Darwin's Malthusian Metaphor and Russian Evolutionary Thought, 1859-1917
Author(s): Daniel P. Todes
Published by: The University of Chicago Press on behalf of The History of Science Society
Stable URL: http://www.jstor.org/stable/231917

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at http://www.jstor.org/page/info/about/policies/terms.jsp

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.
Darwin’s Malthusian Metaphor and Russian Evolutionary Thought, 1859–1917

By Daniel P. Todes*

"N OTHING IS EASIER than to admit in words the truth of the universal struggle for life," wrote Charles Darwin in The Origin of Species, "or more difficult than constantly to bear this conclusion in mind."

Darwin frequently employed the imagery of direct combat in his work, which is permeated by phrases such as "the great battle for life" and "the war of nature." Yet he considered indirect competition within a single species to be the central factor in the divergence of characters and the evolution of new forms. Introducing his concept of a "struggle for existence," Darwin explained:

I use this term in a large and metaphorical sense including dependence of one being on another, and including (which is more important) not only the life of the individual, but success in leaving progeny. Two canine animals, in a time of dearth, may be truly said to struggle with each other which shall get food and live. But a plant on the edge of a desert is said to struggle for life against the drought, though more properly it should be said to be dependent on the moisture. A plant which annually produces a thousand seeds, of which only one of an average comes to maturity, may be more truly said to struggle with the plants of the same and other kinds which already clothe the ground. The missletoe is dependent on the apple and a few other trees, but can only in a far-fetched sense be said to struggle with these trees, for if too many of these parasites grow on the same tree, it will languish and die. But several seedling missletoes, growing close together on the same branch, may more truly be said to struggle with each other. As the missletoe is disseminated by birds, its existence depends on birds; and it may metaphorically be said to struggle with other fruit-bearing plants, in order to tempt birds to devour and thus disseminate its seeds rather than those of other plants. In these several senses, which pass into each other, I use for convenience sake the general term of struggle for existence.2

The "struggle for existence," then, was a metaphor for what Darwin realized were complex relations among organisms and between the organism and abiotic conditions.

* Institute of the History of Medicine, Johns Hopkins University, Baltimore, Maryland 21205.

An earlier version of this article was presented to the History of Science Society on 24 October 1986. I gratefully acknowledge the substantial benefit of a continual dialogue about this subject with Mark B. Adams of the University of Pennsylvania. My thanks also to Dolores Sawicki for assistance and to the Hoover Institution for use of its archives.

2 Ibid., pp. 62–63.

ISIS, 1987, 78 : 537–551 537
This struggle for existence followed necessarily from the rate at which organisms reproduced: “As more individuals are produced than can possibly survive,” Darwin wrote, “there must in every case be a struggle for existence, either one individual with another of the same species, or with the individuals of distinct species, or with the physical conditions of life. It is the doctrine of Malthus applied with manifold force to the whole animal and vegetable kingdoms.”3

Several years later Darwin defended his use of metaphor, explaining: “Every one knows what is meant and is implied by such metaphorical expressions, and they are almost necessary for brevity.”4

However necessary they may be, metaphorical expressions are culturally specific. They draw upon shared perceptions of one subject in order to illuminate another. For Darwin and other leading British evolutionists the term “struggle for existence” appealed to common sense, and its Malthusian associations posed no problem.

For Russian intellectuals, however, this metaphor was at best imprecise and confusing. At worst, and this was much more common, it was fallacious and offensive. They reacted negatively to what they perceived as a transparent introduction of Malthusianism—or, for some, simply the British enthusiasm for competition—into evolutionary theory.

These thinkers generally admired Darwin, and very few thought that this flaw justified total rejection of his theory. The common reaction was to break down the so-called struggle for existence into its component parts, to explore their relationship and relative importance in nature, and to conclude that Darwin had greatly exaggerated the role of the two parts most closely identified with Thomas Malthus: that is, of overpopulation as the generator of conflict and of intra-specific competition as its result. This common reaction—the intensive exploration of Darwin’s metaphor and its criticism from an anti-Malthusian or non-Malthusian perspective—constituted a “national style” in the Russian reaction to Darwin.

I distinguish “anti-Malthusian” from “non-Malthusian” to underline two sources of this Russian response. “Anti-Malthusianism,” the aversion of Russians across the political spectrum to Malthus’s doctrine, had its roots in the class structure and political traditions of tsarist Russia. “Non-Malthusianism,” the failure of Malthusian perceptions to resonate with Russians’ experience with nature, reflected the physicogeographical realities of the Russian setting.

In this article I first sketch the reaction of Russian intellectuals to Malthus, then illustrate their criticism of Darwin’s concept of the struggle for existence, and, finally, comment on the origins of Petr Kropotkin’s theory of mutual aid.

