ However Bogdanov did more than this. He also cast into an historical narrative the changing social conditions of knowledge, and evaluated these also by their achievements and limitations from the perspective not of present knowledge, but from the hypothetical perspective of knowledge developed in a society of the future which would enable the fragmentation of present knowledge to be overcome. As Bogdanov wrote in his second utopian novel *Engineer Menni*, also set on Mars after the creation of a communist society:

Thus was born "Universal Science," which soon embraced the entire organization experience of mankind. The philosophy of former times was nothing but a vague presentiment of this science, while the laws governing nature, social life, and thought that had been discovered by the different disciplines turned out to be individual manifestations of its principles.³⁴

This theory of knowledge has dramatic implications. It implies that the limitations in the science of Bogdanov's own time were at least in part a manifestation of the limitations of the form of society scientists were living in, and conversely, that the existing social order was being maintained by the fetishized substitutions of such defective forms of knowledge. Bogdanov not only interpreted and evaluated the knowledge of his day in relation to past knowledge. Constructing his history of science involved projecting the direction science should take in the future; and he strove to lay the foundations for this new science. And since he saw science as indissociable from social conditions, he was able to project what social conditions would be needed to develop this new science - social conditions which he believed would also require this new science. What Bogdanov called for, and devoted most of the rest of his life promoting and developing, was the creation of a new way of organizing experience, a proletarian culture.

6. Proletarian Culture and Tektology

The need to create a new proletarian culture had been a concern of Bogdanov's from 1904 onwards.³⁵ However after having completed the elaboration of his empiriomonist philosophy and having broken with the Leninists, Bogdanov focussed most of his efforts in this direction. As he understood it, the failure of the revolution of 1905 had shown that the workers were not yet prepared to take political power, and that even if they gained political power, they were not culturally prepared to create a genuinely socialist society. Unlike Lenin whose major concern was with the seizure of power, Bogdanov was more concerned with the longer term project of creating a socialist society.³⁶ It followed from Bogdanov's social theories that it is not the property relations of capitalism which are the most important means of domination in society but the way production is organized. And since social labor is based on the organization of experience, what is required to change the way production is organized is the creation and development of new ways of organizing experience, a struggle against the fetishisms and idols which have

³³ Alasdair MacIntyre, "Epistemological Crises, Dramatic Narratives and the Philosophy of Science," *Monist*, 60, 1977, pp.453-472. Using Galileo as an example, MacIntyre pointed out that Galileo's theory "for the first time, enables the work of all his predecessors to be evaluated by a common set of standards ... the history of medieval science can at last be cast into a coherent narrative." (p.459f.)

³⁴ Bogdanov, "Engineer Menni", op.cit., p.232.

³⁵ In 1925 Bogdanov collected and published a large number of articles on proletarian culture dating back to 1904 in an anthology, *O proletarskoi kul'ture, 1904-1924 (On Proletarian Culture)* (Leningrad and Moscow, 1925).

³⁶ On this see James C. McClelland, "Utopianism versus Revolutionary Heroism in Bolshevik Policy: The Proletarian Culture Debate", *Slavic Review*, 39, 3, September, 1980.

prevented people appreciating that the organization of production and social relations could be different. Socialism cannot be achieved by "a revolution of property, a change in rulers of society - a matter of class interests and material force of the masses." It requires "a creative revolution of world culture, a change from spontaneous education and struggle of social forms to conscious creation - a matter of a new class logic, new methods of unifying forces, new methods of thinking."³⁷

Apart from property relations and the organization of production, all social relationships based on domination and subordination, whether these be based on sex, race, class, nationality or possession of technical knowledge, are sources of conflict which must be criticised and overcome by the proletariat. As Bogdanov put it: "the struggle for socialism is not by any means to be equated with an exclusive war against capitalism." It involves "the creation of new elements of socialism in the proletariat itself, in its internal relations, and in its conditions of everyday life: the development of a socialist proletarian culture."³⁸ Bogdanov also paid attention to male-female relationships as problematic, as needing to be transformed by the proletariat.³⁹ Consequently, a genuine revolution is not something which could be achieved by one gigantic act of will in which power is seized, but a transformative process involving many levels. Only when the proletariat can oppose the old cultural world with its own political force, its own economic plan and its "new world of culture, with its new, higher methods" will genuine socialism be possible.⁴⁰

