Socialist Darwinism

Evolution in German Socialist Thought from Marx to Bernstein

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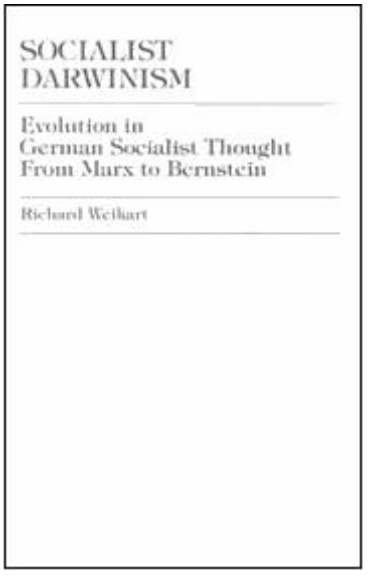

CHAPTER I

KARL MARX'S AMBIVALENCE TOWARD DARWINISM

Upon reading Darwin's *Origin of Species* for the first time in December 1860, Marx triumphantly proclaimed to Engels, "Although developed in a coarse English manner, this is the book that contains the foundation in natural history for our view."[1] Over a year later Marx read Darwin's *Origin* again, but this time was not nearly so enthusiastic. Darwin, he complained, views the natural realm as a reflection of contemporary English society:

> It is remarkable how among beasts and plants Darwin rediscovers his English society with its division of labor, competition, opening up of new markets, "discoveries" and Malthusian "struggle for existence." It is Hobbes' *bellum omnium contra omnes*, and it is reminiscent of Hegel in the *Phenomenology*, where civil (*bürgerliche*) society figures as 'spiritual animal kingdom,' while with Darwin the animal kingdom figures as civil (*bürgerliche*) society.[2]

It rankled Marx that Darwin had derived the concept of the struggle for existence from his arch-enemy Thomas Robert Malthus. The shift in Marx's opinion of Darwin between 1860 and 1862 did not reflect any change in Marx's views on nature or society, but merely indicated that he viewed Darwin from two different angles. Just as Marx considered the bourgeoisie a progressive force in its time, so he regarded Darwin's theory progressive and an advance over previous scientific theories. John Spargo later recalled that in the late 1860s Marx had said, "Nothing ever gives me greater pleasure than to have my name linked onto Darwin's. His wonderful work makes my own absolutely impregnable. Darwin may not know it, but he belongs to the Social Revolution."[3] However, like the bourgeoisie, Darwin's theory contained elements that Marx considered flawed.

Thus Marx was neither an uncritical admirer of Darwin nor a completely hostile critic. However, various factors converged in the late nineteenth and twentieth centuries to leave the false impression that Marx was more the admirer than the critic of Darwin's theory. Marx contributed to this misunderstanding through his infrequent published statements concerning Darwin, all of which were laudatory. In *Capital* he referred to *Origin of Species* as an "epoch-making work," while none of his criticisms of Darwin were disclosed until the publication of his private correspondence and manuscripts.[4]

Direct communication between Marx and Darwin, both genuine and counterfeit, further reinforced the image of Marx as a Darwin devotee. In 1873 Marx sent Darwin the second German edition of *Capital*. On the title page he inscribed, "Mr. Charles Darwin/On the part of his sincere admirer/(signed) Karl Marx/London 16 June 1873/1 Modena Villas/ Maitland Park."[5] Darwin, who read German with difficulty, left most of the pages uncut and made no pencil marks in the book, as was his custom when reading. However, he wrote a polite but non-committal letter to Marx on 1 October 1873 thanking him for the gift.[6] The significance of Marx sending an autographed copy of *Capital* to Darwin fades in light of the fact that Marx also sent Herbert Spencer a copy at the same time.[7] Marx never expressed any interest in Spencer's ideas, many of which were anathema to him, especially in the field of economics. Marx was probably more interested in circulating his ideas among prominent intellectuals of English society than in honoring the recipients of his book. One motivation behind this was that *Capital* had hardly received any attention in the British press and no English translation was in the offing. Conventions of politesse could account for Marx's designation of himself as a "sincere admirer" of Darwin, though in this case there is really no reason to doubt Marx's sincerity.

In the mid-twentieth century numerous scholars connected Marx with Darwin by explaining that Marx wanted to dedicate an edition of *Capital* to Darwin. The alleged dedication implied that Marx esteemed Darwin highly and suggested a parallelism between the two thinkers. The evidence for the intended dedication was

a letter from Darwin dated 13 October 1880 that was found in the Marx archives and in which Darwin refused the dedication of an unnamed book.[8] Before the mid-1970s only a few scholars expressed any misgivings about the alleged dedication, but some keen detective work in the 1970s produced new evidence that controverted the traditional tale of Marx's dedication to Darwin.[9] Based on the contents of Darwin's 13 October 1880 letter, Margaret Fay and Lewis Feuer suggested that it was not written to Marx at all, but rather to the biologist Edward Aveling, who, as Marx's son-in-law, had possession of some of Marx's correspondence in the late nineteenth century. Aveling must have inadvertently placed a letter Darwin sent him among Marx's correspondence. After Fay and Feuer published their findings, a letter from Aveling to Darwin was discovered among Darwin's papers, clinching the case. In this letter Aveling requested permission to dedicate his book, *The Student's Darwin*, to Darwin. Thus a Marx-Darwin link on which many scholars had relied disintegrated.[10]

Engels and other socialists in the late nineteenth century propagated the image of Marx as the Darwin of the social sciences. Marx encouraged this in 1867, when he counseled Engels to draw attention to the correlation between his social views and Darwin's theory in a review of *Capital* that Engels was to write for a German newspaper.[11] Shlomo Avineri, dismissing the Marx-Darwin link as a myth that Marx helped create and Engels propagated, asserted that in this case Marx was concerned primarily with creating interest in his book and catering to the newspaper editor's Darwinist views.[12] However, even if this is true--as it seems to be--Marx thereby demonstrated that he felt no dishonor in being associated with the name of Darwin.

In his speech at Marx's graveside, Engels again compared Marx to Darwin: "As Darwin discovered the law of evolution of organic nature, so Marx discovered the law of evolution of human history."[13] Among the small group gathered for Marx's funeral were two biologists, Ray Lankester and Edward Aveling, and a chemist, Carl Schorlemmer.[14] While their presence may have helped prompt Engels to include his remarks on Darwin, there can be little doubt that Engels was sincere. Only four

months prior to Marx's death Karl Kautsky requested that Engels contribute a lead article on Darwin to his new socialist journal, *Die neue Zeit*, since Engels had promised Bernstein an article on Darwin.[15] Engels declined, but only because of time pressure, not from lack of interest.[16] After Marx's death the parallelism between Darwinism (loosely defined) and Marxism received further emphasis by two of his sons-in-law, Edward Aveling and Paul Lafargue, as well as by the leading Marxist theorist of the Second International, Karl Kautsky.[17]

Marx's Initial Acceptance
of Darwin's Theory

After discounting all the misinformation and hyperbole, we are still confronted with the reality that Marx greeted Darwin's theory with enthusiasm, publicly praised Darwin, and only selectively criticized his theory. There were aspects of Darwin's theory that resonated with Marx's ideas, and Marx immediately recognized them. Wilhelm Liebknecht, who from 1850 to the beginning of 1862 spent much time with Marx in London, claimed that Marx knew about and recognized the importance of Darwin's work before the publication of *The Origin of Species* in 1859. This is highly doubtful, since Darwin kept his theory confidential until 1858, and it was not widely circulated until the publication of *Origin*. Marx learned of Darwin's theory by December 1859 at latest, when Engels sent him a favorable report on Darwin's work; Marx waited a full year before reading it himself. Liebknecht may have been engaging in hyperbole when he claimed that after Darwin published his theory, "for months the conversation among us [Marx and his circle of friends] was about nothing other than Darwin and the revolutionary force of his scientific conquests."[18]

Whether Liebknecht exaggerated or not, there must have been some conversations, since Marx expressed keen interest in Darwin's theory in the 1860s. Almost a month after his initial letter to Engels about Darwin, Marx highly recommended Darwin's *Origin* to Ferdinand Lassalle.[19] By June 1862 Marx had read *Origin* a second time, and the same year he attended a series of lectures by Thomas

Henry Huxley on evolution. Friedrich Lessner testified that he and many German workers in London attended lectures on natural science by Huxley, John Tyndall, and August Wilhelm von Hofmann. "Here again it was Karl Marx who urged us to do so and he himself occasionally attended them."[20] In unpublished manuscripts written between 1861 and 1863, Marx referred to Darwin favorably and called *Origin* an excellent work.[21] Despite Darwin's silence on human evolution in the 1860s, Marx credited him with having proved human descent from the apes.[22] In 1868 Ludwig Büchner sent Marx a copy of the second edition of his *Sechs Vorlesungen über die Darwin'sche Theorie* (*Six Lectures on the Darwinian Theory*), and although critical of some aspects of the work, Marx expressed pleasure that it informed him about developments in Darwinian theory in Germany.[23]

Marx's receptivity to Darwin's theory of evolution was not based on any previous propensity toward theories of biological evolution. As a young student in Berlin, he had embraced Hegelian idealism with its stress on the evolution of *Geist* (mind or spirit), but this did not entail an acceptance of biological evolution, despite the Hegelian view that nature was a reflection or manifestation of the developing *Geist*. Hegel rejected the transmutation of species as naturalistic and non-dialectical, insisting that all metamorphoses in nature occur in dialectical stages as a result of changes in the Concept or Idea underlying nature. He asserted, "It is totally vacuous to conceive of the species as evolving little by little in time." He completely repudiated the notion that nature cannot make leaps.[24]

As Marx worked his way from Hegelian idealism to the materialist conception of history in the years 1843-1845, he showed no inclination to embrace the transmutation of species. In the "Economic and Philosophical Manuscripts" of 1844 he attacked the concept of creation, which he believed to be based on a false assumption of the non-existence of humans and nature at some point in time. Marx's refutation of creation in this passage was based on his own assumption that humans and nature are self-existent and self-created. The proof he adduced for his assumption seems rather circular:

> Inasmuch as the *entire so-called world history* is for the socialist nothing other than the creation of the human through human labor and the development (*Werden*) of nature for the human, he has therefore the striking, incontrovertible proof of his self-mediated *birth*, of his process of coming into existence.[25]

Marx also appealed to natural science as evidence for the self-existence of the world. He remarked that geology had dealt a fatal blow to the idea of the creation of the earth, since it portrayed the formation of the earth as a process, and Marx considered this equivalent with the self-creation (*Selbsterzeugung*) of the earth. While emphasizing the development of the earth as evidence against creation, Marx did not embrace evolution in the biological realm. Instead he asserted, "Spontaneous generation is the only practical refutation of the theory of creation."[26]

Marx was not at all out of step with the leading scientific developments of the 1840s. In his remarks on geology, Marx probably had in mind Charles Lyell's theory of uniformitarianism, which Lyell had published in 1830-33 in *Principles of Geology*. However, despite Lamarck and a few other mavericks in the scientific community who had advanced theories of biological evolution by the mid-nineteenth century, few scientists considered evolution a feasible hypothesis. Lyell himself rejected the transmutation of species and endeavored to refute Lamarck in *Principles of Geology*. Another problem with theories of biological evolution in the early nineteenth century from Marx's point of view was that most of them were tinged with idealism.

Although Marx used some scientific arguments, his denial of creation was based more on his religious views. He consistently denied the existence of a non-human supernatural creator. The self-production or self-creation of humans was an idea Marx developed through using Feuerbach's critique of religion. In his critique of Hegel published in early 1844, Marx remarked that Feuerbach's critique of religion, if radically applied, "concludes in the doctrine, that *the highest being for the human is the human.*" Marx embraced the "irreligious critique" that "The human makes religion, religion does not make the human" and uttered his famous dictum that

religion "is the opiate of the people." Marx publicly submerged his hostility to religion after 1844 because he believed that (1) the critique of religion was already completed (by Feuerbach), and (2) religion, as an expression of human alienation, could only be abolished through economic transformations overcoming alienation. Because of the latter conviction, Marx regarded his critique of the bourgeois economy an indirect attack on religion.[27]

By 1845-46 Marx and Engels had fully developed their materialist conception of history and articulated it in *The German Ideology*, which was not published during their lifetimes. Historical development, in Marx's view, was driven by the development of the forces or mode of production. Having subscribed to this view of history, Marx asserted that the first historical act of humans was the production, as opposed to the mere collection, of the goods required to fulfill their physical needs. This raised humans out of their animalistic state. However, admitting that humans were once animals is not the same as upholding the evolution of humans from non-human primates. Indeed in *The German Ideology* Marx reaffirmed his acceptance of spontaneous generation and considered it a satisfactory explanation for the origin of humans.[28]

There is no evidence that Marx ever became enamored with any of the pre-Darwinian evolutionary theories in the 1840s or 1850s. Robert Chambers' *Vestiges of Creation* (1844) received much popular acclaim in England in the 1840s, but scientists gave little heed to it and had no trouble refuting it. Chambers' theory was undoubtedly too entrenched in idealism for Marx to seriously consider it, since Chambers conceived of evolution as a teleological process with an internal developmental principle causing change.[29] Marx probably never read Ludwig Büchner's *Kraft und Stoff* (1855), which contained an environmentalist evolutionary theory that would probably have been more palatable to Marx than was Darwin's Malthusian-based theory. However, Marx had nothing but contempt for Büchner's mechanistic materialism.[30]

Marx's statement, "The anatomy of the human is a key to the anatomy of the ape," has sometimes been misconstrued to argue that Marx had a predisposition to biological evolution before reading Darwin. In this passage of an unpublished manuscript written two years before Darwin published *The Origin of Species*, Marx claimed that the relationship between human and simian anatomy paralleled the relationship between the bourgeois and ancient economy. It is more likely that Marx was thinking of Georges Cuvier rather than some form of evolutionary theory. Just as Cuvier amazed his contemporaries by his use of comparative anatomy to identify and classify organisms, so Marx thought he could explain aspects of ancient economy by studying the present bourgeois economy. Cuvier's knowledge of comparative anatomy did not predispose him to evolution at all; in fact, he was a decided foe of evolutionary theories.[31] Marx's appeal to comparative anatomy seems evolutionary today because presently evolutionary theory emphasizes comparative anatomy as evidence for biological evolution, but such was not the case in Marx's day.

By the time Marx read Darwin in 1860 he had already developed his materialist conception of history and many of his most significant economic ideas, including his theory of surplus value. Most of the ideas in *Capital* had already been elaborated in *The German Ideology*, *The Communist Manifesto*, the unpublished *Grundrisse* (1857-58), and *The Critique of Political Economy* (1859). Marx's evolutionary view of society did not in any way derive from or depend on biological evolution. Marx was not unique in this respect, for numerous theories of dynamic social development were in circulation in Europe before Darwin published his views. Evolutionary anthropology was already current in the eighteenth century and the founders of British evolutionary sociology--Herbert Spencer, Henry Maine, and John Lubbock--also formed their views before 1859.[32] In France Henri Saint-Simon and Auguste Comte had formulated evolutionary social views independent of biological theories.

Darwin's theory did not revolutionize Marx's entire world view, though it did transform his views on biology and nature. However, Marx's world view had a

tremendous impact on his receptivity to Darwinism. Just as he looked to geology to support his anti-creationist views in 1844, after 1859 he could point to biological evolution as evidence against creation.

One aspect of Darwin's theory that Marx especially appreciated was its elimination of teleology from nature by offering an alternative to the argument for design in nature. In 1859 Engels had already mentioned this to Marx as a strong point of Darwin's theory, and when Marx praised Darwin's *Origin* in a letter to Lassalle, he wrote:

> Despite all imperfections [in Darwin's manner of developing his argument], here for the first time teleology in the natural sciences is not only dealt a mortal blow, but its rational sense is also empirically explained.[33]

Since William Paley's argument from design was still popular in England among those believing in a creator, Marx rejoiced to find a champion who could demolish this argument. Darwin had broken free from the formerly dominant creationist mode of thinking (or creationist episteme in Gillespie's terminology), which tended to be idealist and saw mind, purpose, or design in nature. He insisted on purely naturalistic explanations based on the operation of laws of nature, not conscious purpose or divine forethought.[34] At the same time, as Marx noted, Darwin provided an explanation for the appearance of design in nature. Darwin continued to use the metaphor of design and the language of natural theology, while undermining its central tenet.[35]

Since Marx had rejected Hegelian idealism in favor of a materialist position, nature could have no inherent purpose in his world view.[36] Purpose can only exist where there is consciousness, and Marx had rejected any form of consciousness outside of humans. In *Origin* Darwin did not deal with human evolution and thus did not yet raise the issue of teleology in human history. As Marx noted, Darwin had merely abolished it from the natural realm. However, since Marx believed that humans could engage in conscious, goal-directed activity, teleology in human history

was still possible in Marx's world view. However, despite his emphasis on human praxis and purposeful creative activity, at times Marx explicitly rejected teleology in human history. In *The German Ideology* Marx and Engels argued that history is merely a sequence of generations inheriting and modifying materials and the forces of production without any inherent purpose in the development.[37] Nevertheless, teleology pervades many of Marx's discussions of social evolution.[38]

Darwin's rejection of teleology in nature provided Marx with a weapon against idealism and a buttress for his materialism. He rejoiced that Thomas Henry Huxley seemed more materialistic in 1868 than previously, since Huxley asserted that we cannot escape materialism in the way we reason and think. However, Marx lamented that Huxley left a back door open to escape the consequences of his materialist views. Huxley took refuge in Humean skepticism concerning cause and effect to argue that one may believe what one wants in regard to the thing-in-itself. Since Marx was thus criticizing Huxley for not embracing ontological materialism, all the arguments claiming that Marx's materialism was not ontological fall to the ground. The use of materialism exclusively as a method, which was Huxley's position, was apparently not satisfactory to Marx's mind.[39]

Besides its anti-teleological implications, other aspects of Darwin's theory struck a responsive chord with Marx. Although he did not explain in his letter to Engels how Darwin's theory served as a foundation in natural science for their view, he did elaborate slightly in his letter to Lassalle. There he stated, "Darwin's work is very important and suits my purposes as a foundation in natural science of the historical class struggle."[40] This is still not very explicit and has engendered various explanations. One possibility is that Marx was drawing a parallel between the struggle for existence in nature and the class struggle in human society. There is a vague resemblance between the two, since both explain development through contradictions.[41] However, Marx never specifically mentioned the struggle for existence in this letter and later criticized Darwin for his view of struggle in nature.

If Marx was comparing the class struggle to the struggle for existence, he was not equating them, and it was only a fleeting idea in any case.[42]

A more plausible explanation is that Marx was not thinking specifically of the struggle for existence as the foundation for his views, but that he was reacting to the Darwinian theory as a whole. The most obvious parallel between Darwin and Marx was that both endeavored to dismantle the fixed categories that dominated the thinking of their era. Of course, some scientists before Darwin had attempted to historicize natural science and biology, but they had not yet carried the day.[43] By denying that species are fixed entities with evidence and a theory that gradually gained ascendancy, Darwin overthrew one of the linchpins of Lynnaean biology. Marx similarly rejected fixed laws that dominated bourgeois political economy. Thus Darwin was a compatriot in destroying the static world view of bourgeois society and substituting a world in flux.

Another similarity between Marx and Darwin was that they both embraced historical progress. They wrote about historical developments and phenomena that were moving forward to ever higher planes. Darwin did this despite himself, since his own theory dispensed with the necessity of progress and denied that there was any criterion for it. In most of *Origin* Darwin successfully avoided the rhetoric of progress, but he could not bring himself to completely eschew references to progress, improvement, higher and lower organisms, good and bad traits, etc. In the next to the last paragraph of *Origin* Darwin asserted, "And as natural selection works solely by and for the good of each being, all corporeal and mental endowments will tend to progress towards perfection."[44] Darwin's rhetoric of progress probably eased Marx's acceptance of his theory. However, Marx would later criticize Darwin because he had no explanation for the necessity of progress.[45] Of course, Darwin did not think there was anything to explain.

Marx's Criticism of Darwin

Upon reading Darwin again in 1862, Marx was not nearly as laudatory as he had been previously. It disturbed Marx that Darwin credited the bourgeois political economist Malthus with providing the critical idea for his theory of natural selection. In reporting on his impressions to Engels, Marx wrote,

> With Darwin, whom I have looked at again, it amuses me that he says he applies the "Malthusian" theory *also* to plants and animals, as though with Mr. Malthus the joke did not consist in that it did *not* apply to plants and animals, but only to humans--with the geometrical progression--in opposition to plants and animals.[46]

In an unpublished manuscript Marx reiterated the charge that Darwin failed to recognize that his theory controverted Malthus' population principle by showing that the geometrical progression is valid not only in human society, but also in the plant and animal realm. Marx dubbed Darwin's theory "the natural-historical refutation" of Malthus.[47]

Setting Darwin's theory in opposition to Malthus may have assuaged Marx's grief that his enemy was honored in *Origin*, but it was clearly a case of faulty reasoning. Malthus' population theory stated that humans have the tendency to reproduce at a geometrical rate (2, 4, 8, 16, 32, etc.), while at best the food supply can only increase at an arithmetic rate (2, 3, 4, 5, etc.). Thus, Malthus concluded, in the absence of any intervening restraints, human population increase continually outstrips the food supply, with misery and privation the natural result. Marx erred because he did not notice the difference between *tendency* and *actuality* in the Malthusian equation. Malthus did not believe that human populations *actually* increase geometrically, and he emphatically did believe that plants and animals (the food supply) have the *tendency* to reproduce faster than arithmetically. Darwin was not refuting nor misconstruing Malthus at all, since Malthus asserted that it "is the constant tendency in all animated life to increase beyond the nourishment prepared for

it. . . . The race of plants and the race of animals shrink under this great restrictive law; and man cannot by any efforts of reason escape from it."[48]

Since Darwin's theory of natural selection as the mechanism causing the evolution of species was based on Malthus' population theory, Marx was less inclined to accept its validity. Marx publicly manifested animus for Malthus by calling Malthus' doctrines "pestiferous" and by accusing him of plagiarism in formulating his population theory.[49] Further, in *Capital* Marx erroneously claimed that Malthus had taken monastic vows of celibacy, when in reality Malthus was married and had three children.[50] Marx provided a more substantive criticism in *Capital*, however, by identifying Malthus' error as the assumption that his law of overpopulation was an eternal law of nature rather than a historical law valid only in capitalist society. Marx believed that each mode of production had its own distinct population laws and was not ruled by some eternally-valid abstract law. Marx did, however, leave the door open for the Darwinian struggle for existence in nature by adding, "An abstract law of population exists only for plants and animals."[51] In this passage Marx is thus not accusing Darwin of fallacious reasoning for applying an abstract population principle to nature.

In his correspondence both before and after writing *Capital*, however, Marx was critical of Darwin's reliance on Malthus and on other economic ideas in formulating his theory. In 1869 Marx reiterated a point he had made in a letter to Engels in 1862, when he wrote to his daughter and son-in-law:

> From the struggle for existence in English society--the war of all against all, *bellum omnium contra omnes*--Darwin was brought to discover the struggle for existence as the ruling law of animal and plant life.[52]

Marx's criticism of Darwin for reading social conditions into the natural realm was not an *ad hoc* argument. Marx had recognized long before Darwin's theory appeared that social thinkers sometimes translate their views of society into interpretations of nature. In the 1840s Marx and Engels had objected to some socialists' depiction of

nature as idyllic, full of harmony and happiness. They protested that nature could also be construed as capitalist if one emphasized competition among organisms or as a feudal monarchy if one looked at the heavens. It seemed to them that by selective use of evidence one could justify just about any social arrangement as natural.[53]

Marx was not amiss in his insistence that Darwin was viewing nature through the lenses of British bourgeois economy, and this does not mean Malthus alone. Silvan Schweber has demonstrated that Darwin relied directly and indirectly on ideas from political economy in developing his explanation for the divergence of characters. Darwin's explanation was derived from H. Milne-Edwards, who presented the concept of the "physiological division of labour" in his *Introduction à la zoologie générale* (1852). Milne-Edwards admitted that he appropriated this idea from political economy, and it reflects the views of Adam Smith.[54] Interestingly, in the only two passages in which he mentioned Darwin in *Capital*, Marx expounded on Darwin's theory of the physiological division of labor and the specialization of plant and animal organs as parallel to the specialization of tools in manufacturing.[55] By drawing attention in *Capital* to the similarities between Darwin's view of evolution in nature and his own view of economic evolution, Marx seemed to be drawing on Darwin's theory in support of his social views, a move he declared illegitimate when others engaged in it. Marx latched onto the economic ideas Darwin had read into nature and transposed them back into economics.