THE RUSSIAN REACTION TO MALTHUS

The argument in Malthus’s Essay on Population (1798) was foreign to Russians’ experience and inimical to their values.

3 Ibid., p. 63.
It was foreign to their experience because, quite simply, Russia’s huge land mass dwarfed its sparse population. For a Russian to see an inexorably increasing population inevitably straining potential supplies of food and space required quite a leap of imagination.

Malthus himself was incapable of it. When visiting Russia in 1799 he remarked upon its “deficiency of population,” marveled at its great agricultural potential, and applauded the state’s attempts to spur population growth. The main obstacle to such efforts, he concluded, was Russia’s feudal social system, which demonstrated that poor governance could lead to suffering and want even amidst great natural bounty. These observations hardly recall the Malthus that British intellectuals debated so vigorously, and that Darwin and Alfred Russel Wallace read to such great advantage.

Malthus’s argument was distant from Russian reality, and his Essay was not even reviewed in a Russian journal until 1818, twenty years after its publication, and was not translated for another half century, by which time Darwin had drawn attention to it. Malthus did have one disciple among Russian economists, A. I. Butovskii, who lauded him in the 1840s as “the Galileo of political economy.” But even Butovskii conceded that the Malthusian law was of course inapplicable to “our broad and expansive Russia.”

As a description of Russian reality, then, Malthus’s Essay offered little of interest. As a political document, however, beginning in the 1840s, it was sharply criticized. Western Europe was a yardstick by which Russian intellectuals measured their own aspirations, and they discussed Malthus while evaluating British life and thought. Radicals agreed with conservatives that Malthus’s law was but an arithmetical illusion reflective of an inhumane and soulless individualism. Radicals, who hoped to build a socialist society, saw Malthusianism as a reactionary current in bourgeois political economy. Conservatives, who hoped to preserve the communal virtues of tsarist Russia, saw it as an expression of the “British national type.”

In the mid 1840s, for example, the socialist V. A. Miliutin criticized Malthus as “an economist of the privileged classes,” while the monarchist Prince V. F. Odoevskii linked him to “the coarse materialism of Adam Smith.” In his popular fictional work Russian Nights Odoevskii portrayed a Malthusian economist driven to suicide by his pessimistic mathematical fantasies and explained to readers that “the country that wallowed in the moral bookkeeping of the past

---


6 Malthus’s Essay was translated into German in 1807 and into French in 1809. Extensive excerpts appeared in a Spanish journal in 1808, and the complete text was translated in 1845.

7 For Butovskii’s favorable estimation of Malthus’s theory see A. I. Butovskii, Opyt o narodnom bogatstve, ili o nachalakh politicheskoi ekonomii (St. Petersburg, 1847), pp. 350–351, 367, 370, 376. For his admission that this theory was inapplicable to Russia see Butovskii, “Obshchinnoe vladenie i sobstvennost’,” Russkii Vestnik, 1858, 16:5–59, on p. 34. All translations unless otherwise indicated are my own.

8 The point here is not to explore the nuances of individuals’ political views but to display the great political diversity of those who rejected Malthusian principles. I use “conservative” to encompass monarchists, Pan-Slavists, and others who sought to preserve the tsarist socioeconomic system essentially intact; and “radical” to include nihilists, anarchists, left populists, Marxists, and others who sought its overthrow and replacement with a socialist system. “Liberals” held a wide range of centrist views, ranging from constitutional monarchy to evolutionary socialism. They did not advocate laissez-faire economic policies, for which there was no significant constituency in Russia.
century was destined to create a man who focused in himself all the crimes, all the fallacies of his epoch, and squeezed strict and mathematically formulated laws of society out of them.”

This critical reaction intensified in the late 1850s and 1860s, a period of great social reform and vigorous debate about Russia’s future. In his “Essay on the History of Labor” (1862) the radical theorist D. I. Pisarev derided the “Malthusian attitude toward nature,” with its comparison of the earth and its productive forces to a “chest full of money.” The radical columnist N. V. Sokolov added that “for both the Jesuits and the Malthusian school of economists the end justifies the means; the Jesuits lie and deceive in the name of the Catholic Church, and the economists do so in the name of capital.” Some conservative intellectuals argued that Malthus’s law was applicable to capitalist societies and that Russia’s feudal institutions should be maintained as an obstacle to them; and some liberals feared that overpopulation might eventually become a problem in the absence of industrial growth. Even these few thinkers, however, denied the inexorability of Malthus’s law and forcefully disassociated themselves from Malthusian fatalism and social prescriptions.

A. I. Herzen summarized a broad consensus when he contrasted Malthus’s values with those of the cherished peasant commune. The commune, he wrote, embodied an economic principle that was “the perfect antithesis of Malthus’s celebrated proposition: it allows everyone without exception to take his place at the table.”