Art, literature, philosophy and science were all accorded importance by Bogdanov as ideological labor, their object being a transformation of the way people organize their experience to achieve a common understanding of the world. In opposition to orthodox Marxists Bogdanov argued: "Art ... is a most powerful weapon for the organization of collective forces and, in a class society, of class forces."⁴¹ The ultimate goal of ideological labor is overcoming the divisions between people and the creation of a collective of creative individuals with a common will which can be appreciated as such by each individual member of this collective. This is associated with overcoming the alienation of people from each other and the affirmation by them of their collective power, their common will to create and to control nature for human ends. In the new society, with the overcoming of class and other divisions, the "psychology of disconnectedness" will be replaced by the recognition of the self as "an integral part of the great whole."⁴² This is Bogdanov's answer to Sorel's reinterpretation of Marx to celebrate not the scientific analysis of society, but the provision of a "myth" which gave the working class something to live for, and more importantly, to the challenge of Nietzsche, who diagnosed the nihilism of the age as a consequence of the triumph of slave morality, as the will-to-power turned against itself, a triumph which would be only more complete if socialists were to prevail.⁴³ Bogdanov's was not a socialism of negation, of *ressentiment*, but a socialism which affirmed the human will.

³⁷ Bogdanov, "Ideal i put'," in *Voprosy sotsializma* (Moscow, 1918), p.100f.; cited Sochor, op.cit. p.39.

³⁸ Bogdanov, "Sotsializm v sastoiashchem," *Vpered*, 2, February, 1911, p.68; cited in *ibid.* p.39.

³⁹ On this, see Loren R. Graham, "Bogdanov's Inner Message," in Alexander Bogdanov, *Red Star: The First Bolshevik Utopia*, op.cit. p.244. Alexandra Kollantai was a disciple of Bogdanov.

⁴⁰ Bogdanov, "Programma kul'tury," in *Voprosy sotsializma* (Moscow, 1918), p.73; (cited by Sochor, 1988, p.39).

⁴¹ Cited McClelland, op.cit., p.403 without reference.

⁴² Bogdanov, "Tseli i normy zhinzi," in *Novyi mir*, 3rd ed. (Moscow, 1920)(cited by Sochor, op.cit., p.197).

⁴³ See Sochor, 1988 op.cit.

According to Bogdanov, science would be the most important component of the new culture because it bridges the gap between ideological and technological knowledge. Recent developments in science, themselves manifestations of the change in work and work relations, were seen to be already portents of the new socialist society. In societies with an authoritarian structure, such as ancient or feudal societies, cause is understood to predominate over effect as something strong and active. Regularities in the material world are seen as produced by spirit, by something transcending the world. With the development of capitalist society effect is understood abstractly as following cause out of some sort of natural or logical necessity, independent of human will and experience, reflecting the powerlessness of people before the impersonal imperatives of the market. With the development of more complex technology bringing a closer relationship between labor and the control of production, a new concept of causation has emerged within science. Machine production changes the world by turning the physical, chemical and electrical forces into one another as natural forces are turned into the mechanical forces of production. In essence, machine production is "the systematic transformation of efforts, or, in scientific and exact terms, the transformation of 'energy'".⁴⁴ Bogdanov rejected the "fetishistic" concept of energy as a thing in itself, and also the notion of it being a useful fiction; the first because it represents energy apart from labor activity, the second because it conceives energy only in relation to thought and not in relation to action. The concept of energy arises from the use of labor causality as a substitute, and it should be recognized as such. Energy represents the practical relationship of society to nature, of human activity to that which resists it. The transformation of energy refers to the creation and change wrought by active, human effort on resisting nature; "to see 'energy' in the processes of nature means to look at those processes from the perspective of their possible labor exploitation by man."⁴⁵ Since neither effort nor energy is either created or destroyed in production, but simply takes on different appearances and uses, cause and effect modelled on the transformation of energy must appear as equal, as simply "different phases in a continuous series of changing and changeable phenomena."⁴⁶