Darwin read numerous writings of political economists during the time he was formulating his theory. He became acquainted with Adam Smith's economic views by reading a secondary work on Smith in 1838.[56] In 1840 he perused J. R. McCulloch's *Principles of Political Economy* and Bernard Mandeville's *Fable of the Bees*. In 1847 he read Sismondi's *Political Economy and the Philosophy of Government*, but he considered this work poor, probably because it espoused government intervention in the economy.[57] This reading list does not prove that Darwin integrated political economy into his theory, but it shows that he was interested and actively engaged in thinking about it. Further, Darwin compiled

notebooks on metaphysics and morals, including economics, as an integral part of his research on biological evolution. Most importantly, some influences of political economy are evident throughout Darwin's *Origin*. Darwin referred repeatedly to the "economy of nature." Within the context of this economy plants and animals competed for places where they could obtain their physical needs.[58]

Marx's dissatisfaction with Darwin's account of the economy of nature, specifically the struggle for existence, climaxed in his flirtation with Pierre Trémaux's theory of biological evolution. Trémaux, virtually unknown today, even among historians of science, wrote *Origine et transformations de l'homme et des autres êtres* (1865, *Origin and Evolution of Man and Other Organisms*). After reading Trémaux in 1866, Marx excitedly reported to Engels that it is "a very important work," and indeed "a *very important* advance over Darwin."[59] Marx was elated to discover an evolutionary theory that dispensed with the Darwinian struggle for existence and natural selection.

> Trémaux based his entire theory of evolution on the following law:
> THE PERFECTION OF BEINGS (*ÊTRES*) IS OR BECOMES PROPORTIONAL TO THE DEGREE OF DEVELOPMENT (*ÉLABORATION*) OF THE SOIL ON WHICH THEY LIVE! *And the soil is in general all the more developed (élaboré) as it belongs to a more recent geological formation.*[60]

Trémaux thus rejected selective competition within and among species to explain speciation in favor of a strictly environmental approach.[61] Not only did he see the environment as the primary source of change in biological organisms, but he also emphasized the preponderant role of one segment of the environment--the soil--on evolution, although he admitted that climate and other influences could play a role, too.

One facet of Trémaux's work that particularly impressed Marx was its ability to explain evolution as a necessary, lawful process. He reported to Engels that Trémaux is able to explain both progress and degeneration as necessary

developments, while in Darwin's theory they were purely the products of chance. He exulted that Trémaux had demonstrated as a "necessary law" that species would remain fixed for long periods of geological time, thus explaining paleontological gaps.[62]

Marx's enthusiasm for Trémaux did not immediately abate even after Engels wrote him twice that Trémaux's theory was nonsense and was replete with geological inconsistencies, mistakes, and unsupported conjecture. Marx came to Trémaux's defense after receiving the first letter from Engels by pointing out that Cuvier rejected biological evolution and, although he was able to refute the inadequate formulations of contemporary evolutionary theories, it turned out that he was wrong in his static view of species. He further claimed:

> Trémaux's fundamental idea about the *influence of the soil* . . . is, in my view, an idea that only needs to be *uttered* to gain for itself once and for all permanent acceptance (*Bürgerrecht*) in science, and this quite independently of Trémaux's portrayal.[63]

This statement confirms Marx's willingness to accept a scientific theory based not on empirical evidence, but on the compatability of that theory with his world view.

Even after Engels wrote him a second time criticizing Trémaux, Marx still insisted to his friend Ludwig Kugelmann that Trémaux was an advance over Darwin.[64] However, he dropped the subject in his correspondence to Engels and after October 1866 Trémaux's name disappears from Marx's writings. He probably came to recognize that his initial enthusiasm over Trémaux's theory was even more misplaced than his originally uncritical acceptance of Darwin's theory.

Marx's adoption of Trémaux's theory signalled discontent with Darwin's concept of natural selection and the struggle for existence. Even more problematic in Marx's eyes, however, were the attempts by various Darwinists and social thinkers to apply the Darwinian struggle for existence to society. Marx condemned this as circular reasoning, since Darwin modelled the struggle for existence on bourgeois economy. The result was that Darwinists were merely resurrecting the Malthusian

population principle that was embedded in Darwin's theory. Marx specifically criticized the philosopher Friedrich Albert Lange for this sort of reasoning in the second edition of *Die Arbeiterfrage* (1870, *The Labor Question*), which Lange had sent to Marx. Despite Lange's socialist sympathies and his praise for Marx, Marx considered Lange's work ignorant and devoid of content, because he subsumed social development under the struggle for existence.[65] Marx argued in another place that Darwinists used their circular reasoning to justify a human society that had not risen above its animal state.[66]

The Relationship of Nature to Society:
Natural and Social Laws

Marx was not a natural scientist nor was nature a central concern of his. He remained consistently anthropocentric in his thinking, research, and writing. As an economic and social theorist, his primary interest in nature revolved around its relationship to humans. For this reason, most of Marx's studies in natural science focussed on technology or the human control of nature to fulfill physical needs.

Besides works on technology and physical science, in the 1860s Marx read numerous works by British and German scientists on anatomy, physiology, histology, microbiology, and pathology, in addition to the Darwinian literature already mentioned above. He also read Lyell's work on *Geological Evidences of the Antiquity of Man* (1863). In 1864 he told Engels that since he always followed in Engels' footsteps, he would probably now read a lot of anatomy and physiology in his free time.[67] Wilhelm Liebknecht claimed that Marx avidly followed developments in natural science and spoke about Jakob Moleschott, Justus Liebig, and Huxley as much as he did about David Ricardo and Adam Smith.[68]

Marx's interest in Darwinism and biology waned in the 1870s, but it was never totally absent.[69] In 1875 he exulted that the physiologist Moritz Traube in Berlin had produced an artificial cell that had no nucleus, but could grow, since this lent support to the idea that primitive cells may have arisen through spontaneous generation. Marx

hailed Traube's discovery as a "great step," but in reality it was a giant misstep, since all Traube had observed were chemical substances expanding by osmosis.[70] In 1870 Engels moved to London, where he researched and wrote some manuscripts on natural science posthumously published as *Dialectics of Nature*. With Engels constantly studying natural science and living in close proximity to Marx, it seems reasonable to assume that he discussed these matters with his best friend. Marx was still expressing interest in biology at the close of his life. Just a few months before he died, he asked his daughter to bring him one of his books on physiology.[71]

An interest in and knowledge of natural science and Darwinian theory does not imply anything about whether or how Marx utilized his views of nature or biological evolution to formulate his social and economic views. The dispute over Marx's use of Darwin hinges on the question of how Marx related nature to society. Many have argued that Marx's appropriation of Darwin and biology was superficial and opportunistic, having little impact on his economic and social thought.[72] However, other commentators, including most of the leading figures in late nineteenth-century Marxism, have contended that Darwinism was an integral component of Marxist theory.[73] We can gain clarity on Marx's position about the relationship of nature to society by first asking whether Marx believed natural laws were applicable to society. If not, then the case is closed and the laws of nature expressed in the Darwinian theory have nothing to do with social theory. However, if they can be applied to society, then we must ask how and to what extent.

Before 1860 Marx distinguished between two forms of laws: natural and historical. The former were eternal laws having universal validity, while the latter were transitory and varied according to the stage of historical development, "a development determined by productive forces."[74] The natural law theories of the early nineteenth century were shaped in the eighteenth century under the influence of the Newtonian world view, which was applied not only to the cosmos, but to human affairs. Economics, morality, and other spheres of human endeavor were subsumed under unvarying laws just as physics and astronomy had been.

Marx opposed the dominant school of political economy for insisting that their economic categories and laws were eternal, natural laws.[75] He claimed that the mystery of present political economy

> consists simply in transforming transitory social relations belonging to a determined epoch of history and corresponding with a given state of material production, into eternal, general, never-changing laws, natural laws, as they call them.[76]

Marx's materialist conception of history countered this dominant natural law mentality by conceiving of the mode and relations of production as constantly undergoing transformations caused by changes in the forces of production.[77] Laws pertaining to human society are thus historical, not natural, for Marx. He believed that the theory of natural law was an ideology justifying oppression. He reproached governments for explaining away social problems as the result of natural laws, such as using the Malthusian population principle to rationalize the existence of poverty and widespread suffering.[78] According to Marx, Thomas Hobbes was guilty of advocating a misanthropic form of materialism, since he made humans and nature subject to the same laws.[79]

After reading Darwin in 1860, Marx abandoned his distinction between natural and historical laws, not because Marx's economic and social views changed, but because he now conceived of natural laws in a different light. Darwin, by undermining the fixity of species and introducing greater flux into the natural world, demonstrated that some natural categories and laws were historical rather than permanent. Marx reflected this new understanding of natural laws by subsuming both of his former categories--natural laws and historical laws--under the general rubric of natural laws. To maintain his previous distinction he then subdivided natural laws into "eternal laws of nature" and "historical natural laws."[80]

The shift in Marx's terminology concerning natural laws is evident already in his unpublished manuscripts of 1861-63. For the first time Marx applied the term "natural" to economic laws that were valid only within a particular stage of history.

He stated that natural laws of bourgeois production exist, but they differ from the natural laws of the ancient, feudal, and Asiatic modes of production.[81] The closest Marx had come before 1860 to calling economic laws natural was when he referred to them as "the inherent organic laws of political economy" in 1853.[82] The term organic laws, though, carried much greater connotations of development than the expression natural laws. In another passage in the manuscripts of 1861-63 Marx praised the eighteenth-century physiocrats for viewing certain forms of production as "physiological forms of society" that are subject to the natural necessity (*Naturnotwendigkeit*) of material laws. Although Marx had previously used the term necessity (*Notwendigkeit*) in his explications of the materialist conception of history, in his pre-Darwinian days he did not use the term natural necessity (*Naturnotwendigkeit*).[83]

In *Capital* Marx continued to emphasize that economic laws are transitory, while referring to them as natural laws. He wrote about the "natural laws of capitalist production," but also argued that the capitalist relations of production were not products of natural history, but of human history.[84] The Malthusian population principle was one of the "historical natural laws of capitalist production." Presumably the law governing the division of labor in a community of India, which operated "with the inviolable authority of a natural law," was also a historical, not eternal, natural law.[85] Marx even designated the economic law of supply and demand as a "natural law of capitalist production," but he considered it a despotic rule that organized workers could break or weaken.[86] It was not carved in stone.

In addition to using the rubric natural law for laws of both natural and social science, Marx also drew analogies between nature and society.[87] In the forward to *Capital*, Marx averred that society is not a fixed crystal, but an organism constantly in the process of transformation. It would be easy to read more into this metaphor than Marx intended, especially since a few pages earlier he had already compared his study of capitalist society to the study of natural processes in physics, chemistry, and

anatomy.[88] In the epilogue (*Nachwort*) to the second edition of *Capital* Marx quoted approvingly from a reviewer of his book who remarked that, while the old political economists viewed economic laws as analogous to physical and chemical laws, Marx depicted them as corresponding more to the evolutionary laws of biology.[89] The reviewer had good grounds to make this judgment, since Marx himself had written in the preface to the first edition that he was presenting "the development (*Entwicklung*) of the economic formation of society as a process in natural history."[90] Marx thus lent strong support to those who sought parallelism between his ideas and Darwin's.

Despite Marx's refusal to apply laws of nature to society, there are several passages in *Capital* in which he seemed to apply Darwinian laws to humans and social development. Marx asserted, for example, that "the principle of natural selection that ruled so almightily among them [rural workers]" only permitted the strongest to survive.[91] In another passage Marx discussed the origin of castes and guilds, which "follows the same natural law that rules the differentiation of plants and animal into species and sub-species."[92] Marx also compared competition among commodity producers with the *bellum omnium contra omnes* in the animal kingdom.[93] Unless Marx was inconsistent--and in this case he was not--he must have meant that these Darwinian laws only applied to society at certain stages. Read in isolation, however, these passages do not make this clear and seem to imply that Darwinian laws have universal validity for human society.

Although he never publicly endorsed Trémaux's non-Darwinian evolutionary theory, Marx's transitory preoccupation with it in 1866 caused him to blur the distinction between nature and society that he elsewhere maintained. In Trémaux's view the laws of evolution through geological transformations explained not only natural science, but also history and politics.[94] His search for an evolutionary mechanism began with investigations concerning human evolution, and this was a central concern in his book. He held the influence of the soil responsible for social developments such as religion, wars, political institutions, and nationalities.[95]

Even though this reliance on natural influences to explain social developments appears to contradict the materialist conception of history, Marx accepted Trémaux's idea that nature could have a profound influence on human society: "In the historical and political application [Trémaux is] much more important and richer than Darwin. For certain questions, like nationality, etc., here alone a natural basis [is] found." He also quoted approvingly Trémaux's statement, "Outside of the great laws of nature, the projects of men are nothing but calamities, as witnessed by the efforts of the czars to make the Polish people Muscovites."[96] Thus Marx evinced a determinism in human affairs that left open the possibility that laws of nature could help explain social developments, despite the fact that this conflicted with his insistence elsewhere that economic developments could account for all of these social institutions.[97]

In addition to viewing economic laws as natural laws, perhaps partly because of it, after 1860 Marx began to emphasize much more than before that some laws applicable to human society are immutable. The first category of unchanging social laws are those that are based on some unchanging human trait or relationship. While laws of production vary historically, all forms of human production have "certain unchanging *laws* or *relationships*."[98] In an unpublished manuscript of 1861-63 Marx asserted, "Labor is the eternal natural condition of human existence," and in *Capital* he called labor an "eternal natural necessity" independent of all forms of society.[99] Other than the rather obvious truism that humans must work in every form of society, Marx did not specify in *Capital* what laws of society would be unchanging.

In a letter to Ludwig Kugelmann in 1868 Marx again defended the idea that there are eternal laws holding sway over the affairs of people. He explained: "Natural laws cannot at all be abolished (*aufgehoben*). What can be altered in historically different circumstances is only the *form* in which each law operates." The specific law Marx was discussing was the necessity of distributing social labor in certain proportions, which is valid in all social forms. The vagueness of this law reinforces the idea that Marx was unable to formulate any specific immutable laws applying to

human society.[100] However, it is highly significant that Marx argued for the possibility of such immutable social laws.

A second category of eternal laws applying to human society appeared in Marx's writings, especially in *Capital*. These are the laws governing the process of development itself. In the forward to *Capital* Marx revealed his goals for his book:

> Even when a society has begun to discover *the natural law of its motion*,--and it is *the final and ultimate purpose of this work to unveil the economic law of motion of modern society*--it can neither leap over the natural phases of development nor remove them by decree.[101]

Because Marx was describing laws of movement for a particular society in this passage, it is possible that some or all of the laws of movement could vary at different stages of history. However, because the evolutionary phases of society cannot be decreed away, there must be an ineluctable lawfulness to the process of development.

The parallel with Darwin and his formulation of laws of development is striking. Darwin's evolutionary theory, by denying the fixity of species, did in some sense historically relativize biological laws in some fields. Biologists could describe taxonomy, anatomy, and physiology as they presently existed in species and order them in a lawlike manner, but these descriptions and orderings would be invalid at a different stage of evolution. However, Darwin continued to assert the lawfulness of nature by assuming that laws governing the process of development, such as natural selection and divergence of characters, were valid for all time.

In Marx's case, the materialist conception of history implies that immutable laws of development govern social evolution.[102] I am unaware of any time that Marx actually applied the term law to the materialist conception of history (for that matter, he did not even use the phrase "materialist conception of history"), but he constantly used terms suggesting law, e.g. necessary, inevitable, determined, and conditioned. A letter Marx wrote to Annenkow in 1846 captures the lawfulness inherent in Marx's conception of historical development:

> Are men free to choose this or that social form? Not at all. At a certain state of development of the productive powers of men, you will have a corresponding form of commerce and consumption. At a certain degree of development of production, commerce, and consumption, you will have a corresponding form of social constitution, a corresponding organization of the family, of the estates or the classes, in a word, of civil society. With such a civil society you will have a certain political state. . .[103]

The law governing this process of development seems even more deterministic in the form Marx presented it in *Poverty of Philosophy*:

> With the acquisition of new productive forces humans alter their mode of production, and with the alteration of the mode of production, of the way of earning their living, they alter all their social relations. The hand mill yields a society with feudal lords, the steam mill a society with industrial capitalists.[104]

In the preface to *A Critique of Political Economy*, his most famous summation of the materialist conception of history, Marx made clear that social developments are determined and independent of human will.[105] In *Capital* Marx not only restated the view that the economic structure is the basis for the legal, political, and intellectual superstructure, but also claimed that the capitalist mode of production is a necessary stage of economic development.[106] Technological determinism surfaces often in *Capital*: "The *cooperative character* of the labor process is now therefore, *through the nature of the means of labor itself* [i.e. machinery], a dictated *technological necessity*."[107]

Occasionally Marx provided hints that the economic determinism of his materialist conception of history was analogous to the determinism of scientific laws of nature. In 1853 he asserted that the bourgeois economy would "create these material conditions of a new world in the same way as geological revolutions have created the surface of the earth."[108] In another article the same year he argued that

society must submit to the transformations it experiences in the same way that a house yields to an earthquake.[109] Marx's receptivity to Lewis Henry Morgan's evolutionary anthropology further supports the view that Marx was a determinist, since Morgan portrayed social developments as natural and necessary.[110]

Though many scholars accept this image of Marx as an economic determinist, many others--especially critical Marxists of the Frankfurt School--dispute it and emphasize the voluntaristic side of Marx. I believe that Alvin W. Gouldner hit the mark when he argued that Marx was both a determinist and a voluntarist, never resolving this contradiction in his thought. However, James Miller has contended that the ambiguity in Marx's position is not hopelessly contradictory, and he has provided a thought-provoking synthesis of Marx's determinism and voluntarism. I stress the deterministic side of Marx, because when Marx discussed natural and social laws, the deterministic side of Marx prevailed. Furthermore, determinism received much greater expression than voluntarism in Marx's published theoretical works, above all in *Capital*.[111]

Another immutable law governing social development was Marx's dialectic. In 1858 and 1868 Marx expressed interest in writing an essay on the dialectical method that Hegel had discovered, but had stood on its head through his idealism.[112] Because Marx never found time to draft that treatise, the earliest summation of the Marxian dialectic came from the pen of Engels. Engels identified three elements of the Hegelian dialectic that were included in the Marxian dialectic: (1) the conversion of quantitative change into qualitative change and vice-versa; (2) the interpenetration of opposites; and (3) the negation of the negation.[113] In Marx's theory of history, these three dialectical laws explained development as a process operating through contradiction (class struggle) and revolution. The first two of these laws were clearly stated by Marx in *Capital* and were thus not merely Engels' ideas.[114]

Marx specifically used the term law to describe the dialectic.[115] In *Capital* he asserted that the negation of the negation operated in society "with the necessity of

a natural process."[116] Not only did Marx compare the dialectic with natural processes, he believed the dialectic could be used to explain natural phenomena: "Here, as in natural science, the correctness of the law discovered by Hegel in his *Logic* proves itself, that the merely *quantitative* changes convert into *qualitative* differences at a certain point."[117] He added in a footnote that the molecular theory of modern chemistry rests on the law of dialectics (since different numbers of atoms in a molecule result in different qualities). Therefore Marx did believe that dialectics applied to nature, and Engels was not subverting Marx's own intentions by writing on the dialectics of nature. All of Marx's comments on Engels' work on the dialectics of nature suggest that Marx fully supported Engels' endeavors.[118]

Did Marx, then, embrace Darwinism so readily because he recognized a dialectical component to Darwin's evolutionary theory? In 1847 Marx had explained his position on class struggle in society: "Without contradiction, no progress: that is the law that civilization has followed up to today."[119] Perhaps he saw the struggle for existence as contradiction producing progress in natural history and thus as dialectical. Hoffman suggests that Marx endorsed Darwin, because Darwin had pointed out the significance of pre-human labor, which was a dialectical process occurring before the advent of humans.[120] However, Marx's continual insistence that labor is unique to humans undermines Hoffman's point.

The Relationship of Nature to Society:

Human Nature

The contrast between the conceptions of human nature sketched by Marx and Darwin could scarcely have been greater. Their investigations of humanity were shaped by quite different presuppositions, purposes, and questions. Darwin was searching for evidence of and clues to human evolution and, since his evolutionary theory was non-saltatory, he needed to show gradations among humans and similarities between humans and animals. Marx, intent on overthrowing the existing

political and social structure, was more anthropocentric and stressed the uniqueness of humans.

In *The Descent of Man* (1871) Darwin wanted to demonstrate that all human traits exist in some form or other among animals and can be explained as products of natural selection without the outside interference of a creator or any inherent developmental impulse. He explained human consciousness, morality, and religion as traits beneficial to their possessors in the struggle for existence. His treatment of morality is especially illuminating. First of all, Darwin tried to demonstrate that many animals have social instincts, which are the basis for morality. Social instincts induce animals to live together so they can cooperate in protection and procurement of nourishment. He believed the moral sense would thus give a selective advantage to those possessing it when competing with organisms that were not so cooperative, especially members of the same species with less developed social instincts. Then he argued that humans also had moral instincts which had developed beyond anything known in the animal world through intense group competition, such as tribal and national warfare, and through the development of the human intellect and consciousness.[121]

For Darwin, then, humans were solidly rooted in nature, and human nature was a product of natural developments. Humans are not qualitatively different from animals, and all those traits that appear to set humans apart from nature are merely biological instincts. They may be more fully developed in humans, but they are not qualitatively different from animal instincts. Human nature is thus biologically inherent for Darwin, and the nature of an individual cannot be altered significantly by economic or social transformations. There is still an element of malleability for human nature within Darwin's conception, but that malleability is confined to gradual change in the species over eons of time.

While Darwin stressed the similarities between animals and humans, Marx emphasized the differences. The chief characteristic setting humans apart from the natural world, according to Marx, is that humans produce their means of existence, while animals merely assemble their subsistence.[122] In his early writings Marx adopted from Feuerbach the concept of species-being, which was a fixed human essence. In his "Economic and Philosophical Manuscripts" Marx stated, "But the productive life is the species-life. . . . and free conscious activity is the species-character of the human."[123] Free activity means that humans do not just act to fulfill their bare physical requirements, but they labor and create even when there is no external compulsion to do so.[124]

Although the concept of species-being dropped out of Marx's thought after his critique of Feuerbach in 1845, Marx continued to distinguish humans from animals on the basis of productive activity and thus raised creative labor to the status of a universal human attribute. Shlomo Avineri thus employs the term *Homo faber* to describe Marx's conception of humans.[125] In *Capital* Marx explained some aspects of human labor that set it apart from animal behavior. First of all, humans exercise control over nature through conscious activity (which he had earlier used to define species-character), while animals act according to instinct. Further, humans plan in their heads what they are going to create and thus engage in "goal-directed activity."[126]

Unlike Darwin, who was fundamentally an individualist trying to explain how humans developed social instincts (i.e. morality), Marx in the early stages of his thought assumed that humans were essentially social beings and any kind of social fragmentation (such as individualism) was an aberration created by alienating conditions. Marx apparently did not think it necessary to show how or why humans are social, since he never provided reasons for his assertion that humans are essentially social.[127] Marx later dropped discussion of human's social nature, but the idea remained implicit in the theme of alienation that persisted in Marx's thought.[128]

Although Marx may not have read Darwin's *Descent* and did not express any opinions on Darwin's theory of the evolution of human social instincts, Darwin's explanation would not have met with his approval. Marx believed that morality, religion, family, state, and law were not in any way related to inherent biological traits passed on from generation to generation, but rather were products of alienation under the existing economic and social conditions. Darwin, on the other hand, conceived of morality as social instincts that cemented society together. Rather than morality being the basis of human society--as it was for Darwin--Marx thought it was the contradiction of the human's social being.[129] The consequence of Marx's view is that human nature is much more malleable, and he could speak of humans changing their own nature.[130] Thus, a revolution in political, economic, and social institutions could transform human nature thoroughly in a short period of time.