By tying his concept of the struggle for existence to Malthus, then, Darwin almost assured the skepticism of his Russian audience.

**DARWIN AS MALTHUSIAN**

Darwin’s theory was first communicated to the Russians in 1860, and the first Russian translation of the *Origin* appeared in 1864. It sold out quickly, and other editions soon followed. Darwin’s other works were rapidly translated and widely reviewed. For the great majority of Russian intellectuals he became a highly prestigious figure—the embodiment of modern natural science, the author of a powerful argument for evolutionism, and the discoverer of an important factor in evolution, natural selection. No less universal, however, was the perception that Darwin’s Malthusianism constituted an important weakness in his theory. Consider a few illustrations.


The famous radical essayist N. G. Chernyshevskii was both an evolutionist and an influential critic of Malthus before 1859. He observed in 1873 that

the vileness of Malthusianism has passed into Darwin’s doctrine. . . . Poor Darwin reads Malthus, or some Malthusian pamphlet, and, struck with the brilliant idea of the “beneficial consequences” of hunger and illness, discovers his America: organisms are improved by the struggle for life. . . . In what does the essence of Darwin’s error and that of his followers consist? A specialized science, political economy, has acquired such great stature (through Ricardo and others, but not through Malthus) that it seems capable of providing mathematical truths. Darwin noticed this. And made use of what he understood. . . . And the result was the same as if Adam Smith had taken it upon himself to write a course in zoology.13

Many other radical theorists, including P. L. Lavrov, N. K. Mikhailovskii, N. D. Nozhin, and P. N. Tkachev, also recognized the relationship of British political economy in general, and Malthus in particular, to Darwin’s theory.14

Conservative intellectuals also identified and rejected Darwin’s Malthusianism. N. Ia. Danilevskii was an expert on fisheries and population dynamics, a fierce defender of Russia’s distinctively Slavic destiny, and the author of a massive two-volume critique of Darwinism. For him, Darwin’s debt to Malthus illustrated the inseparability of science from subjective cultural values. The English “national type,” he explained, “accepts [struggle] with all its consequences, demands it as his right, tolerates no limits upon it.” He struggles from his days as a schoolchild: running, swimming, boating—all were competitive sports for him. “He boxes one on one, not in a group as we Russians like to spar,” founds debating societies for the “struggle of opinions,” and even establishes mountain-climbing clubs, not for scholarly purposes, “but solely to allow oneself the satisfaction of overcoming difficulties and dangers . . . in competition with others.”15

Darwinism was clearly “a purely English doctrine,” expressing the English preoccupation with practicality and competition: “On usefulness and utilitarianism is founded Benthamite ethics, and essentially Spencer’s also; on the war of all against all, now termed the struggle for existence—Hobbes’s theory of politics; on competition—the economic theory of Adam Smith. . . . Malthus applied


the very same principle to the problem of population. . . . Darwin extended both Malthus’s partial theory and the general theory of the political economists to the organic world."\textsuperscript{16}

This was also obvious to the great novelist Lev Tolstoi. Excoriating Malthus as a “malicious mediocrity,” he praised Chernyshevkii and Danilevskii for exposing Darwin’s debt to him. Tolstoi developed this theme in Anna Karenina and returned to it repeatedly, perhaps most dramatically in a final letter to his children, dictated from his deathbed in 1910, that warned of dire consequences should they accept Darwin’s struggle for existence as a moral guide.\textsuperscript{17}

Such examples could be multiplied almost without end, but one more will suffice. In 1868 P. A. Bibikov, an unsuccessful liberal journalist, published the first Russian edition of Malthus’s Essay. In his introductory essay he observed that although Malthus was a discredited reactionary, his law of population contained a kernel of truth. This could be discerned if one closely examined the work of “its most powerful defender and sharpest investigator”—Charles Darwin.\textsuperscript{18} Departing from Darwin’s description of the struggle for existence, Bibikov discussed its metaphorical character and examined the fluid relationship and relative importance of its different aspects.

More important than Bibikov’s conclusions is the fact that this widely reviewed volume stimulated discussions of Malthus while Russians were also evaluating Darwin, and that it both reflected and reinforced the perception that to think through Darwin’s theory one must analyze carefully its disturbing and fallacious Malthusian aspects.

Russian scientists often did just that.

\textbf{EXAMINING DARWIN’S METAPHOR}

The critical reaction to Darwin’s metaphor among Russian biologists from the 1860s until World War I transcended disciplinary, institutional, and ideological boundaries. Field zoologists such as K. F. Kessler and M. N. Bogdanov, botanical geographers such as A. N. Beketov and S. I. Korzhinskii, and experimentalists such as I. I. Mechnikov and N. F. Levakovskii all addressed this troublesome expression. In this respect there was unity among radicals such as N. D. Nozhin, liberals such as Beketov, and conservatives such as Korzhinskii.