This change foreshadows a situation where workers will cease to be mere laborers and will control production. Then, laboring will be recognized as the organization of the series of changing and changeable phenomena, and laborers will appreciate work as such. As manual work becomes increasingly organizational and intellectual, laborers will first unite with the technical intelligentsia, then become engineer-workers, and finally will become scientist-workers. This will be associated with the overcoming of the specialization of society based on capitalist exchange relations. What is required to bring this about, for laborers to become scientists able to appreciate all aspects of production, and simultaneously, what will emerge with the overcoming of specialization based on capitalist exchange relations, is a new science which focuses on the general features of all organization and which thereby systematizes the entire cognitive experience of the past. Bogdanov believed that the greatest contribution he could make to creating a proletarian culture was founding such a science of organization, and devoted most of the rest of his life to this, producing what he regarded as his most important work, *Tektology: The*

⁴⁴ Bogdanov, *PLE*, op.cit. p.268f.(Jensen, op.cit. p.120).

⁴⁵ Ibid. p.271 (cited ibid. p.122).

⁴⁶ Ibid., p.270 (cited ibid. p.121).

Universal Organizational Science (from the Greek word "tekton," meaning "builder" - a term Bogdanov took from Haeckel's morphology).⁴⁷

Bogdanov described *Tektology* in his autobiography as "a general study of the forms and laws of the organization of all elements of nature, practice and thought."⁴⁸ According to him, "we are organizers of nature, of ourselves and of our experience," and he examined "our practice, cognition and artistic creations from this organizational point of view." Moreover Bogdanov believed that our organizational experience could be used as a substitute for understanding the rest of nature, and argued that this provides the basis for a monistic world-view, allowing us to see ourselves as self-organizing parts of a self-organizing nature. It is not only we who organize. Nature itself is the first great organizer, and humans are only one of its organized products. "Inorganic" nature is highly organized. "Matter," Bogdanov argued, "with all of its inertia, is being perceived as the most concentrated complex of energy, that is, precisely activities; its atom is a system of closed motions, the speed of which exceeds all others in nature."⁴⁹ And the simplest of living cells "surpasses in complexity and perfection of its organization all that man can organize."⁵⁰ Bogdanov concluded:

Thus, the experience and ideas of contemporary science lead us to the only integral, the only monistic understanding of the universe. It appears before us as an infinitely unfolding fabric of all types of forms and levels of organization, from the unknown elements of ether to human collectives and star systems. All these forms, in their interlacement and mutual struggle, in their constant changes, create the universal organizational process, infinitely split in its parts, but continuous and unbroken in its whole.⁵¹

The basic focus of *Tektology* is on the necessity to study any phenomenon from the point of view of its organization, since all activities of humans and of the rest of nature are primarily organization and disorganization of elements on hand. The work attempts to systematize the fragmented knowledge of organizational methods so they can be studied and developed systematically to reveal structural relations and laws common to the most heterogeneous phenomena, to reveal the most general characteristics of organization. Aspects of organization form considered are wholeness, self-regulation, transformation and development; equilibrium and disequilibrium; and stability, instability and crises.

7. The Communist Revolution: Bogdanov and the Proletkult Movement

In 1916 Bogdanov had published four major articles analysing the dynamics of the war economies of the belligerent powers, developing a theory of "War Communism", arguing that this was paving the way for the emergence of a system of State Capitalism which would be maintained after the war.⁵² Bogdanov speculated that this new system might not be presided over by the bourgeoisie, but might come under the management of a new class "of economists, engineers, doctors, and lawyers, in short, of the intelligentsia

⁴⁷ A.A. Bogdanov, *Tektologia: Vseobshchaya Organizatsionnaya Nauka* Vol.I, (St. Petersburg, 1912); Vol.II, (Moscow, 1917); Vol.III, (Moscow, 1922). *Essays in Tektology* (op.cit.) is essentially a condensation of this three volume work.

⁴⁸ Haupt and Marie op.cit.p.288.

⁴⁹ Ibid. p.42.