One reason Marx was fascinated with Trémaux's evolutionary theory was that, unlike Darwin, Trémaux saw human nature as extremely malleable. Trémaux argued that if humans (or other organisms) were transported from one region of the world to another with different geological strata, in relatively few generations they would be transformed to correspond to the geological development of that region. They would either degenerate or progress rather quickly.[131] This paralleled Marx's view that humans could be quickly transformed if the economic basis of society changed, i.e. if the technological and economic environment altered.

Conclusion

Despite Marx's and Engels' promotion of the idea of parallelism between their views and Darwinism, Darwinism made no substantial impact on Marx's theory of social development, which was firmly established long before Darwin publicly revealed his theory. Marx's social thought was rather impervious to biological theories of evolution because of Marx's emphasis on the uniqueness of humans and his sharp distinction between natural and social laws. However, after reading Darwin, Marx replaced his dichotomy between eternally-fixed natural laws and historical social

laws with a new distinction: eternal natural laws and historical natural laws. Marx still wanted to uphold some division between laws applying to nature and laws pertaining to society, but the use of the rubric natural law for both categories bred the illusion among many adherents of Marxism that Marx's social laws were subsumed under the laws of natural science. Although he adopted the new terminology because of a sincere shift in his understanding of nature, the new conceptualization also served a rhetorical strategy that helped Marx disseminate his doctrine. The advantage of being more palatable to his contemporaries, many of whom were enthralled with natural science and Darwinism, was offset, however, by the confusion among some of his followers, who thought natural laws of society were laws of nature applied to society.

Marx's social philosophy decisively influenced his reception of Darwin's theory. He rejoiced that Darwin had eliminated the need for a creator by his anti-teleological explanation of nature. However, he was incensed that Darwin relied on the Malthusian theory and privately criticized the theory of natural selection and the struggle for existence. Marx's acceptance of Trémaux's evolutionary theory shows that he had more affinity for environmental explanations than for competitive models. Marx's criticisms, however, were largely unknown to his contemporaries, and thus Marx helped perpetuate the misconception that his views were fully congruent with Darwin's.

ENDNOTES

1. Marx to Engels, 19 December 1860, in *MEW*, 30:131.
2. Marx to Engels, 18 June 1862, in *MEW*, 30:249.
3. Quoted by Pittenger, *American Socialists*, 17.
4. Marx, *Das Kapital*, in *Marx Engels Gesamtausgabe* (Berlin, 1975ff.; henceforth *MEGA*), II/5:277. Dieter Groh, "Marx, Engels und Darwin: Naturgesetzliche Entwicklung oder Revolution? Zum Problem der Einheit von Theorie und Praxis," in *Der Darwinismus: Die Geschichte einer Theorie*, ed. Günter Altner (Darmstadt, 1981), 222, considers Marx's and Engels' relationship to Darwin as privately polemical and publicly one of usurpation.
5. Although signed 16 June 1873, Marx did not obtain Darwin's address until Carl Schorlemmer sent it to him in a letter dated 25 September 1873 (S. Kirschke,

"Darwinism and Marxism--Including a Consideration of the Personal Contacts between Marx, Engels and Darwin," in *Darwin Today*, ed. E. Geissler and W. Scheler [Berlin, 1983], 55).

6. Ralph Colp, Jr., "The Contacts between Karl Marx and Charles Darwin," *Journal of the History of Ideas* 35 (1974): 334.

7. Ralph Colp, Jr., "The Myth of the Darwin-Marx Letter," *History of Political Economy* 14 (1982): 462.

8. Margaret Fay, "Did Marx Offer to Dedicate *Capital* to Darwin? A Reassessment of the Evidence," *Journal of the History of Ideas* 39 (1978): 136 (n. 11), gives the full text of the letter.

9. Howard Selsam, "Charles Darwin and Karl Marx," *Mainstream* (NY) 12 (June 1959): 24, considers the rumor of Marx's dedication of *Capital* to Darwin apocryphal, and Shlomo Avineri, "From Hoax to Dogma: A Footnote on Marx and Darwin," *Encounter* 28 (March 1967): 32, calls it tongue-in-cheek.

10. Fay, "Did Marx Offer," 133-46; Lewis S. Feuer, "Is the 'Darwin-Marx Correspondence' Authentic?" *Annals of Science* 32 (1975): 1-12; P. Thomas Carroll and Lewis S. Feuer, "Further Evidence that Karl Marx Was Not the Recipient of Charles Darwin's Letter Dated 13 October 1880," *Annals of Science* 33 (1976): 385-87; Ralph Colp, Jr., "The Contacts of Charles Darwin with Edward Aveling and Karl Marx," *Annals of Science* 33 (1976): 387-94.

11. Marx to Engels, 7 December 1867, in *MEW*, 31:404; Engels, *MEW*, 16:226-28.

12. Avineri, "From Hoax to Dogma," 30-32. Enrique M. Ureña, "Marx and Darwin," *History of Political Economy* 9 (1977): 559, largely agrees with Avineri. Terence Ball, "Marx and Darwin: A Reconsideration," *Political Theory* 7 (1979): 469, also considers the link between Marx and Darwin chimerical.

13. Engels, "Begräbnis," in *MEW*, 19:335.

14. Ibid, 339; Korrespondenzbericht, *Der Sozialdemokrat* 14 (29 March 1883), in *Ihre Namen Leben durch die Jahrhunderte fort: Kondolenzen und Nekrologe zum Tode von Karl Marx und Friedrich Engels* (Berlin, 1983), 112-13.

15. Kautsky to Engels, 11 November 1882, in Benedikt Kautsky, ed., *Friedrich Engels' Briefwechsel mit Karl Kautsky* (Vienna, 1955), 66.

16. Engels to Kautsky, 15 November 1882, in *MEW*, 35:399-400.

17. Aveling, "Charles Darwin," 745-757. This article was originally published in English in *New Century Review* and was also published the same year in French in *Devenir Social*.

18. Wilhelm Liebknecht, *Karl Marx zum Gedächtnis: Ein Lebensabriss und Erinnerungen* (Nuremberg, 1896), 50.

19. Marx to Ferdinand Lassalle, 16 January 1861, in *MEW*, 30:578.

20. Friedrich Lessner, "Before 1848 and After," in *Reminiscences of Marx and Engels* (Moscow, n.d.), 161.

21. Marx, "1861-63 Manuscript," in *MEGA*, II/3.3:772-73, 1431.

22. Marx to Lion Philips, 25 June 1864, in *MEW*, 30:665.

23. Marx to Engels, 14 November 1868 and 18 November 1868, in *MEW*, 32:202-3, 206.

24. Georg Wilhelm Friedrich Hegel, *Werke* (Frankfurt a.M., 1970), 9:14, 23, 31-34.

25. Marx, "Ökonomisch-philosophische Manuskripte," in *MEGA*, I/2:397-98.

26. Ibid, I/2:397.

27. Marx, "Zur Kritik der Hegelschen Rechtsphilosophie: Einleitung," in *MEGA*, I/2:170, 177, 182; Marx, "Interview by *Chicago Tribune*," 18 December 1878, in *MEW*, 34:514.

28. Marx and Engels, *Die deutsche Ideologie*, in *MEW*, 3:20, 21, 28, 30, 43.

29. Loren Eiseley, *Darwin's Century: Evolution and the Man Who Discovered It* (Garden City, NY, 1958), 137.

30. Marx to Ludwig Büchner, 1 May 1867, in *MEW*, 31:544.

31. Marx, "Einleitung zur Kritik der Politischen Ökonomie," in *MEW*, 13:636.

32. J. W. Burrow, *Evolution and Society: A Study in Victorian Social Theory* (Cambridge, 1966), 18, 21.

33. Marx to Lassalle, 16 January 1861, in *MEW*, 30:578.

34. Neal C. Gillespie, *Charles Darwin and the Problem of Creation* (Chicago, 1979), xi, 3, 107-8, 147, ch. 4.

35. David Kohn, "Darwin's Ambiguity: The Secularization of Biological Meaning," *British Journal for the History of Science* 22 (1989): 215-39; Michael Ruse, *The Darwinian Paradigm: Essays on Its History, Philosophy, and Religious Implications* (London: 1989), 151-52.

36. Although Marx called himself a materialist in a letter to Ludwig Kugelmann, 6 March 1868, in *MEW*, 32:538, many scholars dispute that he upheld ontological materialism; many, on the other hand, argue that he was an ontological materialist. Diane Paul, "Marxism, Darwinism and the Theory of Two Sciences," *Marxist Perspectives* 2,1 (1979):123-124, errs by claiming that Marx and Engels only rejected teleology directed by an outside force, while maintaining a teleology inherent in nature. She asserts that this teleology inherent in nature is driven by an internal necessity, but this seems self-contradictory. If phenomena in nature are determined by antecedent causes (internal necessity), then it is not determined by future purposes and goals. However, if Paul means by internal necessity that nature has its own conscious goals, then this is thoroughly un-Marxian.

37. Marx and Engels, *Deutsche Ideologie*, in *MEW*, 3:45.

38. Whether and how Marx embraced teleology in social development is a highly disputed question among Marx scholars. Ball, "Marx and Darwin," 472-74; Terence Ball, "Marxian Science and Positivist Politics," in *After Marx*, eds. Ball and Farr, 243; James Farr, "Marx No Empiricist," *Philosophy of the Social Sciences* 13 (1983):469-70; Alfred Schmidt, *Der Begriff der Natur in der Lehre von Marx* (Frankfurt a.M., 1962), 82-83; claim that humans provide purpose to history (Ball also adds that, according to Marx, humans give design to nature). Allen Wood, *Karl Marx* (London, 1981), 105-9, sees teleology in Marx's belief

that there is a tendency for the efficient use of productive powers, but notes that Marx and Engels thought this form of teleology was explicable in materialistic terms, just as Darwin explained teleology in biology. Anthony Leeds, "Darwinian and 'Darwinian' Evolutionism in the Study of Society and Culture," in *The Comparative Reception of Darwinism*, ed. Thomas F. Glick (Chicago, 1988), 444, 458-59, sees teleology in Marx's dialectic, because contradictions must synthesize. Sidney Hook, *From Hegel to Marx: Studies in the Intellectual Development of Karl Marx* (Ann Arbor, MI, 1962), 38; Bernard Naccache, *Marx Critique de Darwin* (Paris, 1980), 28; Paul Thomas, "Nature and Artifice in Marx," *History of Political Thought* 9 (1988): 495; argue that Marx rejected teleology in social evolution.

39. Marx to Engels, 12 December 1868, in *MEW*, 32:229.

40. Marx to Ferdinand Lassalle, 16 January 1861, in *MEW*, 30:578.

41. Marx, *Elend der Philosophie*, in *MEW*, 4:91-92.

42. Josef Boszotta, "Einflüsse des Darwinismus auf den Marxismus," (Dissertation, Hochschule für Welthandel in Wien, 1950) 91-92; Sidney Hook, "Marx and Darwinism," *New Republic* 67 (1931): 290; Paul, "Marxism, Darwinism," 131.

43. See Introduction, n. 7.

44. Charles Darwin, *The Origin of Species* (London, 1968), 131-33, 229, 443, 459-60. Quote at 459.

45. Marx to Engels, 7 August, 1866, in *MEW*, 31:248.

46. Marx to Engels, 18 June 1862, in *MEW*, 30:249.

47. Marx, "1861-63 Manuscript," in *MEGA*, II/3.3:772-73.

48. Thomas Robert Malthus, *An Essay on the Principle of Population* (6th ed., 1826), in *Works*, ed. E. A. Wrigley and David Souden (London, 1986), 2:7-8.

49. Marx, "The Labor Question," in *MEGA*, I/12:450; Marx, *Kapital*, in *MEGA*, II/5:413 (n. 325).

50. William Petersen, *Malthus* (Cambridge, Mass., 1979), 22.

51. Marx, *Kapital*, in *MEGA*, II/5:428 (n. 16), 508.

52. Marx to Paul and Laura Lafargue, 15 February 1869, in *MEW*, 32:592.

53. Marx and Engels, *Deutsche Ideologie*, in *MEW*, 3:459-60.

54. Schweber, "Darwin," 197, 211-12; Darwin, *Origin*, 158.

55. Marx, *Kapital*, in *MEGA*, II/5:277 (n. 31), 303 (n. 89).

56. Charles Darwin, *Metaphysics, Materialism, and the Evolution of Mind: Early Writings of Charles Darwin*, ed. Paul H. Barrett and Howard E. Gruber (Chicago, 1980), 36.

57. Schweber, "Darwin," 265-66, 269-70.

58. Darwin, *Origin*, 116, 127, 131, 147, 158, 444.

59. Marx to Engels, 7 August 1866, in *MEW*, 31:248.

60. P. Trémaux, *Origine et transformations de l'homme et des autres êtres* (Paris, 1865), 17-18. Emphasis in original.

61. Ibid, 227-29.

62. Marx to Engels, 7 August 1866, in *MEW*, 31:248.

63. Marx to Engels, 3 October 1866, in *MEW*, 31:257-58.

64. Marx to Ludwig Kugelmann, 9 October 1866, in *MEW*, 31:530.

65. Marx to L. Kugelmann, 27 June 1870, in *MEW*, 32:685-86. On Lange, see ch. 3.

66. Marx to Paul and Laura Lafargue, 15 February 1869, in *MEW*, 32:592.

67. Marx to Engels, 4 July 1864, in *MEW*, 30:418; 25 March 1868, in *MEW*, 32:52-53; Marx to Ludwig Kugelmann, 17 April 1868, in *MEW*, 32:546; Ferdinando Vidoni, "Das Laboratorium von Marx: Die Bedeutung der Naturwissenschaften für das Marxsche Werk," *Marxistische Studien* 12 (1987): 114-15, 120.

68. W. Liebknecht, *Karl Marx*, 50.

69. Colp, "Contacts of Darwin with Aveling and Marx," 394, agrees with this judgment in relation to Darwinism, though Kurt Reiprich, *Die philosophisch-naturwissenschaftlichen Arbeiten von Karl Marx und Friedrich Engels* (Berlin, 1969), 22, claims that Marx studied science as intensively as Engels in the period 1869-1883. Marx's correspondence and other writings do not seem to bear this out.

70. Marx to P. L. Lawrow, 18 June 1875, in *MEW*, 34:145.

71. Marx to Eleanor Marx, 23 December 1882, in *MEW*, 35:418.

72. Ball, "Marx and Darwin," 469-70; Terrell Carver, *Marx and Engels: The Intellectual Relationship* (Brighton, 1983), 135; Groh, "Marx, Engels und Darwin," 222, 228; V. L. Komarov, "Marx and Engels on Biology," in *Marxism and Modern Thought*, ed. N. I. Bukharin, et al., trans. Ralph Fox (NY, 1935), 226; Th. G. Masaryk, *Die philosophischen und sociologischen Grundlagen des Marxismus: Studien zur socialen Frage* (1899; rprt. Osnabrück, 1964), 50-51, 260; Ureña, "Marx and Darwin," 553, 559; Ian Mitchell, "Marxism and German Scientific Materialism," *Annals of Science* 35 (1978): 388; Avineri, "From Hoax to Dogma," 30-32; Colp, "Contacts between Marx and Darwin," 332.

73. Aveling, "Charles Darwin"; Boszotta, "Einflüsse," 1, 148, 159, passim; Jean Hyppolite, *Studies on Marx and Hegel*, trans. John O'Neill (NY, 1969), 129; Alvin W. Gouldner, *The Two Marxisms: Contradictions and Anomalies in the Development of Theory* (NY, 1980), 72.

74. Marx to Annenkow, 28 December 1846, in *MEGA*, III/2:75.

75. Ibid; Marx, *Zur Kritik der Politischen Oekonomie*, in *MEW*, 13:46.

76. Marx, "The War Question--British Population and Trade Returns--Doings of Parliament," in *MEGA*, I/12:277 (originally published 24 August 1853).

77. Marx, *Elend der Philosophie*, in *MEW*, 4:139-140; *Manifest der Kommunistischen Partei*, in *MEW*, 4:478.

78. Marx, "Kritische Randglossen," in *MEGA* I/2:455.

79. Marx, *Heilige Familie*, in *MEW*, 2:136.

80. This distinction is most clearly made in Marx, *Kapital*, in *MEGA*, II/5:428 (n. 16).

81. Marx, "1861-63 Manuscript," in *MEGA*, II/3.6:2269.
82. Marx, "The Future Results of British Rule in India," in *MEGA*, I/12:252.
83. Marx, "1861-63 Manuscript," in *MEGA*, II/3.2:338.
84. Marx, *Kapital*, in *MEGA*, II/5:12, 122, 223.
85. Ibid, 428 (n. 16), 292.
86. Ibid, 516.
87. Hans Jörg Sandkühler, "Die Entwicklung des wissenschaftlichen Sozialismus aus dem Kapital-Verhältnis. Zum Determinismus-Problem in der Arbeiterbewegung," in *Bernstein und der Demokratische Sozialismus*, ed. Horst Heimann and Thomas Meyer (Berlin, 1978), 246-47.
88. Marx, *Kapital*, in *MEGA*, II/5:12, 14.
89. Marx, *Kapital* (2nd ed.), in *MEGA*, II/6:7-7-8.
90. Marx, *Kapital*, in *MEGA*, II/5:14.
91. Ibid, 211-12.
92. Ibid, 275-76.
93. Ibid, 290.
94. Trémaux, *Origine*, 17-18.
95. Ibid, 406, 419, 426-27.
96. Marx to Engels, 7 August 1866, in *MEW*, 31:248. The Trémaux quotation is located in *Origine*, 421.
97. John L. Stanley and Ernest Zimmermann, "On the Alleged Differences between Marx and Engels," *Political Studies* 32 (1984): 233-34.
98. Marx, "1861-63 Manuscript," in *MEGA*, II/3.6:2269.
99. Marx, "1863-65 Manuscript," in *MEGA*, II/4.1:73-74; *Kapital*, in *MEGA*, II/5:23, 135.
100. Marx to Ludwig Kugelmann, 11 July 1868, in *MEW*, 32:553. This letter refutes Groh's claim that Marx never discussed natural law in his correspondence, which, Groh concludes, demonstrates that Marx only wrote about natural law for public consumption, not because he considered it an integral part of his theory; see Groh, "Marx, Engels und Darwin," 235-36.
101. Marx, *Kapital*, in *MEGA*, II/5:13-14.
102. This is also the view of Z. A. Jordan, *The Evolution of Dialectical Materialism: A Philosophical and Sociological Analysis* (London, 1967), 299.
103. Marx to Annenkow, 28 December 1846, in *MEGA*, III/2:71.
104. Marx, *Elend der Philosophie*, in *MEW*, 4:130.
105. Marx, *Zur Kritik der Politischen Oekonomie*, in *MEW*, 13:8-9.
106. Marx, *Kapital*, in *MEGA*, II/5:49 (n. 28); 298, 12.
107. Ibid, 315.
108. Marx, "Future Results," in *MEGA*, I/12:252.
109. Marx, "Forced Emigration," in *MEGA*, I/12:59.
110. William H. Shaw, "Marx and Morgan," *History and Theory* 23 (1984): 217-18.
111. Sharing my view of Marx's economic determinism are G. A. Cohen, *Karl*

Marx's Theory of History: A Defence (Princeton, 1978), 134 and passim; William H. Shaw, *Marx's Theory of History* (Stanford, 1978), 5 and passim; John McMurtry, *The Structure of Marx's World-View* (Princeton, 1978), 11 and passim; and Hook, *From Hegel to Marx*, 38. Those disputing Marx's economic determinism include Norman Levine, *The Tragic Deception: Marx contra Engels* (Oxford, 1975), 108, 157; Daniel Little, *The Scientific Marx* (Minneapolis, 1986), 26-29; and numerous others. For mediating positions, see Gouldner, *Two Marxisms*, 32-35, 64-65, 250-51 and passim, and James Miller, *History and Human Existence: From Marx to Merleau-Ponty* (Berkeley, 1979), 64-100.

112. Marx to Engels, c. 16 January 1858, in *MEW*, 29:260; Marx to Joseph Dietzgen, 9 May 1868, in *MEW*, 32:547. S. H. Rigby points out that Marx as well as Engels returned to Hegelian dialectical method around 1858-59; *Engels and the Formation of Marxism: History Dialectics and Revolution* (Manchester, 1992), 97-102.

113. Engels, *Dialektik der Natur*, in *MEGA*, I/26:175-82; *Anti-Dühring*, in *MEGA*, I/27:317-37.

114. Marx, *Kapital*, in *MEGA*, II/5:246, 609.

115. Marx, *Kapital*, in *MEGA*, II/5f:246; Marx to Engels, 22 June 1867 in *MEW*, 31:306; Marx to Joseph Dietzgen, 9 May 1868, in *MEW*, 32:547. Herbert Marcuse, *Reason and Revolution: Hegel and the Rise of Social Theory* (Boston, 1960), 316-17, emphasizes that dialectical laws are necessary laws, but argues that Marx thought the dialectic applied only to pre-socialist societies.

116. Marx, *Kapital*, in *MEGA*, II/5:609.

117. Ibid, 246.

118. Marx to Engels, 31 May 1873, in *MEW*, 33:82; Marx to Wilhelm Liebknecht, 7 October 1876, in *MEW*, 34:209. Many scholars agree with me that Marx applied the dialectic to nature: Rigby, *Engels*, 97-102, 150-60; J. D. Bernal, *Marx and Science* (NY, 1952), 18; Boszotta, "Einflüsse," 38 and passim; John Hoffman, *Marxism and the Theory of Praxis: A Critique of Some New Versions of Old Fallacies* (London, 1975), 48-50, 56; David McLellan, *The Thought of Karl Marx: An Introduction*, 2nd ed. (London, 1980), 152; Bertell Ollman, *Alienation: Marx's Conception of Man in Capitalist Society*, 2nd ed. (Cambridge, 1976), 53; Reiprich, *Phil.-naturwiss. Arbeiten.*, 25-26; Vidoni, "Laboratorium," 121.

119. Marx, *Elend der Philosophie*, in *MEW*, 4:91-92.

120. Hoffman, *Marxism*, 69.

121. Charles Darwin, *The Descent of Man* (London, 1871), I:71-80, 84-85, 106, 166; Robert J. Richards, *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior* (Chicago, 1987), ch. 5.

122. Jon Elster lists six ways that Marx distinguished between humans and animals: (1) self-consciousness, (2) intentionality, (3) language, (4) tool use, (5) tool making, and (6) cooperation; Elster, *Making Sense of Marx* (Cambridge, 1985), 62.

123. Marx, "Ökon.-phil. Manuskripte," in *MEGA*, I/2:369.

124. Ibid, 369; Marx and Engels, *Deutsche Ideologie*, in *MEW*, 3:28.

125. Shlomo Avineri, *The Social and Political Thought of Karl Marx* (Cambridge, 1968), ch. 3.

126. Marx, *Kapital*, in *MEGA*, II/5:129-30; Marx and Engels, *Deutsche Ideologie*, in *MEW*, 3:30.

127. Marx, "Ökon.-phil. Manuskripte," in *MEGA*, I/2:389-91. Paul Heyer, *Nature, Human Nature, and Society: Marx, Darwin, Biology, and the Human Sciences* (Westport, Conn., 1982), 114, 119, 126, mistakenly argues that Marx grounded human social nature in human biology.