A first common perception was that the metaphor “struggle for existence” was confusing and in need of clarification. One result was a profusion of schematic classifications, beginning with those proposed by the plant physiologist K. A. Timiriazev in 1865, the zoologist G. Seidlitz in 1871, Beketov in 1873, and Mechnikov in 1876.\textsuperscript{19} These scientists “unpacked” Darwin’s metaphor in order better


\textsuperscript{19} K. A. Timiriazev, “Kratkiy ocherk teorii Darvina” (1865), in \textit{Sochinenia}, (Moscow: Sel’khozigiz, 1939–1940), Vol. VII; G. Seidlitz, \textit{Die darwinische Theorie} (Dorpat, 1871); A. N. Beketov, “O bor’be za sushchestvovanie v organicheskom mire,” \textit{Vest. Evr.}, 1873, 10:558–593; and I. I. Mechnikov,
to understand and explain it and to analyze the relationship and relative weight of its different components. They were especially careful to make three sets of distinctions: between indirect competition and direct struggle (after all, it was often noted, humans do not "compete" with tapeworms; they "struggle" against them); between intraspecific and interspecific relations; and between an organism’s relations with other life forms and those with the physical environment.

Naturalists were enjoined to keep such distinctions constantly in mind when investigating the struggle for existence in nature. Only in this manner, as one botanist put it, could science go beyond “mere words” and understand the physical processes at work in the distribution and evolution of organisms.20

Experimentalists took up this same task. In 1869, for example, the Kazan Society of Naturalists approved N. F. Levakovskii’s proposal to analyze the struggle for existence by experimenting with various wild plants. “It is easy to see the extraordinary complexity of the question of the so-called struggle for existence,” Levakovskii observed, “and an attempt to discover the several causes facilitating the supplanting of some plants by others is possible and not at all lacking in interest.”21 By varying the physical conditions to which plants were subject and determining the proportion of plants that perished in the different moments of the struggle for existence, Levakovskii hoped better to understand temporal changes in regional flora.

A second common perception was that Darwin’s emphasis upon overpopulation and intraspecific competition reflected a false, Malthusian, and socially insidious image of nature.

Reviewing the Origin in 1863, eighteen-year-old Ilya Mechnikov commented that its chief weakness was the author’s “generalization of the Malthusian law.”22 In the 1870s Mechnikov analyzed several sections of Darwin’s work to demonstrate the paradoxes and self-contradictions that had resulted. For instance, Darwin had explained the relative lack of new species among freshwater forms and lower organisms, such as Amphioxus, by their geographical isolation from potential competitors. Mechnikov commented that “here Malthus’s law, which constitutes such an important foundation of Darwinism, is forgotten. . . . From a truly Darwinist point of view the competitors are largely individuals of one and the same species, Amphioxus itself. If it lives in isolation it should multiply without hindrance in a geometrical progression, and this circumstance should in itself lead to variations.”23 Russian naturalists often observed that Darwin had simply

"Ocherk voprosa o proiskhozhdenii vidov" (1876), in Akademicheskoе sobranie sochineniе, Vol. IV (Moscow: Akademiia Nauk, 1950).


21 N. F. Levakovskii, “K voprosu o vytesnenii odnih rasteniі drugimi, I: Otnoshenie semian’ rasteniі k vlage,” Trudy Obschestva Estestvoispytatelei pri Imperatorskom Kazanskom Universi-
tete, 1873, 1:35–52, on p. 37.

22 I. I. Mechnikov, “Neskol’ko slov o sovremennoi teorii proiskhozhdeniiia vidov” (1863), in Akademicheskoе sobranie sochineniе (cit. n. 19), Vol. IV, p. 20. The authorities suppressed the journal for which this review was intended; it was first published in 1950.

23 Mechnikov, “Ocherk voprosa proiskhozhdeniiia vidov” (cit. n. 19), p. 254. Darwin’s comment about geographical isolation related to his argument that large areas were most conducive to the formation of new species by natural selection. This was so because in such areas many different species competed, life conditions were complex, and the stock of variations was relatively large; see Darwin, Origin of Species, pp. 105–108 (1st ed.). Darwin later extended this argument explicitly to Amphioxus: such “lowly organized forms appear to have been preserved to the present day, from
assumed the truth of Malthus’s propositions and had failed to provide the same rich evidence for them as he had for other arguments in his book.