⁵⁰ Bogdanov, *Essays in Tektology*, op.cit. p.5.

⁵¹ Ibid. p.6.

⁵² "Mirovye krizisy, mirnye i voennye," *Letopis'*, 2,4,5,7, 1916. On these articles see John Biggart, "Alexander Bogdanov and the Theory of a 'New Class'", *The Russian Review*, 49, 1990, pp.265-82, p.270f.

itself."⁵³ Extending these analyses to Russia some years later Bogdanov characterized the socioeconomic system which developed in Russia during the Revolution and Civil War as "War Communism of the Laboring Classes". He denied that this was genuine communism, and argued that like the Military State Capitalism which had developed in the war years in the West, this was economically destructive and had to be abandoned. This explained the New Economic Policy implemented from March, 1921, which was largely a return to a market based economy. Bogdanov did not attempt to characterize the New Economic Policy, but did put forward the thesis that the revolution in Russia might yet result in the subjugation of the proletariat by some new social stratum of technical intelligentsia, and he warned that if Gastev's proposals (supported by Lenin) for the scientific organization of labor along Taylorist lines were implemented, this would result in the emergence of a new ruling class of scientific engineers.

Bogdanov was actively engaged in opposing such tendencies. Lunacharskii, Bogdanov's brother-in-law and fellow *Vperedist* had returned to Russia in May 1917, and had rejoined the Bolsheviks.⁵⁴ Strongly influenced by Bogdanov and also committed to the creation of a proletarian culture, Lunacharskii organized the first conference of proletarian cultural-educational organizations (Proletkult) in Petrograd just before the October Revolution. After the revolution Lunacharskii was made Commissar of Enlightenment. His first declaration as Commissar was:

The people themselves, consciously or unconsciously, must evolve their own culture ... The independent action of ... workers', soldiers', and peasants' cultural-education organizations must achieve full autonomy, both in relation to the central government and to the municipal centres.⁵⁵

In February of 1918 Bogdanov organized a conference in Moscow to establish a Moscow Proletkult, and on 25 September 1918 the first All-Russian Conference of proletarian cultural-educational organizations met in Moscow, and Proletkult was established as a laboratory of proletarian ideology and as a mass educational organization. At this conference Bogdanov called for the establishment of a workers' university and a workers' encyclopaedia, and called for the socialization of science, calls which led to the establishment of the Proletarian University (with 400 students) in Moscow in 1919.

Proletkult had a stormy, turbulent, brilliant and short career, promoting the creativity of the working class in literature, theatre, music and science, and providing a haven for those opposed to the authoritarian and capitalistic tendencies in the Soviet government.⁵⁶ While supported by Lunacharskii in his capacity as Commissar of Enlightenment, it was Bogdanov who rose to be Proletkult's leading light, and his science of organization was disseminated to half a million workmen outside the studios. Associated with his work in this movement Bogdanov wrote *Art and the Working Class* (1918), *Socialism and Science* (1918) and *The Elements of Proletarian Culture in the Development of the Working Class* (1920). In these writings and in his debates with other Proletkult members Bogdanov upbraided those who strove to reduce workers to a mass or herd, or those who merely attacked the ideas of the bourgeoisie, and he railed against proletarian art based on "personal hatred, gloating insults, lynch law, even sadistic delight in the theme of pulling out the intestines of the

⁵³ Vseobshchaia Organizatsionnaia Nauka (Tektologgia), vol.2 (Moscow, 1917), p.140 (cited *ibid.* p.271).

⁵⁴ On Bogdanov's response to this see his letter to Lunacharskii (November 19, 1917) in Gloveli, *op.cit.* pp.45-50.

⁵⁵ Quoted by Fitzpatrick, p.89.