128. Wood, *Karl Marx*, 16-17.

129. Marx, "Ökon.-phil. Manuskripte," in *MEGA*, I/2:389-90.

130. Marx, *Kapital*, in *MEGA*, II/5:129; Marx, *Elend der Philosophie*, in *MEW*, 4:160.

131. Trémaux, *Origine*, 105-16.

CHAPTER II

FRIEDRICH ENGELS:

EVOLUTION AND THE DIALECTICS OF NATURE

When Darwin published *The Origin of Species* in November 1859, Engels immediately procured a copy and became one of Darwin's earliest converts. Within a few weeks of its publication, he wrote to Marx:

> Darwin, by the way, whom I am just now reading, is quite splendid. There was one aspect of teleology that had not yet been destroyed, but now that has been done. Never before has such a wonderful attempt been made to prove historical development in nature, and certainly never with such success.[1]

From that time on, Engels lauded Darwin's theory as one of the greatest scientific accomplishments of the nineteenth century. He paid Darwin the highest compliment by repeatedly comparing him with his colleague Marx: "As Darwin discovered the law of evolution of organic nature, so Marx discovered the law of evolution of human history."[2] However, his admiration for Darwin did not prevent him from criticizing aspects of Darwin's theory that he considered problematic, such as the struggle for existence.

Engels' adoption and propagation of evolutionary theory had an even greater impact on the German socialist movement than did Marx's views on the subject. Although Engels was the junior partner in his intellectual relationship with Marx, he was decidedly superior to Marx in his knowledge of some fields, including natural science. He preceded Marx in reading Darwin's *Origin* and perused far more works on evolutionary theory than did Marx. After retiring from his career in business in 1870, he devoted his time to the study of natural science and intended to write a book outlining a dialectical view of nature. When Marx died in 1883, Engels sacrificed his

project for what he considered an even more significant task--the editing and publication of Marx's manuscripts. Important as natural science was to Engels, he did not consider it as crucial as political economy.

While only fleeting references to biological evolution surface in Marx's publications, Engels devoted considerable attention to it, especially in *Herrn Eugen Dühring's Umwälzung der Wissenschaften* (1878, commonly called *Anti-Dühring*), and in his uncompleted manuscripts of 1873-1883, which were posthumously published as *Dialektik der Natur* (1925, *Dialectics of Nature*). Since *Anti-Dühring* was one of the most influential books among German socialists in the late nineteenth-century, Engels' views on evolution received wide circulation.

Engels' grappled with evolution, science, and natural laws, not in order to infuse Marxian socialism with principles of natural science, but to harmonize natural science and socialism within a broader, coherent world view unified by the principle of dialectical development. While pointing out parallels between Darwinism and Marxism, he relegated them to separate spheres of explanation. Although he admitted that Darwin's theory, including natural selection, may be valid for the natural realm, he never permitted Darwinism to dictate social theory. On the contrary, he always subjected Darwinism to Marxism when discussing social development. Marxist theorists in the late nineteenth century would follow his example.

Engels' concern with formulating a lucid and consistent position on nature and evolutionary theory was not just theoretical. He was responding to the non-Marxian socialist Darwinists, especially Ludwig Büchner and Friedrich Albert Lange, whom he disdained for their application of Darwinism to social thought. Engels believed their social theory was dangerous, and he sought to undercut its effect. In the 1870s various varieties of socialism, including Marx's and Engels', were competing for supremacy in the German socialist movement, and it was not at all clear whether Lassalle, Lange, Büchner, Marx, or someone else would emerge triumphant in the struggle to win the sympathies of the German working class. Thus Engels' discourse on nature was an attempt to provide a satisfactory view of society and nature that would undermine the effect of the non-Marxian socialist theorists. If he could help

it, Engels would not permit the non-Marxian socialist Darwinists to present themselves as more scientific or more Darwinian by their appropriation of Darwinian theory.

Engels' writings on science and evolution shared the same prestige among late nineteenth-century socialists that caused them to accept without question Engels' interpretation of Marxism. They believed that Engels' world view was essentially the same as Marx's. Despite many recent attempts by Marxists to radically dissociate Marx's and Engels' thought, there are good grounds for maintaining their unity.[3] Their close friendship, literary collaboration, and voluminous correspondence suggest substantial intellectual harmony. Furthermore, we have their own testimony concerning their agreement. In 1859 Marx wrote that in the 1840s Engels had arrived at the same position as he had, which led to their collaboration.[4] Marx once sent someone a copy of *Anti-Dühring*, remarking that Engels' book "is very important for a correct evaluation of German socialism."[5] In a forward to the French edition of "Socialism: Utopian and Scientific" Marx lauded Engels as one of the foremost representatives of socialism and hailed this work as "an *introduction to scientific socialism*."[6]

This is not to suggest that Marx and Engels thought alike on every topic all the time. Indeed, perhaps nowhere are their disagreements more evident than in their pronouncements on evolution, especially in their dispute over the significance of Trémaux's evolutionary theory. However, their disagreements were not on fundamental issues and Engels' treatment of evolution displays many points of contact with Marx's world view.

Engels' Receptivity to Darwinism

Engels' first remark concerning Darwin's theory was that it demolished teleology in nature. This was important to Engels, because it confirmed his atheistic world view by dispensing with the need for God or supernatural design to explain order in the cosmos. In *Anti-Dühring* Engels underscored this point by insisting that

adaptation in natural selection must proceed without any conscious purpose or intent, since conscious purpose in nature implies the existence of a creator God.[7]

Engels, like Marx, embraced the Feuerbachian analysis of religion in the early 1840s and viewed God as merely the hypostatization of humanity.[8] Later he was grateful for any scientific evidence or theories that could be used to attack religion and disdained any scientific explanations that required the existence of a supernatural being. After reading Lyell's and Huxley's works on human evolution, which were the earliest scientific works to apply Darwinism to humans, Engels exulted that religion was now being assaulted from all sides.[9] Although he thought Lyell's and Huxley's 1863 books on human origins "interesting and quite good," he--like Marx--was disappointed that Huxley would not espouse a thorough-going materialist philosophy.[10] Despite his antipathy for the leading German scientific materialists, Vogt, Moleschott, and Büchner, he approved of their efforts to use science, presumably including evolutionary theory, to advance the cause of atheism.[11] He rejected as stupid Lord Kelvin's theory that the universe is progressively cooling, because this seemed to require a God to produce the original condition of heat.[12]

Although he disdained the mechanistic materialism of Vogt, Moleschott, and Büchner, Engels' position was clearly materialistic, since he ultimately reduced all phenomena to matter in (dialectical) motion. Engels' materialism was, in fact, quite close to that of Büchner or Haeckel, since they all espoused a developmental rather than static materialism.[13] Engels' attack on materialism as a world view that supposedly upheld the priority of matter over motion and energy in *Dialectics of Nature* was based on a misquote from Haeckel and caricatured the true position of the German scientific materialists.[14] Both Haeckel and Büchner agreed with Engels that energy and motion are inseparable from matter. The real contention between Engels and the scientific materialists concerned the mode of development, since Engels insisted that Hegel's dialectic, if stripped of its idealism, could account for development in nature. The scientific materialists had nothing but contempt for Hegel.

Engels' materialism is clearly portrayed in his explanation of the origin of life. Engels believed that life was merely the manifestation of certain chemical configurations. He asserted, "Life is the mode of existence of protein bodies, and this mode of existence consists essentially in the constant self-renewal of the chemical components of these bodies."[15] When chemical conditions are favorable for the proteins to join together, protoplasm will form, then cells, and then other organisms. Engels believed scientists could produce life artificially if they could only synthesize protein.[16]

Oddly, despite Engels' materialism, he was not comfortable with the complete elimination of teleology from nature, so he resurrected a form that did not depend on a supernatural being:

> The old teleology has gone to the devil, but the fact firmly stands that matter in its eternal cycle moves according to laws, which, at a certain stage--sometimes here and sometimes there--necessarily produces the thinking mind in organic beings.[17]

Engels was not at all content with the explanation of Darwin or Haeckel that the human mind was merely the product of chance. Darwin, because he was intent on forging a naturalistic explanation for the origin of species, denied the existence of any purposeful design in nature and rejected any goal toward which evolution was striving. He wrote in 1881 that he disagreed "that the existence of so-called natural laws implies purpose."[18] He did not envisage evolution as a linear development in a specific direction with a pre-determined goal, but as a branching movement with numerous dead-ends. One of the reasons Darwin conceived of evolution in this way was that he found the idea that natural laws were predetermined by a divine will completely unacceptable, since it made God responsible for evil.[19]

Engels agreed that natural laws do not imply purpose or conscious design, and he too had no sympathy with natural theology, but unlike Darwin, he thought that evolution was moving toward a goal. He argued that it is the nature of matter to develop in the direction of a thinking being. This does not mean that thinking beings will develop everywhere, since evolution in this direction depends on the proper

conditions existing.[20] His position manifested vestiges of the Hegelian view of nature as teleological with the Idea and *Geist* as the goal of development.[21] By taking this position, Engels was rejecting the strictly mechanistic and reductionist approach to biological laws espoused by Hermann Helmholtz and Emil DuBois-Reymond. However, by no means was he reviving Hegelian idealism; his ideas seem closer to the teleomechanism of Ernst Mach or Karl Ernst von Baer, who saw the telos in biology as the result of ordered necessity rather than the product of rational purpose.[22]

On one level, Engels viewed evolution as essentially progressive, culminating in rational beings. However, on a cosmic scale, he advanced a cyclical view of evolution with "matter in its eternal cycle." Apparently by 1875-76 he had reconciled himself to at least part of Kelvin's theory, for his assessment of the prospects for human evolution on the earth was rather bleak: Some day the earth would become too cold for any life to exist on it and inevitably humans and their minds would be extinguished. However, in another time and place, life and thought would reappear just as inevitably, according to Engels.[23]

Engels' first impression of Darwin was that, in addition to having destroyed teleology, he had demonstrated historical development in nature. Despite the fact that Kant and Laplace in cosmology and Lyell in geology had preceded Darwin by portraying development in nature, Darwin's theory revolutionized Engels' conception of science. Just a few months before reading Darwin, Engels had written that "all sciences are historical which are not natural sciences."[24] After Darwin, Engels would emphasize that natural science is also historical and this allowed him to more easily portray Marx as a scientist akin to Darwin.

Natural Law and Social Law

There is no doubt that Engels was a determinist in human affairs and believed that society was ruled by laws analogous to those holding sway in the natural realm. Freedom, for Engels, consisted not in emancipation from deterministic laws, but in rationally manipulating these immutable and ineluctable laws of nature and society. Thus scientific and technological advances were a prerequisite for freedom, since to

be free, decisions would have to be based on knowledge and the ability to predict the consequences of actions. It would be a mistake, however, to assume, as some scholars do, that since Engels compared social laws with natural laws, he was thereby reducing social laws to natural laws or applying natural laws to society.[25] Engels consistently denied that he was doing this, and his treatment of evolutionary theory clearly proves his point.

Unlike Marx, Engels used the term "natural law" to refer to economic and social laws long before Darwin published *Origin*. In 1844 he referred to the economic law of supply and demand as a "pure natural law, not a law of the mind (*Geist*)," which, Engels claimed, produced periodic economic crises. He explained that it is a natural law because it operates independently of human consciousness. The law could be set aside if humans would produce consciously rather than according to chance. Thus, although he used the term natural law, he did not mean that it was ineluctable, except within certain conditions.[26]

Within the framework of particular contexts, though, social laws operate with iron necessity, according to Engels. The law of the centralization of property was immanent in private property and could only be circumvented through the abolition of private property.[27] The reaction of workers to their demoralizing circumstances in England was the inevitable consequence of their treatment by the bourgeoisie.[28] Because of his deterministic view of society, Engels claimed it was easy to prophesy a revolution for England. That the English bourgeoisie would be overthrown was "as certain as any mathematical or mechanical law."[29]

In the 1870s Engels explained more fully his position on natural laws. He argued that they were both eternal and historical. After asserting that natural laws are eternal, Engels continued, "All true knowledge of nature is knowledge of the eternal, infinite and therefore essentially absolute."[30] This does not seem to square at all with his statement earlier in *Dialectics of Nature*: "*The eternal natural laws* are being transformed ever more into historical ones." This latter statement sounds as though he was remarking on the history of science with the introduction of the Kant-Laplace cosmology, uniformitarian geology, and Darwinian biology. However, the example

he gave of historical natural laws belies this. He explained that it is an eternal natural law that water is liquid at zero to one hundred degrees Celsius. However, this law only applies if water, the given temperature, and normal pressure are present, and thus there are many places in the universe where it cannot apply. Thus a historical natural law is one that has validity only within certain conditions (and thus almost all natural laws are historical). Engels' position here is consistent with his use of the term natural law in 1844 to refer to economic laws, as well as with Marx's use of the phrase "historical natural laws" after 1860 to refer to social and economic laws.

In *Anti-Dühring* Engels does not clearly distinguish between natural and social laws, and this has undoubtedly led to much confusion in interpreting Engels' position on this matter. He clearly affirmed Marx's view that the laws of political economy differ in each stage of historical development. They are historical laws valid only under certain conditions.[31] However, he seemed to regard natural laws as eternal and implied in *Anti-Dühring* that humans are eternally subject to natural laws:

> Freedom does not consist in the illusory independence from natural laws, but rather in the knowledge of these laws and in the possibility this gives of making them operate in a planned way to definite ends. This is valid with respect to the laws of external nature, as well as to those which govern the physical and mental being of men themselves--two classes of laws that we can separate from each other at most only in concept, but not in reality.[32]

Engels never explained his view on the historicity of natural laws in *Anti-Dühring* and this statement does not seem congruent with his earlier view. Certainly his contemporaries would have understood natural laws to mean laws valid for all time.

In the above passage, Engels could not have stated more clearly that there are inescapable laws governing not only the non-human, but also the human realm. He rejected any mind-body dualism, so laws apply to all facets of human existence, not just physical life. However, it is important to note that Engels does not thereby claim that the laws of nature are applicable to society. He only claims that both operate with the same kind of necessity. This also holds true of Engels' other statements

comparing natural and social laws: "The forces effective in society function just like the forces of nature: blindly, violently, [and] destructively, as long as we do not recognize them and do not reckon with them."[33] That natural and social laws function in the same manner does not imply that the same laws rule in both realms.

Indeed Engels specifically denied that laws applying to animals could be applicable to human society. Based on his dialectical law that quantitative change produces qualitative distinctions, Engels argued that there is a qualitative difference between humans and animals, despite their close similarity. The chief discrepancy is not physical or even mental, but rather economic. "The essential difference between human and animal society is that, at most, the animals *collect*, while humans *produce*." Engels argued that this disparity makes it impossible to apply identical laws to animals and humans.[34] Darwin, on the other hand, continually stressed the continuity between animals and humans, and his *Descent of Man* (1871) is largely an exercise in applying natural laws to humans.

At times Engels implied, though, that despite the qualitative difference between humans and animals, humans were still bound in present society to some of the laws of the animal realm. Because capitalist society is still anarchical and not rationally planned, the law of the jungle still holds sway. When humans take hold of their destiny by consciously planning their society, especially their economic production, then they will elevate themselves finally above the animal realm and will become fully human. "It is the leap of humanity out of the realm of necessity into the realm of freedom."[35] Thus Engels could explain parallels between nature and present human society as a manifestation of the capitalist mode of production. In the future these parallels would evaporate. Any natural laws presently constraining human society would have no validity in communist society.

However, Engels repeatedly emphasized, and to an even greater extent than Marx, that human society is governed by a universal law of development, which is comparable to--but not identical with--the evolutionary laws formulated by Darwin. Once Engels even compared Marx's "great law of the development of history" with the law of the transformation (*Verwandlung*) of energy.[36] Of course, Engels was

referring to the law of energy conservation, but he wanted to emphasize the changes that energy can undergo, so the parallel between Marx's and Helmholtz's laws would be more striking (conservation is too static a term). He credited Marx with discovering the law of social development, which states that the mode of production and the economic stage of development form the foundation for politics, religion, law, art, etc.[37] Engels considered this law eternally valid, since even in communist society the mode of production would determine the social and political superstructure.

Despite his insistence on a sharp distinction between most natural and social laws, Engels formulated laws of dialectical development that encompassed both nature and society. He asserted, "But the dialectic is nothing other than the science of the universal laws of the movement and development of nature, human society, and thought."[38] He expounded on these ideas to a much greater extent than did Marx, who only occasionally applied the dialectic to nature. Carl Schorlemmer, a distinguished chemist and a close friend of Engels, also studied Hegel and encouraged Engels in his dialectical interpretation of nature.[39]

Engels delineated three dialectical principles or laws: (1) the conversion of quantitative change into qualitative change and vice-versa; (2) the interpenetration of opposites; and (3) the negation of the negation.[40] Engels, like Hegel and Marx, believed that these principles were valid for nature as well as history and thought.[41] He provided illustrations for these principles from mathematics, physics, chemistry, geology, and biology. The simplest example of the first dialectical principle, according to Engels, is the qualitative difference between oxygen (O_2) and ozone (O_3), which have different quantities of the same atoms, but possess quite different physical characteristics. Many other chemical compounds differ from each other only in the number of atoms, but have dissimilar properties.[42] Engels derived another example of this principle from Hegel--the conversion of water into steam through the increase of temperature.[43] The examples Engels used for the negation of the negation seem more contrived and less convincing, despite his claim that any child could grasp them. The reproduction of plants provided one of his simplest and best examples. A barley seed is negated when it grows into a stalk, but after the new seeds mature, the

stalk withers and dies. This negation of the negation produces a quantitative change, since one seed thereby produces many seeds. It can also produce a qualitative change, as organisms, such as ornamental flowers selected by gardeners, alter from generation to generation.[44]

Engels' attempts to explain biology dialectically predated his reading of Darwin. In 1858 he requested that Marx send him Hegel's *Naturphilosophie*, because he thought it might shed light on his studies in physiology. Hegel as an idealist had conceived of nature as the finite alienation of *Geist*, and Engels, since he was a materialist, rejected this aspect of Hegel's philosophy of nature. However, Hegel also viewed nature as subject to dialectical development, and thus the product of contradictions. In its outer appearance, according to Hegel, nature is contradictory to logic, but in its essence it is logical, which makes it possible to formulate natural laws.[45] It was this dialectical methodology that Engels found so appealing in Hegel.

Many of Engels' later ideas on the dialectics of nature derived directly from his reading of Hegel.[46] In 1858 he wrote to Marx that he considered cellular development a confirmation of Hegel's ideas and appealed to the dialectical qualitative leap in a quantitative series as a nice explanation for the distinction between humans and animals.[47] It is surprising that Engels did not develop his ideas on dialectical development in nature further in the decade after he read Darwin, because Darwin's theory seems to present easy avenues for dialectical explanation. However, Engels had little time in the 1860s to study natural science and most of his writings from that period were on military affairs.

In his unpublished manuscripts of the 1870s Engels tried to show that biological evolution is dialectical. However, when Engels began developing his views on the dialectics of nature in 1873, he initially dealt with physics and chemistry, purposely avoiding any discussion of biology.[48] Only in 1875 did he explain the dialectical nature of evolution. First of all, he pointed to the theory's obliteration of fixed categories, which shows that the metaphysical mode of thought with its either-or mentality is inadequate. This characteristic, of course, would be true of any evolutionary theory, not just Darwin's, since species would be more fluid than in the

Linnaean system and could contain contradictory elements. Secondly, Engels asserted that there is a dialectical contradiction between heredity and adaptation in the process of evolution. Haeckel had explained evolution as a process in which adaptation accounts for change, while heredity is static and preserves an organism's traits. This contradiction fit Engels' dialectical schema perfectly.[49] Finally, Engels identified Darwin's reliance in *Origin* on chance to account for variation as an example of the dialectical resolution of the chance-necessity contradiction.[50]

Although Engels referred to dialectical patterns in natural and human history as laws of development, many scholars deny that they are actually laws in the strict sense of the term. Jon Elster, for example, considers them "not infrequent patterns of change" rather than true laws.[51] Judging from Engels' use of the dialectic to explain evolutionary theory, it seems that these "laws" are rather vague and are of little or no use for predicting anything. One of the most important attributes of a scientific law, though, is that it predicts phenomena. Indeed Engels specifically denied that the dialectic could be utilized to demonstrate the necessary development of history; rather empirical research should show historical development and then one could explain it dialectically.[52] This is precisely what Engels did in applying the dialectic to evolution. He borrowed theories and ideas elaborated by biologists and showed how they were dialectical, whether the scientists recognized it or not. He did not use the dialectic to predict or form new theories or ideas. However, Engels did not consider the dialectic merely an organizing principle in the human mind. Rather it is inherent in nature and operates with the necessity of any other scientific law.[53]

The Struggle for Existence and Society

Both Darwin and Alfred Russell Wallace arrived at the theory of natural selection through their reading of Malthus, whose principle of overpopulation they applied to plants and animals. Despite Engels' favorable reception of Darwin's theory, he was not at all enthralled with the Malthusian element, which he considered a blemish on an otherwise solid accomplishment. Engels' antipathy toward Malthus was evident long before he ever read Darwin. In 1844 he disparaged Malthus' population

principle as "this infamous, mean doctrine, this dreadful blasphemy against nature and humanity," which is "the coarsest, most barbaric system that ever existed."[54] Engels agreed with Malthus that there is surplus population in the world, but it is not the inevitable result of reproduction outstripping the food supply. Rather it is caused by the present capitalist system with its anarchic competition, resulting in some people working longer than necessary and others unemployed. Malthus' population principle also did not take into account, according to Engels, the almost infinite ability of science and technology to increase productivity.[55] Thus, at best, Malthus' law of population was a historical law valid only for capitalist society.

Engels first explicated his views on the relationship between Malthus' and Darwin's theories in a letter to Lange, who had embraced the Darwinian theory, including its Malthusian element, and applied it to human society. Engels considered this reliance on Malthus illegitimate:

> Even upon my first reading of Darwin the striking similarity between his portrayal of plant and animal life with the Malthusian theory caught my attention. Only I concluded differently than you, viz.: that this is the highest disgrace for modern bourgeois development, that it has not yet progressed beyond the economic forms of the animal kingdom.[56]

Engels further asserted that Malthus' law, like all economic laws, is historical, not eternal, and applies only to bourgeois society.[57]

Despite Engels' complete repudiation of Malthusian economics, he wavered when confronted with Darwin's theory of natural selection based on the struggle for existence. Unlike Marx, he did not consistently criticize this element of Darwin's theory, but remained ambivalent. He was never fully content with Darwin's formulation of evolutionary theory, but he thought that the struggle for existence might have some limited validity. In a passage of *Dialectics of Nature* written in 1875, Engels characterized Darwin's theory of the struggle for existence as the translation into nature of Hobbes' *bellum omnium contra omnes*, bourgeois economic competition, and Malthusian economics. However, his point in this passage was not

so much that Darwin erred by so doing, but that those who retranslate the Malthusian element in Darwinism back into society with the confidence that it is a law of nature are making a fallacious claim.[58]

Engels' comments on Darwinism in 1875 were stimulated by an article he read on the relationship between socialism and the struggle for existence by Peter Lavrov, a Russian sociologist. In a letter to Lavrov written about the same time as the passage in *Dialectics of Nature*, Engels criticized Darwin more freely than he did in his manuscript:

> I accept from the Darwinian theory the *theory of evolution*, but accept Darwin's method of proof (struggle for life, natural selection) only as the first, provisional, imperfect expression of a newly discovered fact.[59]

Engels called into question the Darwinian struggle for existence, because he thought it was too one-sided. Engels noted that before Darwin formulated his theory, scientists such as Büchner and Vogt had emphasized symbiosis in nature, but now they saw struggle everywhere. Engels argued that there is both harmony and struggle in nature, so the struggle for existence "can only be accepted with a grain of salt even in the realm of nature."[60]

Despite Marx's and Engels' own private criticisms of Darwin for importing Malthusian economics into natural science, Engels criticized Dühring for arguing the same point. In the heat of his polemics with Dühring, Engels defended Darwin from Dühring's charge that his theory was tainted by Malthus' views. He argued:

> Now it does not even occur to Darwin to say that the *origin* of the idea of the struggle for existence is to be found in Malthus. He only says that his theory of the struggle for existence is the theory of Malthus, applied to the entire animal and plant world.