A. N. Beketov, Russia’s most influential botanist and chair of the Department of Botany at St. Petersburg University for twenty years, wrote the following in his notebooks on “Morality and Natural Science”: “Malthus’s stupidity has yielded dangerous fruits. Malthus concludes that widespread hunger, deadly epidemics, and destructive wars will save humanity from perishing, putting this off until distant times. The poor, according to Malthus’s counsel, should not even reproduce, or should do so with extreme caution. All these sordid principles, unhappily, gain further support by [Darwin’s] incorrect framing of the question of the struggle for existence.”24 For Beketov, Darwin’s Malthusian error lay in two unsupported assertions: that conflict was generated by population pressures and that it was frequently resolved by intraspecific competition. Neither Malthusian factor, Beketov insisted, was more than an “occasional phenomenon” in nature. It was obvious that more plants and animals were born than remained alive, “but the essence of the question lies elsewhere. It is necessary [for Darwinists] to prove that these deaths are caused specifically by [intraspecific] competition.”25

Beketov developed this argument in popular essays, textbooks, and botanical studies. It defined his position, and that of his students, in the stormy debates among plant geographers concerning the reasons for the treelessness of the Russian steppes. In his autobiography he proudly summarized the chief result of his theoretical efforts as follows: “Malthusianism loses its significance.”26

The ideological element in Russian arguments was often explicit. In 1896, for example, the conservative morphologist A. F. Brandt urged zoologists “to demonstrate that the significance of the struggle for existence [among organisms] . . . is exaggerated,” and so to combat pseudoscientific rationales for “this struggle for existence, this war of all against all, the philosophical system of Friedrich Nietzsche and the right of the fist in human society.”27

A third common, though less universal, proposition was that the central aspect of the struggle for existence was the organism’s struggle with abiotic conditions. As the leading physiologist and psychiatrist V. M. Bekhterev put it: “It should be obvious to anyone that what is universal is not the struggle for existence among individuals of the same species, or of different species, but rather struggle for the right of life generally, for the acquisition of the necessary conditions of existence from surrounding nature.”28 As we shall see shortly, this perception provided the pivot point for mutual aid theorists.

inhabiting confined or peculiar stations, where they have been subjected to less severe competition, and where their scanty numbers have retarded the chance of favourable variations rising”: Darwin, Origin of Species (1876) (cit. n. 4), p. 99.


These reactions defined a common direction of inquiry. Yet individual scientists— influenced by their own biological material, disciplinary training, institutional setting, and ideological orientation— took different paths. Mechnikov developed a non-Malthusian reformulation of the struggle for existence that proved critical to his phagocytic theory of inflammation. Beketov devalued natural selection and reaffirmed his original view that evolution resulted chiefly from the direct action of the environment upon organisms. Korzhinskii conceived his theory of heterogenesis, published in 1899. Comparing his mutation theory with Darwin’s hypothesis, Korzhinskii emphasized one advantage of the former: its denial of any creative evolutionary role to the struggle for existence and natural selection.29

THE THEORY OF MUTUAL AID

One common path led many Russians to the so-called theory of mutual aid.

Like Darwin, these naturalists called attention to cooperation in nature. Yet they went far beyond Darwin in their acceptance of four basic tenets: the central aspect of the struggle for existence is the organism’s struggle with abiotic conditions; organisms join forces to wage this struggle more effectively, and such mutual aid is favored by natural selection; since cooperation, not competition, dominates intraspecific relations, Darwin’s Malthusian characterization of those relations is false; and cooperation so vitiates intraspecific competition that the latter cannot be the chief cause of the divergence of characters and the origin of new species.

This view was often voiced in the 1860s and 1870s by both scientists and lay intellectuals as an obvious objection to Darwin’s theory.30 It was first systematized by K. F. Kessler, the politically moderate ichthyologist who was rector of St. Petersburg University and chair of its Department of Zoology.

Speaking before the St. Petersburg Society of Naturalists in 1879, Kessler observed that “the cruel, so-called law of the struggle for existence” was often invoked by Darwinists to resolve social and moral issues. Yet Darwin himself had described several different aspects of this struggle, and it remained for naturalists to explore their relative significance and interaction. Kessler agreed that overpopulation sometimes generated intraspecific competition, and that conflict within a species “is often the cruelest, most merciless of all.” But Darwin, and especially “Darwinists,” had exaggerated its place in nature.31

The need to find food, Kessler explained, stimulated struggle among organisms. But the need to defend themselves and reproduce led to cooperation. While studying the geographical distribution of fish Kessler had observed that spawning

---
30 E.g., the radical embryologist N. D. Nozhin observed that Darwin’s theory “is true only in the sense that Malthus’s theory is also true.” Bourgeois ideology had blinded both to the fact that intraspecific competition was not a normal, healthy, physiological process resulting in progress, but merely an abnormal “source of pathological phenomena”: Nozhin, “Nasha nauka” (cit. n. 14).
fish that traversed long and arduous migratory paths formed larger schools than those with less difficult journeys. Within such groups “separate individuals cease to be concerned only with feeding and preserving themselves, and begin to aid other individuals.”32