⁵⁶ On Proletkult see Mally, *op.cit.*

bourgeoisie." For instance he repudiated the symbols of V. Kirillov's poem, "We" (*My*), "In the name of our Tomorrow, / let us burn Raphael, / destroy museums, / trample on the flowers of art", for being suffused with "the spirit of the soldier not the worker."⁵⁷ The worker should not be motivated by petty malice against the individual representatives of capitalism since such people are the inevitable products of their social environment. What is required is unyielding enmity towards capitalism, and a commitment to the nobler end of creating "a new aristocracy of culture", a culture "combining the work of the head with that of the hands."⁵⁸ To those who were sceptical of the ability of the proletariat to create such a culture, Bogdanov retorted, "And if [proletarian culture] were beyond one's strength, the working class would have nothing to count on, except the transition from one enslavement to another, [that is,] from under the yoke of capitalists to the yoke of engineers and the educated."⁵⁹

Lenin had been alarmed at the influence of Prolekult in 1919, and in 1920 made a determined effort to have it subordinated to the Commissariat of Enlightenment. In response to this, Bogdanov resigned from its leading councils. Lenin continued to oppose the influence of Proletkult and to curtail its activities, and in January, 1922, Prolekult lost its subsidy from the Commissariat of Enlightenment. Subsequently Proletkult withered away and Bogdanov lost the platform to disseminate his ideas to the workers, although he remained a member of the Socialist Academy of Social Science and continued to publish his views in the journal of the Academy and in books.

While Bogdanov refrained from analysing the relationship between Proletkult and the Bolshevik government in class terms, Bogdanov's supporters spelt out the implications of his ideas. The "Collectivists", former members of the Workers' Opposition, inspired by Bogdanov's organizational theory and proclaiming themselves "Marxists of that school whose intellectual leader is Bogdanov", distributed a manifesto in November, 1921 during the Second All-Russian Congress of the Proletkults which condemned Lenin and characterized the October Revolution as the introduction into Russia of a world-wide system of State Capitalism.⁶⁰ They argued that the intelligentsia were emerging as a new, independent class. Lenin on reading this manifesto labelled it a "Platform of Bogdanovites".⁶¹ The Collectivists seemed to vanish, but appear to have merged their activities with a kindred group, *Rabochaya Pravda* (Workers' Truth), who also drew their inspiration from Bogdanov. In its journal this group characterized the post-revolutionary order as a continuation of the "military-state capitalism" of pre-war years, and argued that the technical intelligentsia had united with the more competent members of the old bourgeoisie to form a new bourgeoisie of responsible functionaries, plant directors, managers of trusts and chairmen of the Soviet committees antagonistic to the interests of the working class. The Communist Party had degenerated, turning into a ruling party of the organizers and managers of the governmental apparatus and economic life and opportunistic elements from the upper strata of the proletariat.

The activities of this group had unfortunate consequences for Bogdanov. In 1923 *Rabochaya Pravda* organized strikes in industry. Suspected members

⁵⁷ Bogdanov, *O proletarskoi kul'ture* op.cit., p.163 and 173; cited Sochor, *Revolution and Culture*, p.95.

⁵⁸ Bogdanov, *Elemny proletarskoi kul'tury v razivitiu rabocheha klassa* (Moscow, 1920). p.40 (cited in Sochor, 1988, op.cit., p.132).

⁵⁹ A.A. Bogdanov, "Ideal i put'," in A.A. Bogdanov, *Voprosy sotsializma* (Moscow, 1918) (cited in Sochor, 1988, op.cit. p.186).

⁶⁰ See *ibid.* p.277.

⁶¹ *ibid.* p.179.

were arrested by the OGPU (the forerunner of the KGB), and on 1 October Bogdanov was also arrested. He was released a month later after having convinced Felix Dzerzhinskii, the head of OGPU, that while he shared some of the positions of *Rabochaya Pravda*, he had no formal association with it.⁶² Following this incident Bogdanov increasingly withdrew from political activity and devoted himself to scientific work. When Bogdanov died exchanging his blood with a seriously ill patient, many saw this as suicide in response to his pessimism about the future of Russia in the face of the increasing authoritarianism of Stalin's government.

8. Bogdanov's Importance for the Environmental Movement

As I have already pointed out, Bogdanov addressed the issue of the environmental constraints on economic development in his utopian novel *Red Star*. Describing the situation confronting Martians who were conceived to be far in advance of people on Earth both in terms of their social development and in terms of their problems, Bogdanov, it is argued, showed great prescience to anticipate the problems we would face in the future even if communism were achieved.