Engels claimed that the truth of the struggle for existence could be ascertained independently from Malthus, since the discrepancy in nature between an organism's abundant offspring and the small number of individuals attaining adulthood is readily apparent. The contradiction finds its solution in the struggle for existence, which,

Engels admitted, can at times be gruesome.[61] Engels' spirited defense of Darwin's theory, including the struggle for existence, in *Anti-Dühring* was widely read by German socialists, and it was not balanced by Engels' and Marx's sharper criticisms of Darwin in their correspondence and unpublished manuscripts.

Even in *Anti-Dühring*, however, Engels made it clear that Darwin's theory was not the final word on evolution. Darwin had made a significant contribution to science, but evolutionary theory was still in its early stages and further research would undoubtedly result in modifications of Darwin's theory. Engels thought Darwin ascribed too much weight to his own discovery and neglected the causes of variation in individual organisms. Further, Engels, like most evolutionists in the 1870s, esteemed Lamarck and his discoveries highly. Thus, although he never explicitly said so in *Anti-Dühring*, Engels hinted that natural selection might be a problematic aspect of evolutionary theory.[62]

In *Dialectics of Nature* Engels was more frank in criticizing Darwin. He accused Darwin of erring by conflating two distinct mechanisms of evolution under the rubric natural selection. The first form is selection through population pressure, in which the strongest survive, but, Engels added, the weakest can often exist also. The second form is selection through the ability of organisms to adapt to altered environmental conditions. In this latter case, the surviving organisms are better suited for some particular environment, but the adaptation can result in either progress or degeneration.[63] In this passage Engels, like many of his contemporaries, was confused about Darwin's use of the phrase "survival of the fittest." Darwin defined fitness according to how well adapted an organism is to its environment, not how strong or fast or large it is. These traits may at times confer a selective advantage, but that is not always the case. Also, despite his own rhetoric at times, Darwin's idea of fitness did not include any notion of progress or degeneration, since both imply some standard of judgment other than the survival of the species.

Darwin would have had little trouble refuting Engels' objection that he conflated evolution by population pressure with evolution caused by altered environmental conditions. Darwin did not see these as antithetical, since even under

altered circumstances, there could still be excess population and competition for the new niches. Thus the struggle for existence could function to select organisms both in changing and static environments.

Engels, however, denied that the struggle for existence is universal. He limited its efficacy to plants and lower animals, where overpopulation leads to competition. However, other evolutionary mechanisms, such as climatic or geographical change or sexual selection, could account for speciation without any overpopulation or struggle for existence occurring. Thus Engels allowed some room for Darwin's struggle for existence in evolution, but he could not accept it as the sole or even the most important evolutionary mechanism. He further asserted that Haeckel's evolutionary theory centering on adaptation and heredity could account for the evolutionary process without natural selection and the Malthusian population pressure. Engels apparently forgot that Haeckel's theory fully incorporated Darwinian selection and Malthusianism, though it also blended in large doses of Lamarckism.[64] Another evolutionary mechanism Engels identified is the alteration in an organism's food supply. Engels thought that new types of food would cause chemical changes in an organism by putting different chemicals into the blood stream.[65]

While Engels could tolerate the idea that there may be a struggle for existence among plants and some animals, he was incensed with those who considered human society eternally subject to the same kind of struggle. He was so riled up after reading the second edition of Büchner's *Der Mensch und seine Stellung in der Natur* (*Man and His Position in Nature*) in 1873 that he felt compelled to write a rebuttal, which broadened into a ten-year study of natural science, during which he wrote the unfinished manuscripts of *Dialectics of Nature*. Büchner had recommended radical social reforms on the basis of his conception of nature, but Engels viewed these reforms as ineffective measures and considered Büchner a dilettante in the field of economics.[66] In 1878, when Engels briefly sketched an organizational plan for his book, the refutation of social Darwinism was still a prominent feature, though Büchner was relegated to the background. Of the eleven major points his book would cover, the final one was on Darwinian politics and social theory, especially as

advocated by Haeckel and Oscar Schmidt. The tenth section was to be on Virchow's conception of the cell state.[67]

At the time he drew up this plan, Engels was closely following the controversy in Germany over the relationship between Darwinism and socialism that Virchow had provoked in 1877. Engels' good friend Schorlemmer often attended the annual meetings of the Association of German Scientists and Physicians and was present at the one in 1877 when Virchow cast suspicion on Darwinism because of its relationship to socialism.[68] When Engels learned that Schmidt was planning to deliver an address to the Association of German Scientists and Physicians at their 1878 meeting, he sent Schmidt a brief letter and a copy of *Anti-Dühring*.[69] Shortly thereafter Engels received Haeckel's book, which contained an attack on socialism on the basis of Darwinism. He confided to his friend Lavrov that he considered it his duty to answer the anti-socialist arguments of Haeckel and Schmidt.[70] Unfortunately, he never found time to do this.

The main lines of Engels' arguments against Haeckel and Schmidt, however, had been clearly delineated in Engels' previous writings. First and foremost, he declared it fallacious to try to apply the laws of animal societies to humans, since humans produce their means of subsistence, while animals merely collect them. Human production, because of its ability to produce superfluous goods, invalidates the struggle for existence and inaugurates a new form of struggle--over access to pleasure and personal development. Engels specifically denied that the class struggle was a form of the struggle for existence.[71] He criticized social Darwinists because they reduced humans to the level of animals:

> Darwin did not know what a bitter satire he wrote about humans and especially about his fellow countrymen when he proved that free competition, the struggle for existence, which the economists celebrate as the highest historical achievement, is the normal condition of the *animal kingdom*.[72]

While Engels denied the validity of the struggle for existence as an eternal natural law governing human affairs, he admitted that a struggle for existence

occurred in bourgeois society. For Engels, this was an argument against, not an apology for, capitalism. Engels described this human struggle for existence long before Darwin's *Origin* appeared in print. He depicted bourgeois society as a "war of all against all," and, paralleling Darwin's own terminology later, a "war for life, for existence."[73] In *Anti-Dühring* Engels further emphasized that the capitalist mode of production is responsible for the human struggle for existence. He asserted that the introduction of the capitalist anarchy of production destroyed the older peaceful economic stability and turned the workplace into a battlefield:

> It is the Darwinian struggle for existence, transferred from nature to society with intensified violence. The natural condition of the animal appears as the summit of human development.[74]

Since the economic struggle for existence was a product of the capitalist mode of production, Engels believed the struggle would last only as long as capitalism did. He described the future transformation from capitalist to communist society thus:

> The anarchy in social production is replaced by planned, conscious organization. The struggle for existence ceases. Thereby humans for the first time finally separate, in a certain sense, from the animal kingdom and emerge from animal conditions of existence into truly human ones. . . . It is the leap of humanity from the realm of necessity to the realm of freedom.[75]

Social harmony would replace the struggle for existence and no longer would there be any need for states or governments.[76]

In an 1875 letter responding to Lavrov's article on socialism and the struggle for existence, Engels had taken a position on the social significance of the struggle for existence antithetical to the one he presented in *Anti-Dühring*. Engels argued in his letter that the struggle for existence does not operate in capitalist society, because human economic struggle is over pleasures and luxuries, not subsistence. Evidence for this is the overproduction of goods and subsequent crises occasioned by the capitalist system. Engels followed his analysis with a rather startling statement:

> The struggle for existence can only still persist, when the producing class takes the control of production and distribution away from the class that has been entrusted with it up to now, but has now become incapable of it; and that is the socialist revolution.[77]

The assertion in this passage that the struggle for existence can exist in socialist society, but not under the capitalist system, is the exact reverse of his position articulated a couple of years later in *Anti-Dühring*. It is an odd position for Engels to take, and he probably intended it to be ironic, especially since he claimed in the same letter that the struggle for existence only had limited applicability even in nature. Yet here he made the socialist revolution somehow correspond to nature by restoring humanity to the struggle for existence that capitalism had suppressed. This strips from the capitalist system any claim of being in harmony with laws of nature, particularly those of Darwinian theory, and makes the socialist system seem more natural. However, Engels' assertion here that socialism is a better system than capitalism for promoting the struggle for existence is tongue-in-cheek and was intended to undercut claims that capitalism is in harmony with Darwinism, not as an apology for the struggle for existence.

Engels on Human Evolution

Because Engels insisted on a radical distinction between humans and animals or between society and nature; and because he opposed Malthus' economic and social views, Engels rejected the validity of Darwin's theory of natural selection through the struggle for existence as an explanation for human evolution. However, he firmly believed in the evolution of humans from animals, so he had to rely on alternative explanations for this process. Some non-Darwinian theories of evolution were widely held in the late nineteenth century, so Engels had some choice in appropriating evolutionary ideas that would be compatible with his own world view. However, Engels not only incorporated others' views into his explication of human evolution, but he also developed a unique theory of human evolution that was distinctly Marxian. He elaborated his views in an article, "Anteil der Arbeit an der Menschwerdung des

Affen" ("The Part Played by Labour in the Transition from Ape to Man"), written in 1876 as part of a larger work that he never finished. It was published posthumously in 1896 in *Die neue Zeit* and later incorporated into *Dialectics of Nature*.[78]

Engels' account of human evolution relied heavily on the Lamarckian theory of the inheritance of acquired characteristics, but also incorporated elements from environmental theories of evolution stemming from Büchner and other German scientific materialists. Engels clearly stated that physical traits could be acquired through the greater use of organs and the development of new abilities. These characteristics could be inherited by one's offspring and could thus increase from generation to generation.[79] The environment also could influence the course of evolution, though Engels did not develop this idea as fully as he might have. Indeed, despite Marx's insistence that Trémaux's environmental explanation for evolution was self-evident, Engels scoffed at the idea and never mentioned Trémaux's hypothesis in his numerous writings on evolution.[80] He had already discussed in other writings various kinds of environmental factors that might influence evolution, but in "The Part Played by Labour" he only mentioned one that he considered especially significant--alterations in an organism's food supply. Engels asserted that new forms of nourishment would alter the chemical composition of the blood and subsequently the entire physical structure of an organism. In human evolution the crucial shift was from vegetarianism to a diet including meat, which helped strengthen the body and also permitted an increase in brain size.[81] This materialistic form of evolution seems to rely on Moleschott's emphasis on the efficacy of diet and the primacy of blood chemistry, which he had articulated in his popular book, *Die Lehre der Nahrungsmittel: Für das Volk* (1850, *The Theory of Nutrition: For the People*). Feuerbach had summed up this position in his famous dictum, "Der Mensch ist was er isst."[82]

Engels' explanation as to why animals (and presumably the anthropoid ancestors of humans) would change their source of nourishment is interesting, because in it he slipped Malthusianism in the back door. Animals, according to Engels, are forced to alter their eating habits when they deplete their food supplies.

Although population pressure is not mentioned, it is clear that Malthus would have smiled in recognition if he had been able to read this. However, unlike Malthus and Darwin, Engels believed that the population pressure would lead to new kinds of adaptation to the environment (such as new food supplies) rather than to a struggle to the death.

Engels' sketch of human evolution does not include struggle, because he believed that humans were essentially social animals, not inherently competitive. This was consistent with the philosophical anthropology expressed by Marx already in his 1844 Manuscripts. In 1875 Engels wrote to Lavrov that the earliest humans had not been engaged in a free-for-all struggle. Rather they must have lived in bands and their social instincts were one of the most important factors elevating them above the apes.[83] Engels borrowed Darwin's terminology when he referred to social instincts, but he refashioned it. Darwin claimed social instincts conferred a selective advantage to their possessors in the struggle for existence, while Engels implied that human social instincts dispensed with struggle. In 1883 Engels reiterated his position that primitive human society was harmonious rather than combative:

> Where community, be it of land or of wives or of other things, exists, it is necessarily primitive, transmitted down from the animal kingdom. The entire further development consists in the gradual dissolution of this primitive community . . .[84]

It seems that Engels thereby rooted human sociality in nature, a move that is perilously similar to the social Darwinists' insistence that human competitiveness is natural.

The aspect of Engels' theory of human evolution that was most original was the idea that humans contribute to their own biological evolution through their labor. In formulating this conception he combined three important strands of Marxian thought: (1) the idea of the self-creation of humans contained in Marx's 1844 Manuscripts, (2) the notion of praxis, and (3) the materialist conception of history. This combination of ideas in Engels' 1876 essay demonstrates that he had not abandoned the humanistic concerns of the early Marx.[85]

Engels clearly set humans apart from the natural world by ascribing to humans the capacity of self-creation. Two years before composing "The Part Played by Labour" he had written that "the human is the only animal that can work itself out of its animal condition," because humans can create themselves consciously.[86] In "The Part Played by Labour" he emphasized that labor and production have shaped the course of human evolution:

> It [labor] is the first, fundamental condition of all human life, and indeed to such an extent that we must say in a certain sense that labor has created the human himself.[87]

Since human labor is a conscious, purposeful activity, Engels thus reinfused teleology into the evolutionary process, though he restricted it to human evolution. This provides another parallel between Engels' explanation of human evolution and Lamarckianism, since Lamarck's theory was teleological.

The concept of praxis is contained in the idea of human self-creation through labor, but it is also just as clearly present in Engels' delineation of the relationship between nature and humans in the evolution of humans. Engels discussed this theme in a section of *Dialectics of Nature* written shortly before "The Part Played by Labour." Engels thoroughly rejected the notion that humans, even in their biological evolution, were passive when confronting the forces of nature. As humans have learned to alter nature, they have in turn grown in intelligence. Further, they have produced new conditions of existence, which, according to Engels' environmental view of evolution, can produce new human traits.[88] He further stated:

> Only the human has succeeded in impressing his stamp on nature, not only by relocating plants and animals, but also by so altering the appearance and climate of his place of residence, and indeed, even the plants and animals themselves, that the consequences of his activity can only disappear with the general extinction of the earth.[89]

Except for the final note of pessimism, this passage could have been written by Marx in 1844.

Since Engels appealed to human production as the chief trait distinguishing humans from animals, it is not surprising that, when discussing human evolution, he focussed on how humans reached the state of being able to produce. It is at this point that the technological determinism implicit in Engels' materialist conception of history influenced his biology. In *Anti-Dühring* Engels claimed that it was a technological discovery--fire--that gave humans control of nature and thereby lifted them out of the animal kingdom.[90] In "The Part Played by Labour" Engels explained that the development of the human hand and the resultant ability to create technology was the most important factor driving human evolution forward. The assumption of an upright posture by some anthropoid ancestor of *Homo sapiens*, which Engels did not attempt to explain; was one of the most momentous events in natural history, since it freed the hand to develop in new directions. The development of the hand contributed to evolution in two ways: by the Darwinian correlation of growth, whereby a change in one organ can impact other organs in an organism; and by the resultant development of labor. Human interaction increased as they began to produce their means of existence. Among many other results, this gave rise to a need for language, and consequently, the larynx evolved. This account of the rise of language is thoroughly teleological and Lamarckian.[91] However, it is also in complete accord with Marx's view that teleology comes from human purposes, not those of a supernatural being.

After having so decisively opposed the applicability of natural selection and the struggle for existence to human evolution, Engels later admitted a role for it, albeit a strictly limited one. This volte-face occurred because of the influence of Lewis Henry Morgan, a committed Darwinian sociologist, who published *Ancient Society* in 1877. Engels' *Origin of the Family, Private Property and the State* is based largely on *Ancient Society*, which Engels characterized as an "epoch-making work" and "a decisive book, as decisive as Darwin for biology."[92] Engels made room for a small measure of natural selection in human evolution by concurring with Morgan that the transformation of the family from communal marriage to pairing marriage was caused by natural selection, since this newer family form produced a stronger race of humans.

However, Engels argued that natural selection had no effect on further transformations of the family, which were the results of social, not biological forces.[93]

Evolution and Revolution:
Socialist Tactics

Engels has sometimes been accused of mediating a shift from revolutionary Marxism to evolutionary socialism, and Darwinism is sometimes blamed for this shift. Dieter Groh identifies *Anti-Dühring* as the first clear sign of a "socialist-evolutionary Weltanschauung" that tended to replace revolution with evolution.[94] Levine argues that Engels, despite his condemnation of revisionism and his formal acceptance of the need for revolution, nevertheless prepared the way for the gradualism of the Second International.[95]

Engels' acceptance of evolutionary theory in biology, however, did not in any respect result in his adoption of evolutionary socialism. As we have seen, Engels, based on the Hegelian dialectic, continually rejected all attempts to use biology to understand human society. Engels rejected Darwin's tenet that *natura non facit saltum,* because it contradicted the dialectic.[96] Even if it were true that nature made no leaps, however, this would have no relevance to human society. According to Engels, revolutionary leaps are not only possible in society, but they are natural and inevitable.

Engels advocated his determinist view of revolution even before the Revolution of 1848 broke out. Revolutions, he asserted, are always "the necessary consequences of circumstances, which are completely independent of the will and the leading of particular parties and entire classes."[97] Just as Calvinists with their doctrine of predestination, Engels' economic determinism did not prevent him--indeed it probably stimulated him--to take an active role in the revolution when it broke out. He not only wrote in its favor, but marched into the field with the Baden insurrectionaries to battle the forces of reaction.

Engels' advice to the German socialist leaders to use parliamentary means for the present did seem gradualist at times. He wrote to Bebel in 1891 that it was

premature for socialists to take power immediately, though in eight or ten years it would probably be feasible:

> Then our entrance into power is entirely natural and develops smoothly--relatively . . . Therefore I hope and wish, our splendid, sure development progressing with the tranquility and inevitability of a natural process, remains in its natural course.[98]

However, Engels only favored "tranquility" until such a time as the revolution could succeed, and he had no illusions that the revolution could be non-violent. In 1889 he wrote to Gerson Trier, "That the proletariat cannot conquer its political power, the only door into the new society, without violent revolution, on this we are agreed." However, he continued, a revolutionary needs to be prepared to use any means--violent or peaceful--that will lead to that goal.[99]

Thus Engels' theoretical commitment to revolution remained an integral part of his ideology long after he had synthesized evolutionary theory into his world view. It was not Darwinism, but the practical political and military situation in late nineteenth-century Germany that caused Engels to urge caution to his socialist colleagues and made him sound gradualist at times. Through his military studies he had become convinced that the age of manning the barricades had passed, since modern military technology gave the government in power an almost invincible preponderance. Thus he considered his and his contemporaries' task to be the organization of the working class to create a mass party capable of overthrowing the government.[100]

Dialectics of Nature and *Anti-Dühring*--though the former remained unfinished--were intended as works to imbue the socialist party with Marxian theory and rescue it from false doctrines that were gaining currency. The former began as a project to refute the Darwinian socialism of Büchner, and both of Engels' works opposed reformism. Since Marx and Engels in 1875--two years after Engels began writing *Dialectics of Nature*--objected to the compromises Bebel and Liebknecht made to fuse their own socialist organization, the Verband deutscher Arbeitervereine (League of German Workers' Societies), with the Lassallean Allgemeiner deutscher

Arbeiterverein (General German Workers' Society), it seems clear that Engels' evolutionary views did not necessarily push him to reformism or accomodation with non-revolutionary socialism. During the time that Bismarck persecuted the socialist party with his Anti-Socialist Law from 1878 to 1890 it was clear that the socialist party did not enjoy the mass support it needed to initiate a revolution. Therefore, propaganda was the order of the day and Engels--especially in *Anti-Dühring*--forged a complete world view to captivate the masses and unify them in preparation for the coming revolution. Biological evolution was one facet of this world view that found a special resonance with many members of the socialist movement.[101]

Conclusion

While Engels has sometimes been accused of having replaced the Hegelian dialectic with biological evolution, it seems more accurate to view his ideas as a synthesis of Hegel and Darwin into a more comprehensive world view.[102] Of course, he was very selective in borrowing elements from each thinker. Furthermore, his use of the Hegelian dialectic, which he was already applying to nature before Darwin's theory was published, strongly influenced the way he viewed evolution. His acceptance of biological evolution, however, had little or no impact on his conception of the dialectic, though it did provide him with further examples of it.

Engels appealed to evolution as confirmation of his and Marx's theories, since it undermined religion and showed that change, not stasis, is natural. However, he--like Marx--distinguished between humans and animals and between natural and social laws, especially when contending against the application of the Darwinian struggle for existence to human society. He stressed far more than Marx, however, the unity of nature and human society by subsuming both under dialectical laws and by focussing on the parallelism between nature and society.

Instead of Darwinism affecting his social theory, Engels' view of society shaped his reception of Darwinism, especially in that area where biology and society overlap--the evolution of humans. He rejected the applicability of the struggle for existence to humans, even though he admitted that it might be an evolutionary

mechanism in the rest of the organic world. He also fused Lamarckian evolutionary theory with the materialist conception of history to provide a unique explanation of human evolution that centered on labor and technology as evolutionary mechanisms.

Engels' position on evolution wielded tremendous influence in the burgeoning socialist movement in Germany, especially through his popular work, *Anti-Dühring*. Both Kautksy and Bernstein, two of the most important socialist theorists and publicists in Germany during the late nineteenth and early twentieth centuries, were converted to Marxism through *Anti-Dühring* and began following the views of Engels, including those on evolution. Engels' works, however, undermined the Darwinian socialist theories of Lange and Büchner, for whom he had little respect.

ENDNOTES

1. Engels to Marx, 11 or 12 December 1859, in *MEW*, 29:524.
2. Engels, "Begräbnis," in *MEW*, 19:335; Engels also compared Marx to Darwin in *MEW*, 4:581, 16:217, 226-27; 19:333; *MEGA*, I/29:142.
3. Some recent prominent attempts claiming divergence between Marx and Engels are: Avineri, *Social and Political Thought*, 69-70; Levine, *Tragic Deception*; Carver, *Marx and Engels*. Scholars forcefully arguing for their unity include J. D. Hunley, *The Life and Thought of Friedrich Engels: A Reinterpretation* (New Haven, 1991); Rigby, *Engels*, 8, 97-102, 150-60, and passim; Stanley and Zimmermann, "On the Alleged Differences," 226-48; Hoffman, *Marxism*, 48-56 and passim, as well as all Soviet and Eastern European Marxist-Leninist scholars.
4. Marx, *Zur Kritik der Politischen Oekonomie*, in *MEW*, 13:10.
5. Marx to Moritz Kaufmann, 3 October 1878, in *MEW*, 34:346. See Gordon Welty, "Marx, Engels and 'Anti-Dühring,'" *Political Studies* 31 (1983): 286, for evidence that Marx had knowledge of the contents of *Anti-Dühring* before its publication.
6. Marx, preface to Engels' "Socialisme utopique et socialisme scientifique," in *MEGA*, I/27:541-42.
7. Engels, *Anti-Dühring*, in *MEGA*, I/27:274-75.
8. Engels, "Die Lage Englands," in *MEW*, 1:545-46.
9. Engels to Marx, 8 April 1863, in *MEW*, 30:338.
10. Engels to Marx, 21 September 1874, in *MEW*, 33:119.
11. Engels, *Dialektik*, in *MEGA*, I/26:5.
12. Engels to Marx, 21 March 1869, in *MEW*, 32:286-87.
13. Frederick Gregory, "Scientific versus Dialectical Materialism: A Clash of Ideologies in Nineteenth-Century German Radicalism," *Isis* 68 (1977):220.
14. Engels, *Dialektik*, in *MEGA*, I/26:36; I/26a:876.
15. Engels, *Anti-Dühring*, in *MEGA*, I/27:283.