He illustrated this same point with examples of mutual aid among bees, ants, beetles, spiders, reptiles, birds, and mammals. Different organisms lived under different conditions, and so their degree of mutualism varied. The importance of “family and social life” among birds, for instance, was “stunning.” While traveling in the Crimea, Kessler recalled, he had often seen colonies of different species playing happily together, enjoying the material and spiritual advantages afforded by mutual aid. “Some like to entertain one another with song, others enjoy various flying competitions, still others find satisfaction in dance and in bloodless duels before a crowd of their fellows.”33

Mutual aid contributed to evolution in two ways. First, it increased the resources and life span of a species, and so the likelihood that the direct action of the environment would create new forms; and second, it increased the chances that these forms would prosper.

The political significance of this view was clear to Kessler and much appreciated by the zoologists in attendance: “I do not reject the struggle for existence,” he explained, “but only affirm that the progressive development both of the entire animal kingdom and, especially, of mankind is not facilitated by mutual struggle so much as mutual aid.”34

Kessler’s “law of mutual aid” was greeted enthusiastically and widely cited. His position was endorsed by numerous political thinkers, theologians, and philosophers and by many naturalists, including Bogdanov, Beketov, Brandt, Bekhterev, and the soil scientist V. V. Dokuchaev.35

Another of Kessler’s admirers, Petr Kropotkin, commented in 1909 upon a striking difference between the zoologists of his native Russia and his adopted England: “Kessler, Severtsov, Menzbir, Brandt—4 great Russian zoologists, and a 5th lesser one, Poliakov, and finally myself, a simple traveller, stand against the Darwinist exaggeration of struggle within a species. We see a great deal of mutual aid where Darwin and Wallace see only struggle.” Kropotkin attributed this, in part, to the Malthusian ethos in England but emphasized another factor: “Russian zoologists investigated enormous continental regions in the temperate zone, where the struggle of the species against natural conditions . . . is more obvious; while Wallace and Darwin primarily studied the coastal zones of tropical lands, where overcrowding is more noticeable. In the continental regions that we visited there is a paucity of animal population; overcrowding is possible there, but only temporarily.”36


34 Ibid., p. 135.


Here Kropotkin was recalling the origins of his own belief in mutual aid, which, despite its seemingly direct relationship to his anarchist philosophy, actually had a more complex and interesting history. At age nineteen, as a young, liberal nobleman unsure of his future plans, Kropotkin had attached himself to a series of military and commercial expeditions through Siberia. He traversed over fifty thousand miles in the years 1862–1867, playing the same role of “gentleman-observer” as had Darwin on the Beagle years earlier. Already an evolutionist, Kropotkin read the Origin en route, measured Darwin’s theory against the wilderness around him, and corresponded about it with his brother. These letters support his later recollection that he and the young zoologist I. S. Poliakov “vainly looked for the keen competition between animals of the same species which the reading of Darwin’s work had prepared us to expect” but were struck instead by the many “adaptations for struggling, very often in common, against the adverse circumstances of climate, or against various enemies.” Only years afterward, by which time he was an accomplished and celebrated member of St. Petersburg’s scientific community, did Kropotkin become a revolutionary anarchist.

Kropotkin was in exile when Kessler spoke on mutual aid, but in 1882 he read his compatriot’s remarks with enthusiasm. Six years later T. H. Huxley published what Kropotkin termed an “atrocious article,” entitled “The Struggle for Existence in Human Society.” Huxley did not espouse a triumphalist “Social Darwinism,” but his rendering of the struggle for existence was Malthusian and pessimistic. His comparison of relations in the animal world with “a gladiator’s show” could not have differed more dramatically from the view shared by Kropotkin and his colleagues in St. Petersburg. Kropotkin responded to Huxley in “Mutual Aid: A Factor of Evolution,” which appeared as articles in Nineteenth Century from 1890–1896 and as a book in 1902.

This treatise followed the basic logic of the Russian national style: Kropotkin broke down the struggle for existence into its component parts, placed the organism’s struggle with abiotic conditions at its center, and criticized as Malthusian Darwin’s conception of population dynamics and intraspecific relations. He concluded that relations within a species were shaped by the physical conditions of life and that these conditions often led to mutual aid:

In the animal world we have seen that the vast majority of species live in societies, and that they find in association the best arms for the struggle for life: understood, of

Other Russians also invoked the physicogeographical circumstances of their homeland to refute Darwin’s emphasis on struggle among organisms. E.g., Dokuchaev conceded that struggle characterized organic relations in constricted geographical areas but insisted that Darwin had overemphasized such situations. One need only glance at Russian nature to see that “over stretches of thousands of versts of black soil, feather-grass, etc. [organisms] accommodate and complement one another”: Dokuchaev, “Publichnye lektstvi” (cit. n. 35), p. 277.