Red Star is the story of Leonid, a communist revolutionary who after the attempted revolution of 1905 is taken to Mars. There he is at first impressed by the harmony and fullness of life brought about by the communist revolution. However it soon appears that this harmony is superficial, that Mars is suffering from the effects of its successes. Industries have become so dangerously polluting that many have to be kept underground. The population is growing so rapidly that food shortages and even famines are predicted within several decades. Natural resources, including radioactive matter which is the main source of energy, are rapidly being exhausted. A Martian describes the frequent disastrous side-effects of trying to overcome these shortages.⁶³ For instance deforestation resulting from an effort to overcome an energy shortage had worsened the climate on Mars for decades. Most importantly, socialist Mars has created a Colonial Group in its government and is preparing to create colonies on Earth or Venus, or both, to replenish Mars' resources. It transpires that the Martians are considering eradicating human life [~~by painless death rays~~] to enable them to exploit the Earth's resources. In the arguments between the Martians over this strategy Bogdanov anticipated the arguments which have now become prominent between the "shallow ecologists", who argue that people in economically advanced societies are the ultimate end and should be prepared to destroy other life forms in the cause of human progress, and the "deep ecologists" who argue that all life is significant. One Martian, Sterni, takes the position that Earthlings are so hopelessly malformed by their evolutionary past that even the Earth's socialist minority would never be able to work together amicably with their fellow socialists on Mars. To prevent a long guerrilla war of resistance, Sterni argues that the Earthlings should be wiped out in advance, painlessly, with death rays so that the riches of Earth can be used to build a more humane socialism on Mars. He argues: "There is but one life in the Universe, and it will be enriched rather than impoverished if it is *our* socialism rather than the distant, semibarbaric Earthly variant that is allowed to develop." Netti replies: "'There is but one Life in the Universe,' says Sterni. And yet what does he propose to us? That we exterminate an entire individual type of life, a type which we can never resurrect or replace.... [T]he

⁶² Biggart, op.cit. p.280.

⁶³ Bogdanov, *Red Star*, op.cit. p.79.

Earthlings are not the same as we. They and their civilization are not simply lower and weaker than ours - they are *different*. If we eliminate them we will not replace them in the process of universal evolution but will merely fill in mechanically the vacuum we have created in the world of life forms."⁶⁴

However what is most important about Bogdanov is that this prescience, this celebration of the diversity of life forms, was based on a world-view which was elaborated coherently and effectively defended. It follows from the place Bogdanov accorded the concept of energy in this world-view that it is necessary to acknowledge limitations to economic growth, and it follows from his commitment to monism and the centrality of the notion of organization that the interdependencies between organisms in nature and the constraints these impose on economic life should be recognized, and that non-European forms of human life and non-human life should be appreciated as unique organizational forms along with those of the most socially and technologically advanced humans. Even if Bogdanov had not drawn out these implications, the importance of his world-view for environmentalists would still have to be recognized. For this reason it is not significant that Bogdanov frequently celebrated the ultimate goal of labor as the total domination of nature, since this project is inconsistent with his world-view and merely shows that he had not yet fully extricated himself from the dualism of bourgeois society, the overcoming of which he was both predicting and helping to bring about, in both practice and theory.⁶⁵

What is germane to us is that Bogdanov and those influenced by him, most importantly, Lunacharskii, had created an intellectual milieu within which those concerned about the environment could flourish as never before. After the demise of Proletkult the Commissariat of Enlightenment, headed by Lunacharskii, continued to develop an education system devoted to providing equal access for all, to developing the child's individuality and creativity. It broadened the curriculum to include the study of the surrounding environment, both physical and aesthetic education, and training in elementary labor and craft skills. And it continued to support creative work in science and the arts with a minimum of outside interference and pressure as the condition for creating a new culture. Lunacharskii persevered in trying to cultivate a population of people able to control their own destinies, to creating a new form of society. This was a milieu in which art, music, literature, theatre, film-making, literary and cultural theory, economics, legal theory, sociology, psychology and the natural sciences, all flowered. It was a milieu in which Soviet ecologists came to lead the world in their research and to spearhead a radical and powerful conservation movement resolved to harmonizing the economic life of society with the energetic processes and spontaneous organization of nature.⁶⁶