16. Engels, *Dialektik*, in *MEGA*, I/26:81-82, 40.

17. Ibid, I/26:34.

18. Quoted in Etienne Gilson, *From Aristotle to Darwin and Back Again: A Journey in Final Causality, Species, and Evolution*, trans. John Lyon (Notre Dame, 1984), 86.

19. On Darwin and teleology, see Gillespie, *Charles Darwin*, passim; John F. Cornell, "Newton of the Grassblade? Darwin and the Problem of Organic Teleology," *Isis* 77 (288): 405-21; and Francisco Ayala, "Teleological Explanation in Evolutionary Biology," *Philosophy of Science* 37 (1970): 1-15.

20. Engels, *Dialektik*, in *MEGA*, I/26:107.

21. J. N. Findlay, *Hegel: A Re-Examination* (London, 1958), 267-72.

22. Timothy Lenoir, *The Strategy of Life: Teleology and Mechanics in Nineteenth-Century German Biology* (Dordrecht, 1982), 14-16, 246-48, 270-72; Norton M. Wise, "On the Relations of Physical Science to History in Late Nineteenth-Century Germany," in *Functions and Uses of Disciplinary Histories*, ed. Loren Graham, Wolf Lepenies and Peter Weingart (Dordrecht, 1983), 6-7, 12, 19-22.

23. Engels, *Dialektik*, in *MEGA*, I/26:83-87.

24. Engels, *MEW*, 13:470.

25. Ted Benton, "Natural Science and Cultural Struggle: Engels on Philosophy and the Natural Sciences," in *Marxist Philosophy*, vol. 2: *Materialism*, ed. John Mepham and David-Hillel Ruben (Brighton, 1979), 133-34. Rigby, on the other hand, agrees with my position in *Engels*, 107.

26. Engels, "Umrisse zu einer Kritik der National-ökonomie," in *MEW*, 1:514.

27. Ibid, 1:522.

28. Engels, *Die Lage der arbeitenden Klasse in England*, in *MEW*, 2:355-56.

29. Ibid, 2:252, 505.

30. Engels, *Dialektik*, in *MEGA*, I/26:134-35.

31. Engels, *Anti-Dühring*, in *MEGA*, I/27:340-41.

32. Ibid, I/27:312.

33. Engels, *Anti-Dühring* (3rd ed.), in *MEGA*, I/27:534. It is hard to see how Hunley can argue that Engels viewed laws merely as tendencies in light of his determinist language--e.g., inevitable, necessity, etc.; Hunley, *Life and Thought*, 89.

34. Engels to Lawrow, 12-17 November 1875, in *MEW*, 34:170; *Dialektik*, in *MEGA*, I/26:49-50; Benton, "Natural Science," 132; Rigby, *Engels*, 107.

35. Engels, *Anti-Dühring*, in *MEGA*, I/27:446.

36. Engels, *MEW*, 21:249.

37. Engels, "Begräbnis," in *MEW*, 19:336.

38. Engels, *Dialektik*, in *MEGA*, I/26:336; see also Ball, "Marxian Science, 252-54.

39. Martin Koch and Karl Heinig, "Friedrich Engels Beziehungen zu bedeutenden Naturforschern seiner Zeit," *Deutsche Zeitschrift für Philosophie* 34 (1986):70; see Schorlemmer's marginal notes to Engels letter to Marx, 30 May 1873, in *MEW*, 33:80-81.

40. Engels, *Dialektik*, in *MEGA*, I/26:175-82; *Anti-Dühring*, in *MEGA*, I/27:317-37.

41. Ibid, I/27:336, 494-95; *Dialektik*, in *MEGA*, I/26:48.

42. Engels, *Dialektik*, in *MEGA*, I/26:141.

43. Engels, *Dialektik*, in *MEGA*, I/26:179.

44. Engels, *Dialektik*, in *MEGA*, I/26:331-32.

45. Dieter Wandschneider, "Die Stellung der Natur im Gesamtentwurf der hegelschen Philosophie," in *Hegel und die Naturwissenschaften*, ed. Michael John Petry, (Stuttgart, 1987), 43-45; on Hegel's conception of nature, see also *Hegel and the Sciences*, ed. Robert S. Cohen and Marx W. Wartofsky (Dordrecht, 1984).

46. Anneliese Griese, "Engels' 'Dialektik der Natur.' Theoretische Konzeption und philosophiehistorische Voraussetzungen," *Deutsche Zeitschrift für Philosophie* 29 (1981):624-26; Werner Held, "Inhalt und Funktion der naturphilosophischen und naturwissenschaftlichen--besonders der biologischen und angrenzenden--Studien von Marx und Engels bei der Herausbildung der Entwicklungsbegriffe in der Geschichte der marxistischen Philosophie," (dissertation, University of Leipzig, 1983), 153-54; Jordan, *Evolution*, 98-99.

47. Engels to Marx, 14 July 1858, in *MEW*, 29:337-38.

48. Engels to Marx, 30 May 1873, in *MEW*, 33:81

49. Engels, *Dialektik*, in *MEGA*, I/26:47-48.

50. Ibid, I/26:139, 141.

51. Elster, *Making Sense*, 40; see also David McLellan, *Friedrich Engels* (NY, 1977), 90-91. Hunley argues that Engels construed laws merely as tendencies in *Life and Thought*, 89.

52. Engels, *Anti-Dühring*, in *MEGA*, I/27:330.

53. Engels, *Dialektik*, in *MEGA*, I/26:48.

54. Engels, "Umrisse," in *MEW*, 1:518, 500-01. On Engels and Malthus, see John M. Sherwood, "Engels, Marx, Malthus, and the Machine," *American Historical Review* 90 (1985):837-65.

55. Engels, *Lage*, in *MEW*, 2:311; "Umrisse," in *MEW*, 1:517.

56. Engels to Lange, 29 March 1865, in *MEW*, 31:466.

57. Ibid.

58. Engels, *Dialektik*, in *MEGA*, I/26:49.

59. Engels to Lawrow, 12-17 November 1875, in *MEW*, 34:169.

60. Ibid, 34:169.

61. Engels, *Anti-Dühring*, in *MEGA*, I/27:272.

62. Ibid, I/27:273-74, 277.

63. Engels, *Dialektik*, in *MEGA*, I/26:124.

64. Ibid, I/26:124. Darwin's own theory also contained some Lamarckian elements.

65. Ibid, I/26:92-93.

66. Ibid, I/26:5, 11.

67. Ibid, I/26:173-74.

68. *MEGA*, I/26a:585.

69. Engels to Oscar Schmidt, 19 July 1878, in *MEW*, 34:334.

70. Engels to Lawrow, 10 August 1878, in *MEW*, 34:337.

71. Engels, *Dialektik*, in *MEGA*, I/26:49-50.

72. Ibid, I/26:83.

73. Engels, *Lage*, in *MEW*, 2:306-7.

74. Engels, *Anti-Dühring*, in *MEGA*, I/27:439.

75. Ibid, I/27:446.

76. Ibid, I/27:444-45.

77. Engels to Lawrow, 12-17 November 1875, in *MEW*, 34:171.

78. For a modern anthropological analysis of Engels' "Part Played by Labour," see Charles Woolfson, *The Labour Theory of Culture: A Re-examination of Engels's Theory of Human Origins* (London, 1982).

79. Engels, *Dialektik*, in *MEGA*, I/26:89.

80. Engels to Marx, 2 and 5 October 1866, in *MEW*, 31:256, 259-60.

81. Engels, *Dialektik*, in *MEGA*, I/26:92-93.

82. "Man is what he eats." Frederick Gregory, *Scientific Materialism in Nineteenth Century Germany* (Dordrecht, 1977), 88-92.

83. Engels to Lawrow, 12-17 November 1875, in *MEW*, 34:172.

84. Engels to Kautsky, 2 March 1883, in *MEW*, 35:447.

85. On Engels' life-long commitment to Marxian humanism, see Hunley, *Life and Thought*, ch. 7.

86. Engels, *Dialektik*, in *MEGA*, I/26:34.

87. Ibid, I/26:88

88. Ibid, I/26:22-23.

89. Ibid, I/26:82.

90. Engels, *Anti-Dühring*, in *MEGA*, I/27:313.

91. Engels, *Dialektik*, in *MEGA*, I/26:82, 89-90.

92. Engels, *Der Ursprung der Familie, des Privateigentums und des Staats. Im Anschluss an Lewis H. Morgans Forschungen*, in *MEGA*, I/29:12; Engels to Kautsky, 16 February 1884, in *MEW*, 36:109-110.

93. Engels, *Ursprung*, in *MEGA*, I/29:24, 27, 30.

94. Groh, "Marx, Engels und Darwin, 218.

95. Levine, *Tragic Deception*, 180-91.

96. Diane Paul argues that Engels retained Darwinian gradualism by minimizing the leaps in the dialectic; "Marxism, Darwinism," 120-27.

97. Engels, "Grundsätze des Kommunismus," in *MEW*, 4:372; see also Hermann Bollnow, "Engels' Auffassung von Revolution und Entwicklung in seinen 'Grundsätzen des Kommunismus' (1847)," *Marxismusstudien* 1 (1954): 91-92.

98. Engels to Bebel, 24-26 October 1891, in *MEW*, 38:189.

99. Engels to Gerson Trier, 18 December 1889, in *MEW*, 37:326-27. Hunley, *Life and Thought*, ch. 6, refutes the charge that Engels promoted reformism.

100. Hunley, *Life and Thought*, ch. 6.

101. Gary Steenson, *"Not One Man! Not One Penny!": German Social Democracy, 1863-1914* (Pittsburgh, 1981), 193-94.

102. Naccache, *Marx*, 131.

CHAPTER III

NON-MARXIAN SOCIALIST DARWINISM: FRIEDRICH ALBERT LANGE AND LUDWIG BÜCHNER

Friedrich Albert Lange and Ludwig Büchner were not only two of the earliest advocates of Darwinian theory in Germany, but were also the first Darwinians in Germany (and Lange was probably the first anywhere) to attempt a systematic application of Darwinism to social questions. Partly because of Lange's influence on Büchner and their personal contact, the social theories they developed from Darwinism were similar. Although their ideas are often discussed under the rubric of social Darwinism, it is probably more accurate to consider their views a subset of socialist Darwinism. Though they shared with social Darwinists the belief that population pressure and the struggle for existence were ineluctable natural laws influencing humans as well as other organisms, they--unlike social Darwinists--emphasized that human reason could modify and soften the struggle for existence in human society.[1] The conclusions they drew from Darwinism for society were radically different from the ideals of laissez-faire economics, militarism, and racism that dominated social Darwinist discourse in the late nineteenth century. The opposition between Lange's position and social Darwinism was so pronounced that Bebel, when he became involved in polemics with the social Darwinian biologist Heinrich Ernst Ziegler, recommended Lange's *Arbeiterfrage* as an antidote to Ziegler's attempt to disprove socialism on the basis of Darwinism.[2] Lange and Büchner demonstrated that the left was just as zealous as liberals and conservatives in appropriating Darwinism in defense of their political and social views.

The socialism of Lange and Büchner was decidedly non-Marxian and non-revolutionary and retained enough vestiges of liberalism that Franz Mehring would dispute that Lange was a socialist at all, while another scholar has called their views

"bourgeois socialism."[3] However, although neither joined the German Social Democratic Party, both considered themselves socialists and ardently worked to further the German labor movement. Büchner wrote to the editor of a socialist newspaper that the worker "must not merely be a friend and defender of his class (*Stand*), he must at the same time be a socialist."[4] In 1863 Büchner founded a workers' educational association in Darmstadt, while Lange established a consumer cooperative in Duisburg about the same time. Both participated in the left wing of the League of German Workers' Societies, and Lange was elected to the standing committee, where he became a friend and colleague of August Bebel. Lange and Büchner both joined the International Working Men's Association (First International) in 1866 and attended its Lausanne Congress in September 1867.[5]

Another reason that Lange's and Büchner's fusion of Darwinism and social theory should be considered socialist Darwinism is that their position in the socialist movement in Germany warrants it. Lange esteemed Marx and Engels highly and wrote to Engels in 1865 with the hope that closer ties might develop between him and them. Marx and Engels had nothing but contempt for Lange and his views, and they levelled caustic criticism at him and Büchner in their correspondence. Socialists in Germany, however, generally respected Lange and Büchner more highly. Bebel in his memoirs expressed admiration for Lange and considered him an ally in the League of German Workers' Societies standing committee, since he continually pressed the organization toward the left.[6] In a letter to Lange's biographer, Bebel wrote that he had "seldom known a more sympathetic person than him, a man, on whose forehead is written honesty, uprightness, and openness."[7] Many other socialists, including Bebel, Eduard Bernstein, and Wilhelm Liebknecht, spoke highly of Lange's *Arbeiterfrage*, while the *Sozialdemokrat*, the official organ of the socialist party during the period of the Anti-Socialist Law, consistently promoted it as a book of interest to socialists.[8] Even Franz Mehring, who questioned Lange's credentials as a socialist, wrote an introduction to a new edition of *Arbeiterfrage* (1910), in which he noted the important role Lange and his book had played in the German labor

movement.[9] Büchner was likewise admired by many socialists and wrote numerous articles for the socialist press, including essays in *Die neue Zeit* and *Die neue Welt.*

Lange's Malthusian Socialism

Lange is best known today as an early leader of the neo-Kantian movement, who authored *Geschichte des Materialismus* (1866, translated as *The History of Materialism*), a work critical of then-popular scientific materialism. This book earned him a professorship in philosophy, first at Zurich in 1870 and later at Marburg, where he remained until his death in 1875. Prior to his professorial career, he had been a *Privatdozent* at the University of Bonn, a *Gymnasium* teacher in Duisburg, and finally a journalist in Duisburg and Switzerland. Lange's neo-Kantianism was grounded in his epistemological skepticism of any form of metaphysics, whether idealistic or materialistic. The political reaction of the 1850s had created a climate favorable to the rise of neo-Kantianism in academic philosophy, since it cast suspicion on materialism, left Hegelianism, and Schopenhauerian pessimism, which henceforth were consigned to roles outside the academy (popular though they were). Early neo-Kantianism, while maintaining a dualism between the mechanistic phenomenal world and the idealistic world of practical affairs (noumenal realm), leaned heavily toward positivism and empiricism. Lange was no exception, declaring in 1858, "My logic is calculus of probabilities, my ethics are moral statistics, my psychology rests on physiology; in a word, I try to operate only within the exact sciences."[10]

While opposing the materialism of Büchner, Karl Vogt, and Jakob Moleschott, Lange embraced with alacrity Darwin's theory of evolution in the 1860s and also read Darwin's *Descent* soon after its publication.[11] Lange combined his interests in Darwinian science and social questions to produce *Die Arbeiterfrage* (1865, *The Labor Question*), the first book to develop a systematic social theory based on Darwinism. Thus six years before Darwin published *Descent*, Lange was already applying the struggle for existence to humans. It was also one of the earlier books in Germany promoting Darwinian theory in general, which had not received widespread attention there until 1862-63. He also corresponded with Ernst Haeckel and appreciated his biological writings.[12] Unlike most leading Darwinists in

nineteenth-century Germany--including Büchner, Haeckel, and most socialists--Lange did not see Darwinism as a scientific confirmation of materialism, nor did he emphasize the anti-religious implications of Darwinism.

Not only was Lange proficient in the fields of pedagogy and philosophy and an avid follower of developments in natural science, but he also stayed abreast of political and social issues. In September 1864 he attended the annual meeting of the Association of German Scientists and Physicians in Giessen, where he met Büchner for the first time. Though Lange opposed Büchner's philosophical materialism and publicly criticized him in *The History of Materialism*, they agreed to be comrades in the struggle for social justice.[13] His involvement in the labor movement in the early and mid-1860s immersed him in social issues. In 1865-66 he founded and edited a small newspaper, *Der Bote vom Niederrhein*, to promulgate his political and social views. One of the purposes of his paper was to foster a labor movement independent of the bourgeoisie and to advance the cause of democracy.[14]

Unlike Marx and Engels, who were ambivalent in their attitude toward Darwin and thoroughly rejected Malthusian theory, Lange wholeheartedly endorsed Darwinian theory and a slightly modified version of the Malthusian population principle. While rejecting as too inflexible Malthus' formula that food production tends to increase in an arithmetical progression, he nevertheless retained the core idea of Malthus: "The truth of the Malthusian theory consists therefore in this, that the growth of population constantly reaches the limit that the growth of the means of subsistence permits."[15] By considering the tendency toward overpopulation a natural law affecting all organisms, including humans, Lange placed the population problem at center stage. In *Arbeiterfrage* he claimed, "*The fact is, that the relationship of the production of the means of subsistence to the movement of the population comprises the most important of all social problems.*"[16] In another book on social issues he wrote, "The law of population is the alpha and omega of the social question. . . . Only with the knowledge of the law of population and its effects does one begin to understand the miserable social conditions and their source . . ."[17]

It is unclear whether or not Lange converted to Malthus' population theory as a result of studying Darwinian theory or whether he had already embraced Malthusianism from other sources. However, Lange definitely considered Darwinism a legitimation for Malthus' ideas, and he presented the human struggle for existence as a necessary consequence of population pressure.[18] Indeed the first chapter of *Arbeiterfrage* is entitled "Der Kampf um das Dasein" ("The Struggle for Existence"), and Lange discussed the struggle for existence before he ever broached the subject of Malthus' theory.

From the beginning of his book, Lange explained that the struggle for existence applies not only to plants and animals, but also to humans. He argued that

> the human race is subject to entirely the same laws as other organic beings; that also in it [the human race] lack and misery place a limit on natural multiplication, that the stronger tribe suppresses the weaker, or that wars and revolutions from time to time must decimate entire peoples, so that a period of happy expansion can again follow.[19]

He considered the struggle for existence a constant in human history that contributed to the progress of humanity both biologically and socially, because it brought about the destruction of the weaker tribe by the stronger and the less intelligent by the more intelligent.[20] However ineluctable and inevitable it may be, however, he did not think that the struggle manifested itself in the same way in every period of history. He offered a brief sketch depicting the various forms the struggle for existence had taken in different historical eras. Among the most primitive peoples, he surprisingly argued--contra his own Malthusian views--that not lack of subsistence, but predatory animals kept the human population in check. Only as humans acquired fire and tools could they defend themselves sufficiently against animals to begin spreading out and fighting among themselves for the best lands. A later manifestation of the human struggle for existence is what Lange termed the racial struggle, which he equated with European imperialism and the extinction of less developed peoples.[21]

When Lange turned his attention from history to an analysis of contemporary society, he again saw the struggle for existence in operation. He maintained "that the

distress of workers at present is nothing other than *the form of the universal struggle for existence corresponding to contemporary economic relationships.*"[22] He attributed this new phase of the struggle for existence to the separation of work from the soil, allowing capital to exploit labor through treating products as commodities. "The struggle for existence emerges through this into the form of a struggle for wages," and Ricardo's law of wages--that wages tend to sink to a subsistence level through the law of supply and demand--is only an expression of a special case of the Darwinian law.[23]

The foregoing description of Lange's social philosophy seems to differ little from the fundaments of social Darwinism. However, Lange's neo-Kantian perspective and his ethical outlook rescued him from the fatalism of which he has sometimes been accused.[24] The reason his application of Darwinian theory could produce such different results from the social outlook of Haeckel and other social Darwinists was that Lange's idealism stood in opposition to his naturalism. This was not at all an inconsistency in Lange's social philosophy, but was a conscious move on his part. Klaus Christian Köhnke has noted that Lange's goal involved "strictly segregating the world of exact inquiry from that of ethical convictions, that of science from that of *Weltanschauungen.*"[25] Natural laws, such as Malthusianism and Darwinism, were inescapable, even for humans, but human reason and ideas could mitigate their effects. The natural laws merely explained the problem and set forth the framework within which the solution could be discovered. They restricted the playing field, but did not determine what human society should be like. The solution to social problems would come in conjunction with "a complete change in the mental life of the peoples."[26] For Lange Darwinism was thus by no means a source of ethics or prescriptions for society, but rather stated a problem that required the application of human reason to overcome. Thus the social program he promoted had little or nothing to do with Darwinism, which receded into the background whenever he moved from theory to praxis.

The ultimate inevitability of the struggle for existence did not imply to Lange that we must simply learn to live in harmony with this natural law. Indeed, Lange

believed that the destiny of humanity was to oppose this natural law and to suppress it to as great an extent as possible. He explained,

> In our present writing on the labor question Darwin plays a large role, insofar as we have attempted to derive the conditions which produce the labor question from the principles developed by Darwin, without, however, viewing them as absolutely necessary ingredients of human existence.[27]

The reason they are not necessary in the human realm, Lange continued, is because humans can to a certain extent lift themselves above natural laws through purposeful action.

While often emphasizing the continuity between humanity and the rest of the organic world and stressing the applicability of the laws of nature to humans, at times he noted the distinction between humans and other species, which allows people to exercise an element of control over nature unknown to other organisms. Lange reminded his readers that in considering the social question, it is always important to remember the

> *struggle against the struggle for existence*, which is identical with the higher mental constitution of the human. This struggle may in truth be an unending process; but it has its finite goals, its peace treaties and victory celebrations.[28]

In numerous passages of his works, Lange placed human reason in opposition to natural laws and nowhere is this more apparent than in his treatment of the Malthusian population principle and the concomitant struggle for existence. In sharp contrast to nature, where profligacy and the subsequent destruction of myriads of organic beings rule the day, "Human reason knows no other ideal than the greatest possible preservation and perfection of life, which has once begun, together with the limitation of birth and death."[29] Lange indicated that although humans are eternally subject to the tendency to multiply beyond the means of subsistence, they can take countervailing measures and obviate the social misery produced by the unfettered exercise of this law. Noting that we can control the distribution of cultivated plants

and animals, he asked rhetorically why we could not control the propagation of our own species.[30] It is human ethical ideals that provide the impetus for humans to escape the laws of nature to whatever extent possible. Lange distinguished humans from other organisms, because humans cannot look indifferently on suffering and know in advance the fear of destruction. He stated,

> We desire for the human a different nature than the nature of animals, and the entire great struggling and striving of humanity has as its purpose to produce a condition in which the living, enjoying its being, lives a full life in the greatest possible perfection, and falls victim neither to a sudden destruction, nor to the slowly gnawing tooth of misery.[31]

Lange's insistence that human ethical concerns take priority over natural laws led him to dispute the social Darwinist emphasis on the necessity of social inequality. He claimed that human justice and reason were contrary to the animal nature of humans and could restrict the influence of the natural law of differentiation so important in the operation of natural selection:

> This natural law is present and will strive in every stage of human development and under all circumstances to exert itself; only its effects will be partially modified, partially absolutely abolished and through opposing effects suppressed by virtue of another natural law, which from the sympathetic living together of humans causes the ideas of equality and solidarity in progress to grow.[32]

Lange admitted that human sympathy, "the most beautiful blossom of the earthly organisms," was only manifested in small measure in contemporary society, but he held forth the hope that it would come to dominate social relations one day.[33]

Why this transition would occur he did not say, nor was he optimistic that it could be introduced suddenly through revolutionary activity. Lange's social theory--like Darwin's biological theory--was gradualist:

> Centuries may pass before the struggle for existence is transformed into a peaceful living together of the peoples of the earth; but the

> turning point of the times, the *victory of the good will for the improvement of our conditions* cannot lie in the all-too-distant future. Certainly this victory will never be a perfect one.[34]

Natural laws could never be entirely circumvented, but they could be brought under a substantial measure of control in accordance with human ethical ideals by the application of reason. In the final paragraph of *The History of Materialism* Lange also expressed his belief that a new age would dawn under the banner of a great idea and brotherhood or community would supplant egotism in economic relations.[35]

It is surprising that Lange did not think through and elaborate a comprehensive solution to the population problem. Clearly he opposed compulsory restrictions on marriage or child-bearing--which he mistakenly thought was Malthus' position--as inimical to personal freedom. In the first edition of *Arbeiterfrage* and in an 1866 article he opposed any restriction on human propagation, including voluntary abstinence, as unnatural and ineffective.[36] However, when he later discussed John Stuart Mill's proposals to solve the problem of overpopulation, he seemed to agree with Mill that voluntary self-control in child-bearing coupled with some government encouragement could ameliorate the problem.[37]

In *Arbeiterfrage* Lange amazingly circumvented all discussion of concrete steps to solve the imbalance between population growth and the food supply. In the conclusion to the first edition, he provided six suggestions for solving the labor question. The first five concerned the organization and education of workers and civil liberties. The sixth point was not a real suggestion at all, but merely stated, "Only after the attainment of these foundations [i.e., the first five points] . . . can we think about exalting humanity with consciousness and rest to a position in which the struggle for existence loses its terror."[38] Thus Lange relegated to the future any attempt to solve the population problem. The solutions he offered were only preliminary to more comprehensive ones. This accords with his view stated elsewhere that the real solution to the Malthusian equation was to increase the production of food, a task requiring a complete restructuring of society. Lange--contra Darwin and

most Darwinians--thought the increase in the food supply would lead to a decrease in the size of families, though he never specified how or why this would occur.[39]

According to Lange, in addition to competition for the means of subsistence, the struggle for existence manifests itself in another way in human society--the "struggle for privileged position." This form of struggle among humans operates in the same manner as the biological struggle for existence. It has contributed to social progress and simultaneously become milder and less brutal. Just as in the struggle for existence, many potentialities are destroyed and most people never perform at the level of their ability. This negation of human perfection is anathema to Lange and he sees it as grounds for creating greater equality in society. Although he did not believe the struggle for privileged position could ever be entirely removed and therefore believed that some inequality in society would persist, he nevertheless pressed for the elimination of class divisions by the elimination of capitalist accumulation.[40]

Lange's Malthusianism and his insistence on the inevitability of the human struggle for existence found little resonance among socialist thinkers in the nineteenth century, despite Kautsky's transitory flirtation with it before he embraced Marxism. What impressed most socialists about Lange was his sympathy toward socialism and his social program promoting workers' organizations, education, and democracy. None of these were derived in any way from Darwinism. However, Lange's attempt to ground his social theory in Darwinism paradoxically lent the aura of scientific authority to his prescriptions for society, even to those who rejected the aspects of his theory that actually were derived from Darwinian theory.