38 T. H. Huxley’s “The Struggle for Existence in Human Society” is reprinted in Kropotkin, Mutual Aid, pp. 329–341. I use the term “Social Darwinism” here as it was most commonly employed by the British thinkers who elaborated it and by the Russians who denounced it.
course, in its wide Darwinian sense—not as a struggle for the sheer means of existence, but as a struggle against all natural conditions unfavourable to the species. The animal species, in which individual struggle has been reduced to its narrowest limits, and the practice of mutual aid has attained the greatest development, are invariably the most numerous, the most prosperous, and the most open to further progress.

Because mutual aid resulted from demanding physical circumstances, it was rare among domesticated animals. For example, marmots were forced to cooperate in their natural habitat, where they lived in “peace and harmony”; captivity, on the other hand, brought out their fighting instincts. Weasels had been highly sociable until human settlements destroyed their food supplies, forcing them to scatter in order to avoid intraspecific competition.39

Kropotkin recognized that mutual aid alone could not substitute for intraspecific competition as an explanation for the evolution of physical traits. In the first two decades of the twentieth century he wrote many articles on the evolutionary role of the direct action of the environment and the inheritance of acquired characteristics. He hoped thereby to develop a non-Malthusian evolutionism, or, as he put it in one letter, “to demonstrate that Mutual Aid does not contradict Darwinism, if natural selection is properly understood.”40

An admirer of Darwin, Kropotkin considered himself a follower of the Darwin of the sixth edition of the Origin. Citing Darwin’s published correspondence, he contended that this mature Darwin had been approaching a theory much like his own. Darwin’s successors, however, had been blinded by their relative neglect of field investigations, their Malthusianism, and the philosophical idealism that had infected both the neo-Darwinist and neo-Lamarckian camps.41

What, then, are we to make of the fact that the most elaborate expression of Russia’s mutual aid tradition was written by an émigré anarchist in England? Mutual aid was not a controversial idea in Russia. Classical Darwinists there declined to attack it, nor did they associate Darwin’s theory with even a relatively mild Social Darwinism like Huxley’s.42 Only when Kropotkin brought this Russian tradition into contact with a quite different British one did he feel compelled to defend at length what for many Russians was commonsensical.

CONCLUSION

I have argued that the intensive exploration of the struggle for existence and criticism of its Malthusian components constituted a Russian national style in the response to Darwin.

39 Kropotkin, Mutual Aid, pp. 293 (quotation), 40, 44.
Was this response unique? In one sense it was not. At the turn of the century the German biologist Ludwig Plate developed an extensive classification of the struggle for existence, and similar individual cases can be found in other countries.43 Furthermore, the Russian response followed not from a mysterious “Russian soul” but from the confluence of two specific conditions, one physico-geographical, the other socioeconomic. Variants of these conditions must have influenced discourse in other countries as well.

Yet they seem to have combined with particular intensity and effect in Russia. Their influence framed the terms in which Russian naturalists, as a population, discussed and developed Darwin’s theory. The extent to which this was true elsewhere can only be determined by comparative studies of reactions to the hypothesized struggle for existence by other populations. In the absence of such studies, let me suggest some tentative comparisons with England.44

It has often been observed that the two Englishmen who simultaneously developed the selection theory shared two experiences: a voyage to the tropical rain forests of the equator and a sympathetic reading of Malthus’s Essay. Most Russian evolutionists shared two experiences that were roughly opposite to these: travels upon a vast continental plain (with sharply contrasting and swiftly changing environmental conditions) and an aversion to Malthus.

The naturalists of each country had knowledge of a variety of natural settings. Russians, however, tended to perceive the great continental expanse upon which they lived, and which they were encouraged to study as the tsarist empire expanded inland, as paradigmatic of essential relations in nature. The explorer-zoologist A. Middendorf, for example, contended that the enormous distances, sharp climatic contrasts, and simplicity of life conditions in Siberia provided an ideal context for the study of nature: “The very scarcity of a variety of animal forms facilitates a better understanding of the general laws of life.” He felt that in the tropics naturalists were swamped by an abundance of organic forms, which obfuscated fundamental relationships and prevented them from “penetrating deeper into the subject.” To what extent did British naturalists, investigating the tropical possessions of a sea power, tend to perceive tropical nature as similarly paradigmatic?45