While Bogdanov's tektology set the agenda, his influence was indirect. A more direct inspiration for the ecologists was Vladimir Ivanovich Vernadskii. However Vernadskii's concept of the biosphere, his concern with the interdependence of all processes in nature and his embracing of energetics, accorded with Bogdanov's cosmology, and while he was unable to pursue his career in the West, he was given a new professorial position within the Russian Academy of Science. The most original of the ecologists influenced by

⁶⁴ Bogdanov, *Red Star*, p.116f.

⁶⁵ Mark Adams' claim that Bogdanov should not be considered an environmentalist because he did not generalize his analysis of Mars to Earth, is irrelevant. ("Red Star' Another Look at Aleksandr Bogdanov", *Slavic Review*, 48, 1, 1989, pp.1-15).

⁶⁶ Weiner 1988, op.cit.

Vernadskii was Vladimir Vladimirovich Stanchinskii, who later became the main spokesperson for the conservation movement.⁶⁷ Like Vernadskii, Stanchinskii's ideas accorded with Bogdanov's tektology, and his career was made possible by the new Bolshevik education system. Stanchinskii was the first person to trace the energy flows through ecosystems and to identify and give a mathematical formula for the energy transfers between "trophic levels". Biological communities were seen as having a distinctive structure characterized by interdependence among their biotic components and being in a state of relative equilibrium, or "proportionality." On the basis of this ecological theory Stanchinskii led the ecologists in arguing that if civilization continues to disrupt the balance of natural communities it will eventually destroy itself, and he was supported in this claim by Lunacharskii.⁶⁸ The ecologists then called for a central role for ecology in formulating the Five Year Plans.

The creation of the milieu within which these ideas developed was part of the *Vperedist* project of breaking down class barriers, breaking down the division between intellectual and manual labor, of uniting scientists and other creative thinkers with the working class already begun under capitalism. According to Bogdanov, it was the movement of society in this direction which would make energy the primary concept within the sciences, and which would then bring the concept of organization, both in social life and in nature, into central focus. The ideas developed by Vernadskii and the ecologists confirmed Bogdanov's theory of sociomorphs and his vision of the way science would develop in a classless society free from domination by exchange relations. But also confirming Bogdanov's theory, and vindicating his concern about the authoritarian tendencies of the Bolshevik government, was the fate of the ecologists and their environmental concerns as the quest for a classless society faltered. The failure of Bogdanov's Proletkult paved the way for the crystallization and consolidation of the new class of technical intelligentsia, many of whom had risen from the working class, who set themselves above the mass of the workers and the peasantry.⁶⁹ The rise of Stalin can be understood as part of the development of this new class. The rise of this class was associated first with efforts to impose a party line on scientific work, and culminated in the reduction of science to nothing but an instrument of economic (and military) development. This Stalinization of science engendered a new dualism between consciousness as the center of action, identified with the Communist Party, and the rest of the world which was conceived to be material, "the entire world existing independent of us."⁷⁰ With this dualism the new ruling class was blinded to the dependence of humanity as one organizational form in nature on other organizational forms, which corresponded to the blindness of this class to the complexities and significance of the organizational forms of the peasantry and minority groups within the

⁶⁷ On these ecologists see Weiner, 1988, op.cit.; Douglas Weiner, "The Historical Origins of Soviet Environmentalism," *Environmental Review*, 6, 2, 1982 and "Community Ecology in Stalin's Russia: 'Socialist' and 'Bourgeois' Science," *Isis*, 75, 1984.

⁶⁸ Weiner, 1988, op.cit. p.230.

⁶⁹ This development has been described by Kendall Bailes, *Technology and Society Under Lenin and Stalin: Origins of the Soviet Technical Intelligentsia, 1917-1941* (Princeton: Princeton University Press, 1978). On Lunacharskii's opposition to these developments see p.169 and passim. See also Sheila Fitzpatrick, *Education and Social Mobility in the Soviet Union, 1921-34* (Cambridge: Cambridge University Press, 1979).