Büchner's Reform Socialism and Darwinism

Four years before Darwin's *Origin* appeared, Büchner published his sensational work promoting scientific materialism, *Kraft und Stoff* (1855, translated as *Force and Matter*), which went through twelve editions in its first seventeen years. As a young medical doctor, he had been appointed to a clinical position with teaching privileges at the University of Tübingen in 1852, but the notoriety he acquired through his book torpedoed his promising career. Materialism was anathema to the

governments of the German states, and it was not tolerated in the universities. Therefore Büchner's bold philosophical stance cost him his job, whereupon he returned to Darmstadt, his home town, to set up a private medical practice and continue writing. He was one of the most important popularizers of Darwinism and materialism in late nineteenth-century Germany.[41]

Büchner was just as zealous as Lange to incorporate biological evolution into social thought, and he applied it in a similar manner. He believed that Darwinism would revolutionize not only biology, but all fields of human knowledge. He wrote to Hermann Schaffhausen, the anthropologist who discovered the Neanderthal fossils:

> As the new conception of nature [i.e., Darwinism] gradually prevails, so with it is produced, as I believe, one of the greatest transformations and one of the greatest advances, which human knowledge has ever undergone . . . At the same time a clarity and simplicity never before suspected will enter our entire philosophy.[42]

Indeed, Büchner functioned as a forerunner for Darwin in Germany and contributed heavily to the intellectual transformation he described to Schaffhausen, both before and after Darwin published his theory.

In his attempt to explain all facets of the cosmos in materialistic terms in *Kraft und Stoff*, Büchner proposed a theory of the transmutation of species without knowledge of Darwin's ideas. Since it was only one topic among many in his book, Büchner did not provide much empirical evidence to support his theory of transmutation, and thus it remained sketchy. His theory did not resemble Darwin's, since he explained speciation as the direct result of environmental changes. He believed that in times of geological stability (such as the present era) speciation is gradual and imperceptible, but in periods of geological upheaval, speciation would proceed more rapidly.[43] When Darwin published his theory, Büchner accepted with alacrity the concepts of natural selection and the struggle for existence, though he continued to uphold the significance of environmental factors to a far greater extent than Darwin.[44] Nevertheless, he considered competition within species important and would later stress this principle when discussing human society.

Büchner, who had earlier encouraged Lange to apply natural science to philosophy, was enthused with Lange's *Arbeiterfrage* and wrote an extended review to publicize it.[45] He found the book congenial because it upheld an independent position between Ferdinand Lassalle's call for state-sponsored socialism and Hermann Schultze-Delitzsch's self-help measures, and he was also attracted by Lange's application of the struggle for existence to human society. Büchner agreed with Lange that natural laws could never be banished from human society, though their effects could be mitigated to some extent:

> In fact it seems to us certain, *that the struggle for existence rests on a natural law, which as such can never be annulled*, . . . Thus this struggle can certainly take on various forms and relationships, but never as such disappear; and mutual striving and struggles for the goods of life is and will remain a necessary element of the life of the human race under *every* form of state and society. Also it would hardly be desirable, that it might be otherwise; for all progress of the human race in the material and mental realms, yes, interest in life itself, rests more or less on these struggles.[46]

Büchner also agreed with Lange's Malthusian position, which formed the basis for their common conviction that the struggle for existence would never be entirely eliminated in human society.[47]

The greatest lack in Lange's *Arbeiterfrage*, according to Büchner, was that the solutions he offered, though ameliorative, were insufficient. He charged Lange with neglecting a crucial question: "Do humans fight the struggle for existence with *equal* or with *unequal* means?" For the remainder of his life Büchner proposed social reforms, some of them far-reaching, to sweep away political and social inequalities, so that everyone would enjoy equal opportunities in the struggle for existence. Physical and mental talents and abilities--i.e., natural biological inequalities--should determine who rises politically and socially, and competition would promote this kind of natural selection. Büchner's conception of equality harked back to the natural rights philosophies of the Enlightenment and to the subsequent call for *carrières*

ouvertes aux talents (careers open to talent). The specific means Büchner proposed in 1865 to cure social inequality was to gradually restrict or eliminate inheritance.[48]

Büchner unveiled his political agenda in greater detail and to a wider audience in 1870 in *Der Mensch und seine Stellung in der Natur in Vergangenheit, Gegenwart und Zukunft* (*Man and His Place in Nature in the Past, Present and Future*). As the title suggests, Büchner was trying to apply principles derived from nature to humans. He did this primarily by comparing society to an organism, in which "every single cell or each group of cells has its own autonomy and yet through its activity contributes its full share to the preservation of the whole." This proved to his satisfaction that the division of labor is beneficial and works for the good of all in society. However, when it came to applying the struggle for existence to human society, Büchner argued that humans did not have to meekly submit to natural law, but could exercise a measure of control over the struggle for existence through the use of reason.[49]

Reason, though, is a malleable term, so we must enquire what Büchner considered rational. Indeed his conception of how humans should use the power of reason to intervene in the struggle for existence seems contradictory, because instead of mitigating or sweeping aside the human struggle, his suggestions were calculated--as he himself admitted--to intensify human competition. He advocated a levelling of society, so that competition could be more equal and would depend on nothing other than the talents and abilities of each individual. In addition to reforming inheritance rights, which he had proposed earlier, he called for the abolition of ground rent and the communal ownership of land to create the necessary economic and social levelling.[50] Therefore it seems that instead of replacing the power of nature with the power of reason, as he claimed to be doing, he was actually trying to use reason to bring society more fully into submission to the dictates of nature and the struggle for existence.

In the 1860s and 1870s Büchner was a warm friend of the fledgling and diffuse socialist movement. He did not hesitate to promote radical political views in his writings on Darwinism and natural science. In *Der Mensch und seine Stellung* he overtly rejected monarchism and all hierarchical political structures in favor of

egalitarian republicanism, though he did not espouse the complete abolition of private property and capital; all should be allowed to acquire goods according to their own abilities through their own labor.[51] In 1876 he published an article in the socialist press as well as a book depicting the societies of social insects as models of rationality, equity, and freedom. According to Büchner, ants--the most intelligent of the social insects--form "socialist republics," while bees live in a "communist or social democratic monarchy." Büchner called on workers to imitate the ants and bees.[52]

By the time Büchner wrote *Darwinismus und Sozialismus* in 1894, his relationship to the socialist movement had altered considerably. Although he had not substantially altered his political position, he now tried to distance himself from the socialist party as much as possible. After 1878 the SPD had shifted increasingly toward revolutionary Marxism, incorporating it into their official platform in 1891. Büchner, however, completely rejected revolutionary socialism and stressed that his reforms must be introduced peacefully.[53] Gradualism had long been a leading idea in Büchner's socialism, and in 1863 he wrote to Lassalle,

> In any case it may be rather boring for those with an impatient disposition--but history only moves with lead feet. We can at most give it a jab in the ribs sometimes, but cannot force it to make a leap.[54]

However, in 1894 he also lashed out against Lassallean socialism, which he had always considered inadequate.[55] He still upheld the radical political program he had promoted earlier (restricting or eliminating inheritance and common ownership of land) and even added another proposal to it in 1894: the transformation of the state into an insurance society to protect all citizens financially against sickness, old age, accidents, and death.[56] This was an extension of the social insurance programs that Bismarck had already implemented in Germany in the 1880s.

Darwinismus und Sozialismus was not only directed against revolutionary socialism, but also against the anti-socialist rhetoric of prominent Darwinists. In 1878 Büchner had written Haeckel expressing disapproval of his anti-socialist stance in *Freie Wissenschaft*.[57] Büchner explained that social institutions often permitted the victory of the worst instead of the best in the human struggle for existence and that

it is the proper task of humans to artificially shape the struggle for existence.[58] In *Darwinismus und Sozialismus* he advocated the "*replacement of the power of nature by the power of reason*, i.e. the greatest possible equalization of the means and circumstances, under which and with which people fight." He believed that the individual struggle for existence must be supplanted by a collective struggle.[59] To the end of his life, Büchner advocated radical policies to alleviate social misery and inequality. He called for "the greatest possible equalization of the means and conditions, with which and under which every individual fights his struggle for existence or carries out his competition for the goods of life." The means to bring about this equality must be peaceful and must benefit all of society, not just one class or segment. Büchner criticized the SPD for violating these two principles.[60]

The chasm between Büchner's thought and that of most socialists was especially apparent in his 1893 review of Alexander Tille's *Volksdienst*, a book published anonymously by a "social aristocrat." Tille, in his fusion of Darwin and Nietzsche, was radically anti-socialist and advocated an aristocracy of talent, which would rise through its success in untrammelled competition under equal conditions. Tille's philosophy appealed to Büchner, who was suspicious of rule by the masses and asserted:

> Nevertheless this contest or rivalry or . . . competition is the actual driving impulse in the evolution of humans and humanity; and everything that tries to stop or restrict this free competition, must necessarily halt progress.[61]

Büchner's fundamental agreement with Tille and antipathy for the SPD program demonstrate that Büchner's socialism--though radical in its proposals--remained embedded in the liberal paradigm of a competitive society.

Conclusion

Lange's and Büchner's form of socialist Darwinism differed considerably from Marxist conceptions. They did not maintain as strict a separation between natural and social laws as did Marx and Engels and were not as optimistic that natural laws could

be transcended. Further, they considered the Malthusian population principle an immutable natural law, while Marx and Engels viewed it as a transitory social law resting on present non-socialist modes of production. Their socialist Darwinism was far more Darwinian in content than Marx and Engels, who sought to eliminate the struggle for existence in human society. Lange and Büchner simply wanted to mollify it while retaining economic competition.

However, while admitting that humanity could never entirely escape the struggle for existence, they did not succumb to the social Darwinist idea that humans should therefore meekly submit to the dictates of nature and accept inequality, poverty, and misery. They believed that humans could achieve a measure of independence from natural laws by the exercise of reason and moral ideals, and for them reason militated toward reform socialism. Their socialist Darwinism illustrates that Darwinism could be integrated into social theory in quite divergent ways and did not necessarily entail the inegalitarian social philosophies of social Darwinists. However, their application of Darwinism to society, while influential in the socialist movement, never won many adherents among intellectuals. Socialist intellectuals gravitated toward Marxism in the late nineteenth century, and Darwinian biologists and sociologists often used Darwinism to oppose socialism.

ENDNOTES

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4. Büchner to Johann Phillip Becker, 28 August 1866, IISH, Becker papers, D 324.

5. Lee, "Der bürgerliche Sozialismus," 8-12, 162-63.

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7. Bebel to Ellissen, 11 November and 16 December 1889, Archiv der

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9. Mehring, "Einleitung," 5. For more on Lange's influence on prominent socialists, see the chapters on Bebel, Kautsky, and Bernstein.

10. Köhnke, *Rise*, 95-96, quote at 151. For a good overview of Lange, see Willey, *Back to Kant*, ch. 4; Köhnke, *Rise*, 151-67; and Hans-Ludwig Ollig, *Der Neukantianismus* (Stuttgart, 1979), 15-21.

11. Lange to Theodor Piderit, 17 August 1871, in Lange, *Über Politik und Philosophie. Briefe und Leitartikel 1862 bis 1875*, ed. Georg Eckert (Duisburg, 1968), 291.

12. F. A. Lange to Haeckel, 15 October 1873 and 12 October 1874, Haeckel Haus, Best. A, Abt. 1, Nr. 2308/1-9.

13. O. A. Ellissen, *Friedrich Albert Lange. Eine Lebensbeschreibung* (Leipzig, 1894), 135; Peter Irmer, "Friedrich A. Lange--ein politische Agitator in der deutschen Arbeiterbewegung," in *Friedrich Albert Lange. Leben und Werk*, ed. J. H. Knoll and J. H. Schoeps (Duisburg, 1975), 7.

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16. Ibid, 43 (emphasis in original).

17. Lange, *J. St. Mill's Ansichten über die sociale Frage und die angebliche Umwälzung der Socialwissenschaft durch Carey* (Duisburg, 1866), 209.

18. Lange, *Die Arbeiterfrage. Ihre Bedeutung für Gegenwart und Zukunft*, 2nd ed. (Winterthur, 1870), 13, 35n.

19. Lange, *Arbeiterfrage*, 1st ed., 11-12.

20. Lange, *J. St. Mill's Ansichten*, 209.

21. Lange, *Arbeiterfrage*, 1st ed., 13-14.

22. Ibid, 54-55.

23. Ibid, 2nd ed., 11-13; 1st ed., 54-55.

24. This accusation is made by Peter Emil Becker, *Sozialdarwinismus, Rassismus, Antisemitismus und Völkischer Gedanke. Wege ins Dritte Reich* (Stuttgart, 1990), 2:392.

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28. Lange, *Arbeiterfrage*, 2nd ed., 368.

29. Lange, *Geschichte des Materialismus und Kritik seiner Bedeutung in der Gegenwart* (Iserlohn, 1866), 403-4.

30. Lange, *Arbeiterfrage*, 1st ed., 23-24.

31. Ibid, 12-13.

32. Ibid, 2nd ed., 68-69.

33. Lange, *Geschichte des Materialismus*, 404.

34. Lange, *Arbeiterfrage*, 1st ed., 170.

35. Lange, *Geschichte des Materialismus*, 557.

36. Lange, *Arbeiterfrage*, 1st ed., 24; "Sociales," *Der Bote vom Niederrhein*, 17 (19 February 1866).

37. Lange, *J. St. Mill's Ansichten*, 110-12.

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39. Lange, "Sociales."

40. Lange, *Arbeiterfrage*, 1st ed., 56-57, 61; 2nd ed., 62-63.

41. For background on Büchner, see Gregory, *Scientific Materialism*, ch. 5.

42. Ludwig Büchner to Hermann Schaffhausen, 11 July 1863, University of Bonn Library, S 2620a.

43. Büchner, *Kraft und Stoff*, 3rd ed. (Frankfurt, 1856), 79.

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53. Büchner, *Darwinismus und Sozialismus oder Der Kampf um das Dasein und die moderne Gesellschaft* (Leipzig, 1894), 47; *Fremdes und Eignes aus dem geistigen Leben der Gegenwart*, 2nd ed. (Leipzig, 1890), 197, 242-51; *Am Sterbelager des Jahrhunderts. Blicke eines freien Denkers aus der Zeit in die Zeit* (Giessen, 1898), 297.

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57. On Haeckel's position, see ch. 4.

58. Büchner to Haeckel, 21 October 1878, Ernst-Haeckel-Haus, Best. A, Abt.

1, Nr. 983/1-22.

59. Büchner, *Darwinismus und Sozialismus*, 17-18; *Am Sterbelager*, 231-34.

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CHAPTER IV
THE ROLE OF BIOLOGISTS IN THE DARWINISM-SOCIALISM CONTROVERSY IN GERMANY

Even though F. A. Lange linked Darwinism with socialism already in the mid-1860s, few biologists took notice at that time. The participants and audience for the discussion about the relationship between evolutionary and socialist theory remained rather circumscribed until 1877-79, when the debate became rather strident. On one side of the debate, socialists began emphasizing even more than previously their commitment to biological evolution and its compatibility with their world view. Two of the most important and influential books promoting socialism appeared at that time, both devoting considerable attention to Darwin's theory. Engels' *Anti-Dühring* (1878) and August Bebel's *Die Frau und der Sozialismus* (1879, *Woman and Socialism*) enthusiastically embraced the theory of biological evolution and specifically endorsed Darwin's formulation of it, complete with natural selection and the struggle for existence (though they exempted human evolution from the Darwinian mechanism).

However, while socialists were avidly supporting evolutionary theory, some prominent Darwinian biologists were busy mounting an attack on socialism. Their polemics against socialism were not motivated solely by their distaste for the socialist political and social position, though many of them did despise socialism. To be sure, the growth of the socialist movement in the 1860s and 1870s made it a more significant threat. However, above all they were incensed and embarrassed that many socialists were becoming vocal advocates of biological evolution. They feared that socialists' use of Darwinism would discredit their theory in the eyes of the public, and therefore they attacked socialism in order to rescue Darwinism from a disreputable association. Provoked by Rudolf Virchow's statements in an 1877 speech, where he

- insinuated that teaching evolution in primary and secondary schools might be dangerous because of connections between Darwinism and socialism, Ernst Haeckel and other prominent Darwinists began ridiculing the idea that Darwinism fostered socialism. To the contrary, they argued: Darwinism and socialism are incompatible and antithetical.

Biologists were no less averse to using biology as a justification for their social views than were socialists, though most of them upheld liberal--and thus anti-socialist--political views. Since they reached different political and social conclusions, some scholars have concluded that Darwinism could be applied to society in just about every conceivable way. According to this view, applying Darwinism to society was merely an exercise in reading one's own social or political presuppositions into Darwinian theory and stressing elements of the theory that seem to be compatible with them. However, this fails to take into account that the anti-socialist biologists and the socialists were not only disagreeing on social theory. Quite often, they were appealing to different biological theories to support their position. The Darwinian biologists who criticized socialism emphasized natural selection and the struggle for existence in their evolutionary theory, while Marxists favored some form of Lamarckism. The social views of the participants, therefore, often colored their receptivity to biological theories.

German biologists were not alone in appealing to nature as a model for society. In the nineteenth century it was commonplace for political and social theorists to use scientific theories and biological analogies to support their ideas. In the eighteenth century the *Aufklärung* (the German equivalent to the French Enlightenment) had exalted reason, and science stood at the pinnacle of rationality. Therefore many late nineteenth-century heirs to *Aufklärung* rationalism attempted to apply the methods, theories, and insights from the natural sciences to social thought. Social and political theorists of the Romantic movement in the early nineteenth century, in rebelling against the apotheosis of reason and the rationalization of society, supported Romanticist philosophies by appealing to analogies derived from nature; they conceived of society as an organism.[1]

In the late nineteenth century, the two strands of social thought inherited from the *Aufklärung* and Romanticism intertwined. Darwinism acted as a catalyst to synthesize the organic analogy of society with the scientific rationalization of society. Of course, Darwinism did more than just accelerate the combination, since it added new dimensions of its own to the resulting synthesis. Specific aspects of Darwinian theory--especially the struggle for existence based on the Malthusian population principle--infiltrated the conceptual framework and rhetoric of numerous important social theorists.

Aside from biologists, some of the most prominent German social theorists from 1859 until the close of the century relied heavily on Darwinian theory to buttress their views. For Albert E. F. Schäffle in *Bau und Leben des socialen Körpers* (1875-78, *Structure and Life of the Social Body*) and the sociologist Ludwig Gumplowicz in *Der Rassenkampf* (1883, *The Racial Struggle*), Darwinism was a central ingredient. The ethnographer Friedrich von Hellwald, editor of *Ausland*, a journal devoted to ethnology and promoting Darwinian theory, made the struggle for existence the chief explanatory principle for social development in his influential work, *Culturgeschichte* (1875), as did the famous geographer Friedrich Ratzel in his writings. Even Max Weber's rhetoric in 1895 was pervaded with Darwinian terminology, though this later changed. Thus numerous scholars studying the human sciences in late nineteenth-century Germany looked to biology and specifically Darwinism for models to explain social development.[2]

Thus German biologists found themselves in an intellectual milieu in which biological and social thought were closely related. If social theorists were so zealously appropriating Darwinism for their own purposes, it should not seem odd that biologists entered the discussion. They, after all, could claim to have keener insight into the intricacies of Darwinian theory than non-scientists would have and thus might be able to offer judgments of benefit to social theorists. Better knowledge of Darwinian theory, however, by no means accounts for the political positions represented by German biologists. Indeed a small number of Darwinian biologists in the late nineteenth century, including the British naturalist Alfred Russell Wallace, the

co-formulator with Darwin of the theory of natural selection, and the Swiss botanist Arnold Dodel, were socialists. Unlike their anti-socialist colleagues, they saw nothing in natural selection that conflicted with leftist political views.

The anti-socialist rhetoric of numerous German Darwinists stemmed more from their political presuppositions than from their scientific study of Darwinism. They represented the educated bourgeoisie, the *Bildungsbürgertum*, and, for the most part, Darwinian biologists upheld liberal political views. Before 1879 German liberals clung to the doctrine of laissez faire, and throughout the nineteenth century they stridently opposed the socialist movement. Though opposed to Bismarck's aristocratic conservatism in the early 1860s, liberals became more conciliatory and compromised with him in the wake of his military triumphs and the unification of Germany, which accomplished what liberals had long desired, but failed to achieve. Bismarck also wooed the liberals to his side during the 1870s through free trade policies and the *Kulturkampf*.[3] German biologists were no exception to the rightward shift within liberalism, which is most clearly illustrated in Haeckel's shift from antipathy toward Bismarck in the 1860s to his later unbounded admiration for the iron chancellor. The anti-socialist Darwinists were both influenced by and participated in the anti-socialist propaganda of Bismarck in 1878, which resulted in the Anti-Socialist Law (1878-90) and the anti-socialist fears of the 1890s, as the SPD grew in electoral strength after the lifting of the Anti-Socialist Law.

Though Darwinism was not the decisive factor shaping the political and social outlook of German biologists, we must not minimize the extent to which Darwin's liberal political, social, and economic ideas were incorporated into the presentation of his theory. His distinctive contribution to evolutionary theory, the idea of natural selection, was conceived through reading Thomas Robert Malthus' *Essay on Population*. Malthus' views justified laissez faire, the cornerstone of classical liberal political economy, and won many adherents in in the first half of the nineteenth century, including Darwin. Silvan Schweber has demonstrated that Darwin also derived his concept of divergence of characters both directly and indirectly from classical political economists' discussions of the division of labor.[4] Marx and Engels

considered Darwin's theory tainted because of the admixture of Malthusian socio-economic thought that mirrored bourgeois society. German biologists were not at all off the mark in finding social ideas in the scientific theories of Darwin. Indeed the historian of science Robert Young has declared that "Darwinism *Is* Social," and while this is hyperbole, there is a germ of truth in it.