43 Ludwig Plate, Über die Bedeutung der Darwinschen Selektionsprinzip (Leipzig/Berlin, 1903).
44 Judging from available accounts of the reception of Darwin’s theory in the United States, Britain, France, Germany, Italy, Spain, the Netherlands, Mexico, and the Islamic world, criticism of the struggle for existence was not central to the reaction in other countries; see Glick, ed., Comparative Reception of Darwinism (cit. n. 42); Peter J. Bowler, “Scientific Attitudes to Darwinism in Britain and America,” in Darwinian Heritage, ed. Kohn (cit. n. 12), pp. 641–681; Bowler, Evolution: The History of an Idea (Berkeley: Univ. California Press, 1984); Pietro Corsi and Paul J. Weindling, “Darwinism in Germany, France and Italy,” in Darwinian Heritage, ed. Kohn, pp. 683–729; and Ernst Mayr, The Growth of Biological Thought (Cambridge, Mass./London: Harvard Univ. Press, 1982).
45 A. Middendorf, Puteshestvie na sever’ i vostok sibiri. Part II: Sever’ i vostok sibiri v estestvennoistoricheskom otnoshenii (St. Petersburg, 1869), p. 2. Alfred Russel Wallace thought the abundance of life forms and the stable environmental conditions of tropical nature made the tropics the best place to study the laws of evolution. He was well aware that the struggle for existence had a different character there than in temperate and frigid zones. The former region “must always have remained thronged with life, and have been uninterruptedly subject to those complex influences of organism upon organism which seem the main agents in developing the greatest variety of forms and filling up every vacancy in nature.” In the temperate and frigid zones, on the other hand, “a constant struggle against the vicissitudes and recurring severities of climate must always have restricted the range of effective animal variation.” He therefore concluded that in tropical regions “evolution has had a fair chance,” while in the temperate and frigid zones “it has had countless difficulties thrown in its way.” Alfred Russel Wallace, Natural Selection and Tropical Nature (London: Macmillian, 1891), p. 310.
As for Malthus, very few Russian naturalists agreed with Joseph Hooker, T. H. Huxley, and other leading British evolutionists that his argument was “incontrovertible.”46 Nor would a single one have identified with Malthus when under attack, as did Darwin in 1866. “It consoles me that [he] sneers at Malthus,” Darwin wrote to Charles Lyell about one critic, “for that clearly shows, mathematician though he may be, he cannot understand common reasoning.” One month later, he confided to Alfred Russel Wallace that misunderstandings about the selection theory were perhaps inevitable, “for do we not see even to the present day Malthus on Population absurdly misunderstood? This reflection about Malthus has often comforted me when I have been vexed at the misstatement of my views.”47

No doubt some British naturalists had a problem with the struggle for existence, just as some Russians did not share the difficulties of their countrymen.48 But such variations found highly propitious conditions in Russia, shifting evolutionary thought in a discernible direction. In England the ground for them was relatively barren—or, more appropriately, they were lost amid more adaptive responses.

The “selection pressures” in Russia are evident even in the work of the most outstanding exception to the rule there. The plant physiologist K. A. Timiriazev, a proponent of Darwinian orthodoxy and a prolific popularizer, labored mightily to convince his compatriots that Darwin’s approach to the struggle for existence was separable from Malthus’s reactionary views. He reminded Russians that the law of population underlying Darwin’s concept had first been discovered by the popular Benjamin Franklin, not the despised Malthus. He insisted that, although


invoked by reactionaries to justify “soulless inertia” in social life, this law remained a “mechanistic cause of progress” in the natural world.49 He emphasized that neither Darwin “nor any consistent Darwinist” had ever extended the concept of the “struggle for existence” to “the cultured human of today.”50 Such arguments, he finally concluded, were futile. Beginning in the early 1890s he dropped Darwin’s metaphor from his explanations of the selection theory. He later explained that “I have systematically avoided the unhappy expression ‘struggle for existence,’ which the enemies of Darwinism exploit so unceremoniously.”51

One can imagine Timiriazev’s delight upon encountering Wallace’s article “Mr. Darwin’s Metaphors Liable to Misconception” (1868), and his disappointment upon reading it. For Wallace addressed the metaphor most troubling for British naturalists. He mentioned the “struggle for existence” only as a self-evident truth, apprehension of which enabled one to grasp the meaning of the problematic “natural selection.” Wallace and Hooker had earlier advised Darwin to drop the latter expression altogether, eliciting the response that “every one knows what is meant and is implied by such metaphorical expressions.” But, as Darwin himself surely knew, this was wishful thinking. The fate of his theory in Russia illustrates the effect that culturally specific metaphors can have on the reception and elaboration of scientific ideas.52


52 See Robert Young, “Darwin’s Metaphor: Does Nature Select?” reprinted in Young, Darwin’s Metaphor (cit. n. 46), pp. 79–125. “Mr. Darwin’s Metaphors Liable to Misconception” was first published in the Quarterly Journal of Science in October 1868 and was republished as “Creation by Law” in Wallace, Natural Selection and Tropical Nature (cit. n. 45), pp. 141–166.