⁷⁰ M.B. Mitin ed. *Dialektichesky materializm* (Moskva, 1933), p.107; cited by N. Lobkowicz, "Materialism and Matter in Marxism-Leninism" in *The Concept of Matter in Modern Philosophy*, ed. Ernan McMullin (Notre Dame: University of Notre Dame Press, 1978), pp.154-188, p.177. In this article Lobkowicz examines the dualism of Soviet dialectical materialism in some depth (pp.176-188).

Soviet Union. With the emergence of this new class and its dualistic world-view ecologists were attacked "for their 'traitorous' opposition to the heroic projects of the Five-Year Plans"⁷¹ and marginalized, many of them, including Stanchinskii, losing their academic positions. Subsequently the environmental movement contracted to a small holding operation.

What these different and opposing developments showed with dramatic clarity was that it is through the dissolution of the class divisions of capitalist society, through the rise of people who neither dominate nor are dominated, that it becomes possible to thoroughly develop and sustain the cognitive forms necessary for societies to properly comprehend that humans themselves are organizational forms within nature, dependent on the autonomous dynamics of other organizational forms, and to face up to the limits to the sustainable exploitation of these forms.

9. Conclusion

Bogdanov's significance lies in identifying the ultimate cause of the "ways of organizing experience" which have impaired our relationship to nature in the class divisions of society, in the division between intellectual and manual labor and in the division between those who organize and those who are organized. He elaborated a philosophy of living experience and a general theory of organization which together reveal the need for and provide the foundation for, a new culture, including a new science. He accepted that the full development of his own ideas would only be possible as part of the creation of a classless society; but he also pointed out that the development of these ideas, the creation of a proletarian culture, is a necessary part of creating a classless society. After the revolution Bogdanov and those influenced by him, strove mightily to provide the proletariat and others with the conditions for creating this new culture in order to make a classless society in the Soviet Union possible. This facilitated, among other cultural achievements, the rise of the ecologists elaborating radically new ways of organizing experience which accorded with Bogdanov's tektology. Bogdanov also identified and analysed the tendencies at work in the Communist Party, in the organization of the economy and in Russian culture which could re-establish class divisions. In so doing he identified the developments which would undermine the new, environmentally conscious ways of organizing experience which had been fostered.

Bogdanov's achievements extend beyond mere historical interest. His project of developing a concept of experience based on praxis, and to showing that all abstract thinking develops through such experience, has been furthered by Maurice Merleau-Ponty and his followers. But while these thinkers have defended and developed this project, there are insights in Bogdanov's work which have not been duplicated. While systems theorists such as Ludwig von Bertalanffy, physicists such as David Bohm and chemists such as Ilya Prigogine have furthered our understanding of energy and the nature of organization (or order), there are dimensions to Bogdanov's tektology which illuminate features of the world ignored by later thinkers. While the tradition of cultural ecology which was partly inspired by Bogdanov, from Leslie White's anthropology through Robert Newbold Adams' extension of this to study the energetics of modern industrial societies, to Stephen Bunker's brilliant reformulation of Marxist dependency theories to take into account energy flows through the world system, have vastly deepened our understanding of the relationship between cultural processes, social labor and the natural

⁷¹ Weiner, 1984, op.cit. p.692.

environment, Bogdanov's reformulation of Marx's social theories can still provide guidance for research in this area. Bogdanov's sociology of culture could provide insights into, and a basis for the critique of, the present Stalinization of science and trivialization of art and literature in Anglophone nations. But what is more important than all the particular aspects of Bogdanov's work is that all these different areas of research are given due weight and brought into relationship with each other, and related to the struggle to overcome the alienation of people and the oppression of existing societies, and to creating a new socio-economic order, a collective of creative individuals with a common will controlling their own destiny. Through Bogdanov's work, achievements and influence, we now know why it is necessary to create a classless society to fully comprehend and to live in accordance with the dynamics of nature, and that creating this society will involve a long struggle to develop new forms of social relationships, new forms of art and literature, and a new science. It will be necessary to create a new culture.