Darwinism was not the only biological theory of evolution to rely on social ideas. Oscar Hertwig, a distinguished student of Haeckel's who became professor of anatomy at the University of Berlin in 1888, turned away from Darwinian selectionism to embrace neo-Lamarckism. He consistently upheld an organicist view of society and thought that cooperation and harmony within organisms provided a better model for society than the competitive individualism of the Darwinian struggle for existence. In his view, evolution resulted from the purposive response of organisms to their environments rather than from chance selection. Although Hertwig's adoption of a non-Darwinian evolutionary theory was not based solely on social and political considerations, the latter did exert considerable influence on his biological ideas, and he continually wove them together. Hertwig's case illustrates that liberal biologists no less than socialists could be eager to find non-Darwinian explanations for evolution, when they could not accept the social implications of the struggle for existence.[5]

Charles Darwin and Socialism

Darwin did not publicly participate in the German debate over Darwinism and socialism, which only erupted toward the end of his life. However, it was already evident from his published works that he was no supporter of socialism. Although he skirted the issue of human evolution in *The Origin of Species* (1859) and thus did not engage the issue of social development at that time, later in *The Descent of Man* (1871) he clearly spelled out the implications of his evolutionary theory for human physical and social development. He considered humans merely one species among many, subject to the same biological principles, and attempted to show that all human

traits are different from animals merely in degree, not in kind. Thus he tried to emphasize the similarities between the human and animal world.

For Darwin, then, laws from the animal realm could legitimately be extrapolated to humans, since humans are not essentially different from other organisms. He applied the Malthusian population principle, the struggle for existence, and natural selection to humans, just as he had previously applied them to non-human species. Not only this, but in *Descent* he insisted that population pressure among humans produces misery, just as Malthus had insisted:

> Natural selection follows from the struggle for existence; and this from a rapid rate of increase. It is impossible not bitterly to regret, but whether wisely is another question, the rate at which man tends to increase; for this leads in barbarous tribes to infanticide and many other evils, and in civilised nations to abject poverty, celibacy, and to the late marriages of the prudent. But as man suffers from the same physical evils with the lower animals, he has no right to expect an immunity from the evils consequent on the struggle for existence.[6]

Darwin thus justified poverty as one of several necessary evils in human society. Malthus' population theory, which had been penned to refute the leftist utopian ideals of William Godwin, resonated with Darwin. Elsewhere in *Descent* he defended the inheritance of property and the moderate accumulation of wealth, which he considered essential if civilization is to advance.[7] Darwin was, of course, the benefactor of inherited wealth, and his scientific work would have been impossible without it.

Darwin's espousal of laissez-faire economics shines through even clearer in a letter to Heinrich Fick, a law professor in Zurich. Not only did Darwin express support therein for economic competition, but he also opposed the formation of trade unions and cooperatives, which restrict competition and thus hinder progress. His economic views in this letter paralleled his biological views.[8]

Despite small forays into the province of social thought, Darwin was discreet and never placed heavy emphasis on political or economic applications of his theory.

He probably avoided such discussions because of his self-acknowledged ignorance in these areas. However, he was not averse to others engaging in this kind of speculation. When the German economist Hugo Thiel sent him a pamphlet, "Über einige Formen der Landwirtschaftlichen Genossenschaften" ("Concerning a Few Forms of Agricultural Cooperatives"), which expressed laissez-faire views, Darwin expressed deep interest in Thiel's application of evolutionary theory to social and moral questions.[9]

While Darwin could express keen interest in Fick's and Thiel's applications of Darwinism in the fields of law and economics, he could not stomach attempts to link his theory with socialism. After the dispute over Darwinism and socialism broke out in Germany in the late 1870s, Darwin wrote in a letter, "What a foolish idea seems to prevail in Germany on the connection between Socialism and Evolution through Natural Selection."[10] He applauded Thomas H. Huxley for giving Virchow a "tremendous rap on the knuckles" for having linked Darwinism with socialism.[11] When Darwin finished reading the English translation of Haeckel's *Freedom of Science*, which contained an entire chapter attacking socialism as anti-Darwinian, Darwin wrote to congratulate Haeckel on his book: ". . . you must let me have the pleasure of saying how much I admire the whole of it. It is a *most* interesting essay, and I agree with all of it."[12] He shared with Haeckel the view that Darwinism, far from supporting socialism, militated against it.

Darwinian Biologists' Attack on Socialism

The year 1877 marked the intensification, but not the beginning of, the anti-socialist rhetoric of German biologists. As early as 1869 the zoologist Gustav Jaeger, a professor at Hohenheim Academy (from 1870 on at the Stuttgart *Polytechnikum*) and one of the earliest Darwinian proponents in Germany, was lecturing against the dangers of socialism and bolstering his position with arguments drawn from biology: "On this occasion I cannot help pronouncing a condemnatory judgment from the standpoint of comparative zoology over the recently appearing communist idea." He argued that nature demonstrates the necessity of both private property and the

division of labor. Socialism, in his opinion, would lead to a degeneration in individuals and society.[13]

Georg Seidlitz, a biology instructor (*Dozent*) at the University of Dorpat, agreed with Jaeger and carried the arguments against socialism even further. He approved of D. F. Strauss' judgment in *Der alte und der neue Glaube* (1872, *The Old Faith and the New*) that social democracy is detrimental to culture, asserting that this conclusion follows quite naturally from the Darwinian theory. After all, the Darwinian theory, as Fick had demonstrated in an 1872 article, proved that the elimination of the struggle for existence would cause the degeneration of the human species. Furthermore, Seidlitz argued that one of the most important social instincts on which civilization is founded is the respect for property. The socialist program would undermine this instinct and lead to the decline of civilization. He pointed to the extermination of the propertyless American Indians in the struggle for existence as a warning against those wanting to eliminate private property.[14]

Although they did not explicitly mention socialism, some other biologists articulated social and economic ideas contradictory to socialism as corollaries of the Darwinian theory before 1877. Wilhelm Preyer, professor of physiology at the University of Jena, published a lecture in 1869 emphasizing the need for economic competition, both between individuals and between industries, for the progress of society. He considered economic inequality and poverty unavoidable in a world ruled by the Malthusian principle. In a later lecture of 1879 he harshly castigated socialism, which, if it were implemented, would be disastrous for society by eliminating competition:

> But man's greatest enemy is another man. . . The conditions of life are such that at all times one portion of mankind were, are, and will be poor and sick, another portion rich and healthy.[15]

In 1871 Alexander Ecker, professor of anatomy at the University of Freiburg, argued similarly that individualist economic competition is a necessary part of the human struggle for existence, without which human progress would be hindered.[16] By claiming that Darwinism proved the necessity of an inegalitarian, competitive

economic system, Preyer and Ecker tacitly (and later Preyer explicitly) dismissed socialism on Darwinian grounds.

By 1877, then, several biologists had made direct and indirect attacks on socialism on the basis on Darwinism. However, none of these were particularly prominent scientists at the time. The anti-socialist views of Jaeger, Seidlitz, and Ecker were only expressed in short passages of longer works or in lectures, so they never received wide circulation. Although Preyer later became famous for his contributions to physiology and developmental psychology, he was young and virtually unknown in 1869, when he published his work justifying economic competition and thus indirectly opposing socialism. His later attacks on socialism would carry greater weight, however.

When Virchow delivered his speech to the annual meeting of the Association of German Scientists and Physicians on 22 September 1877, he aroused a storm of controversy and provoked reactions from those who might otherwise have kept their opinions on socialism to themselves. Virchow, the founder of pathology, was one of the most famous and highly-regarded scientists in Germany, so his words carried weight. In the aftermath of Virchow's speech, the foremost champion of Darwinism in Germany, Ernst Haeckel, and another prominent biologist, Oscar Schmidt, assailed socialism on the basis of Darwinism. Other attacks would follow.

The portion of Virchow's message dealing with socialism was oversimplified by his opponents, who reduced it to the dictum: Darwinism leads to socialism. They misconstrued him to be drawing a simplistic cause and effect relationship between the two ideas, and they considered him a foe of both positions. As the leader of the liberal Progressive Party, Virchow was, of course, antagonistic to socialist ideology. As a scientist, he led the fight to dismiss the Neanderthal skulls as pathological examples of human remains rather than evolutionary predecessors of Europeans, thereby contradicting the claims Darwinists made about human evolution. Although his fame rests primarily on his work in pathology and his political activity, he helped found the Berlin Society for Anthropology, Ethnology, and Prehistory, helped edit an anthropological journal, and wrote numerous articles on anthropology, so he found

himself in considerable conflict with Darwinists. However, no matter how untenable one may consider Virchow's position in 1877, he did not assert that socialism was the necessary and logical consequence of Darwinism, as both supporters and detractors construed his statements (only a few contemporaries, such as T. H. Huxley, properly gave Virchow the benefit of the doubt).

Virchow was not arguing against Darwinism in his speech, but advocated restraint and moderation in presenting it to the public, especially in the schools. He did not consider Darwinism an established scientific fact, but rather a question requiring further scientific study. While admitting that Darwinism may be true, he demanded that Darwinian spokesmen curb their dogmatic, overly speculative, and opinionated utterances. His former student, Haeckel, was one of the chief offenders on this score, and Virchow's speech was partly a response to a speech Haeckel had delivered several days earlier to the same meeting. The avowed intent of Virchow's recommendations was to retain the recently-acquired freedom of science, which was threatened by a public backlash against irresponsible statements by scientists.[17]

In the midst of his plea for restraint in teaching Darwinism in the schools, Virchow offered a brief caveat linking Darwinism with socialism. He correctly expected that his audience, comprised mostly of doctors and scientists, shared his anti-socialist outlook. He intended to instill in the hearts of Darwinian proponents the fear of inadvertently abetting a dangerous movement. However, Virchow never stated that socialism was the logical consequence of Darwinism, and the preface to his remarks on the relationship between Darwinism and socialism was quickly forgotten by his opponents. He introduced his remarks on socialism by explaining that some people had made utterly ridiculous applications of his own theory that cells only come from other cells. He continued:

> I only cite this in order to show how things appear to the outside, how the "theory" expands, how our tenets return to us in a form appalling to us. Now just imagine how even today the theory of evolution looks in the head of a socialist![18]

The audience greeted this last statement with laughter, but this did not deter Virchow, who followed immediately with even stronger statements:

> Yes, gentlemen, that may appear ludicrous to many, but it is very serious, and I hope that the theory of evolution may not bring upon us all the horrors that similar theories have actually wrought in our neighboring country. Nevertheless, this theory also, if it is carried through consistently, has a particularly dubious side, and hopefully it has not escaped you that socialism has forged connections with it.[19]

It did indeed seem ludicrous to his audience, and Virchow did no favor to his cause by obliquely insinuating that the Paris Commune was the result of "similar theories." He also never elaborated on what was so dubious about the theory of evolution, other than the fact that socialists esteemed it. After he made these statements, Virchow reiterated that he was not opposed to the theory of evolution per se, but only to the premature teaching of evolution without sufficient scientific evidence. Once it became a fully established theory, Virchow would not object to teaching it to everyone, no matter how dangerous it was or who supported it.[20]

Although his comments on socialism evoked much criticism, they formed only a peripheral part of his speech and were intended as an emotionally-charged justification for his main arguments. Kurt Bayertz has pointed out that Virchow was concerned over the growth of the socialist party, which became the fourth largest party in the German Reichstag earlier that year. However, Bayertz overshoots the mark when he asserts that Virchow's reservations about teaching Darwinism in the schools flowed from a renewed urgency in combatting socialism.[21] This places too much weight on the brief passage on socialism in his speech. It is more plausible to view the speech as a response to Haeckel and other Darwinian advocates than as a response to socialism.[22] Haeckel, after all, was extremely provocative, especially in his utterances on religion, and even Darwin expressed concern that he was making intemperate remarks that would damage the very cause he wanted to promote.[23]

Most people ignored the qualifications, weak as they were, surrounding Virchow's statements on socialism and boiled them down to a simplistic equation of

Darwinism with socialism. Two sectors of German society approved of this formula. First, many conservatives rallied behind Virchow, since they vehemently opposed both Darwinism and socialism. They did not need any convincing that Darwinism was dangerous to society. A conservative, anti-Darwinian biologist, Albert Wigand, explained in his book, *Der Darwinismus: Ein Zeichen der Zeit* (1878, *Darwinism: A Sign of the Times*) that the elimination of morality caused by Darwinism produced decadent movements such as socialism.[24] The second group, the socialists, agreed with Virchow's Darwinism-socialism equation, since they adhered to evolutionary theory. As Bebel contended, if Virchow is right about Darwinism leading to socialism--and Bebel thought he was--then socialism has scientific support.[25]

The most thorough refutation of Virchow's speech came in 1878 from Haeckel, who was the most famous Darwinist in Germany and whose *Natürliche Schöpfungsgeschichte* (1868, translated as *The History of Creation*) was the most influential work on the subject in Germany during the nineteenth century. In *Natürliche Schöpfungsgeschichte* Haeckel had not attacked socialism by name, but he had enunciated socio-economic positions incompatible with socialist beliefs. Agreeing with Malthus, he believed that population pressure inevitably produces economic competition, which is indispensable in fostering progress. He further argued that the division of labor in society is the result of the struggle for existence.[26] Haeckel could not conceive of a society in which cooperation would reign:

> . . . everywhere you find an unsparing, highly embittered struggle of all against all. Nowhere in nature, wherever you may look, does that idyllic peace exist, about which the poets sing--rather everywhere there is struggle and striving to destroy one's neighbor and competitor. Passion and selfishness, conscious or unconscious, is everywhere the motive force of life. . . . Man in this respect is no exception to the rest of the animal world.[27]

Haeckel's anti-socialist perspective was thus clearly established long before he took pen in hand to assail Virchow.

His polemic against Virchow, *Freie Wissenschaft und freie Lehre* (1878, translated as *Freedom of Science and Teaching*) contained an entire chapter devoted to the relationship between Darwinism and socialism. As an ardent Darwinist and an opponent of socialism, Haeckel rejected Virchow's linkage. According to Haeckel, evolutionary theory proves the necessity of both economic inequality and competition. He assured his readers that because of this, Darwinism is thoroughly aristocratic.[28] Of course, Haeckel was referring to a bourgeois aristocracy of talent and wealth rather than the landed aristocracy, with which he had no sympathy.

After dogmatically making these political applications of Darwinism, Haeckel hypocritically urged caution in applying laws of nature to politics and called such attempts subjective and unscientific. Apparently this warning applied only to Virchow and those linking Darwinism and socialism, because Haeckel did not pay it the slightest heed, neither in *Freie Wissenschaft* nor elsewhere. Indeed in the speech he delivered to the Munich meeting of the Association of German Scientists and Physicians only four days prior to Virchow's speech, he had asserted the importance of applying evolutionary theory to all disciplines:

> Neither practical medicine, as applied natural science, nor practical political science, jurisprudence and theology, inasmuch as they are parts of applied philosophy, will henceforth be able to escape its [evolutionary theory's] influence.[29]

Never in the course of his career did he hesitate to make political and social statements, often basing them on scientific grounds. In his earliest work on evolution, he had asserted that

> the statesmen, the teachers of economics, and the historians of the future will have to study above all comparative zoology, i.e. comparative morphology and the physiology of animals, as an indispensable foundation, if they want to attain to a truly naturalistic understanding of the corresponding human phenomena.[30]

Later, Haeckel was also involved in the Krupp competition, the purpose of which was to promote applications of Darwinism to political questions. Although Haeckel

confided to Arnold Dodel that he was inexperienced and unsure in the realm of practical philosophy, including politics, one would never guess this from his public writings.[31] In one of his last books, *Ewigkeit*, he not only interpreted World War I in light of evolutionary theory, but also declared that sociology is a branch of natural science and specifically of physiology.[32]

Haeckel's political stance altered somewhat during his career, but this never affected his fundamental hostility toward socialism. The transformation his views underwent was a common occurrence in liberal circles in nineteenth-century Germany. In the 1860s Haeckel was a left-liberal whose position was similar to that of Virchow and the Progressive Party. At that time he was even more radical than Virchow, for he chided his former mentor for not being more bold in opposing Bismarck's blood-and-iron methods.[33] Bismarck's success in uniting Germany and his *Kulturkampf* against the Catholic Church tamed Haeckel's radicalism, as it did with many liberals, and Haeckel became one of Bismarck's most sincere admirers. In 1892 Haeckel was incensed when the German government snubbed Bismarck, and he invited the former chancellor to Jena, where the city and university feted him to show their appreciation.[34]

Haeckel attacked socialism with renewed zeal in the 1890s, and he appealed to Darwinism repeatedly to refute socialist tenets. He reasserted his claim that Darwinism reveals the necessity of inequality:

> Darwin's theory of selection is closely linked with the biological laws of the division of labor; it is not democratic, but rather an aristocratic principle.[35]

He believed that the kind of equality sought by the social democrats would be tantamount to a lapse into barbarism. Haeckel also commented favorably on the efforts of other biologists and writers exposing the folly of socialism on a Darwinian basis. He approved of the anti-socialist views expressed by Oscar Schmidt, Heinrich Ernst Ziegler in *Die Naturwissenschaft und die Socialdemokratische Theorie* (1893, *Natural Science and the Social Democratic Theory*), Alexander Tille in *Volksdienst*

(1893), as well as *Von Darwin bis Nietzsche* (1895, *From Darwin to Nietzsche*), and T. H. Huxley.[36]

Despite Haeckel's antipathy toward socialism, he exercised considerable influence within the socialist movement. His most popular works, *Natürliche Schöpfungsgeschichte* and *Die Welträthsel* (1899, translated as *The Riddle of the Universe at the Close of the Nineteenth Century*), along with most of his biological treatises, contained little or nothing of offense to socialists. On the contrary, they were ecstatic over Haeckel's fearless attacks on religion and idealism, and they readily adopted his scientific theories. The socialist journal, *Die neue Welt*, regularly featured Darwinian fare and published Haeckel's speech to the 1882 meeting of the Association of German Scientists and Physicians on "Die Naturanschauung von Darwin, Goethe und Lamarck" ("The View of Nature of Darwin, Goethe and Lamarck") in 1883. Haeckel's speech reinforced the materialistic world view of the socialists, and only a fleeting reference to the human struggle for existence would have caused any socialist to wince:

> And concerning the 'struggle for existence,' the most essential element of Darwinism, one really does not need any special proofs; for the entire history of humanity is nothing else [than the struggle for existence]![37]

When Haeckel helped organize the Monist League to promote his monistic philosophy, socialist sympathizers were included in its ranks, since it ostensibly eschewed party politics. In 1907 Haeckel even suggested that the socialist botanist Arnold Dodel become acting president, despite the fact that he was well acquainted with Dodel's political persuasion.[38]

Oscar Schmidt, professor of zoology at the University of Strassburg, was another Darwinist incensed that Virchow would connect Darwinism with socialism. Schmidt had already established a reputation in comparative anatomy before Darwin published his theory, and he readily adopted Darwin's theory. Later he wrote a widely-used text on Darwinism. He delivered his rebuttal of Virchow at the 1878 meeting of the Association of German Scientists and Physicians and then published

it both as a pamphlet and as an article in a popular journal. In addition to upholding inequality and competition--as Haeckel had--he argued that the inheritance of land by the aristocracy is part of the natural order. Further, he rejected all appeals to morality, asserting that natural selection "is a pure question of might," not right.[39] When Engels learned that Schmidt planned to lecture on the relationship between Darwinism and socialism, he sent Schmidt a copy of *Anti-Dühring*, since it showed how he as a socialist interpreted Darwinism. Schmidt thanked Engels for the book, which convinced him anew "that my theory of natural evolution and yours has no point of contact; to make this clear *sine ira et studio* is my task."[40]

The controversy over the relationship between Darwinism and socialism abated considerably during the 1880s, only to flare up again in the 1890s as the SPD gained in electoral strength after the lifting of the Anti-Socialist Law. Otto Ammon, who established a reputation as an anthropologist but lacked an academic position, published the first book-length refutation of socialism on Darwinian grounds, *Der Darwinismus gegen die Sozialdemokratie* (1891, *Darwinism against Social Democracy*). Four years later he wrote *Die Gesellschaftsordnung und ihre natürlichen Grundlagen* (1895, *The Social Order and Its Natural Foundations*), arguing that social stratification is the natural and beneficial consequence of the struggle for existence in human society.

One of the most zealous opponents of socialism in the ranks of biologists was Heinrich Ernst Ziegler, who taught at the University of Freiburg before being selected by Haeckel in 1898 to fill the position of Ritter Professor at the University of Jena. In 1893 he wrote *Die Naturwissenschaft und die Socialdemokratische Theorie, ihr Verhältnis dargelegt auf Grund der Werke von Darwin und Bebel* (*Natural Science and the Social Democratic Theory, Their Relationship Explained on the Basis of the Works of Darwin and Bebel*), a polemic directed against Bebel's popular book, *Die Frau und der Sozialismus*. Ziegler's intense interest in applying biology to political and social questions led him to views similar to those of Ammon, and in fact, Ziegler recommended Ammon's book, *Gesellschaftsordnung*, to his fellow scientists in a

speech to the Association of German Scientists and Physicians in 1902.[41] He agreed with Ammon "especially in his opposition to the democratic ideal of equality."[42]

Ziegler was constantly trying to draw biology and sociology closer together and indeed to subject the latter to the former. In an 1893 speech to the German Zoological Society he stressed the subjection of humans and their society to biological laws, especially to Malthusian population pressure and the subsequent struggle for existence.[43] He played a central role in organizing and judging the Krupp competition for the best scholarly answer to the question, "What do we learn from the principles of evolutionary theory in relation to the inner political development and legislation of the states?"[44] Ziegler wrote the introduction to the series *Natur und Staat*, which contained the best entries in the Krupp competition. Therein he maintained that "as little as one can separate medicine from natural science, so little can philosophy or political science be made independent from the same."[45]

Ziegler's antagonism toward socialism, especially (but not exclusively) that of the Marxian variety, manifested itself in most of his biological-sociological works. In an 1893 speech to the German Zoological Society, he criticized Bebel for his view that human nature could change in response to new social conditions, because this failed to acknowledge that evolution is an extremely slow process.[46] In 1895 he congratulated Haeckel for attacking socialism:

> I consider the social democracy of Bebel's kind, which has sworn itself to the doctrine of Marx, just as dogmatic and doctrinaire as ultramontanism. I do not believe that this party is in the position to bring us the necessary social reforms, and fear very much, that through instigating the workers it harms our industry, on which the welfare of the nation rests.[47]

In 1899 Ziegler published a review essay on Woltmann's *Darwinsche Theorie und der Sozialismus*, in which he opposed Woltmann, Marx, and Engels by arguing that social stratification has a biological, genetic basis and is not merely the product of social conditions.[48]

Ziegler's social views were written into the instructions for participants in the Krupp competition. All entries were supposed to consider two important points. The first was biological inheritance, which

> conditions the natural inclination of man, his inborn (inherited) mental and character qualities, his egoistic instincts, family instincts, social instincts, etc. . . . The consideration of the natural inheritance and the consequent difference of abilities is of great importance for the understanding of social relations.[49]

The second point to be observed was adaptation and tradition. Under this point entrants were reminded that evolution is gradual:

> A slow constant evolution of the laws and institutions, which keeps pace with the ability of people to absorb them contributes accordingly the most to the healthy progress of society (*Volk*).[50]

Ziegler gloated after the competition was over that the Marxian position--the avowed creed of the SPD--rarely surfaced in the submitted entries, while criticisms of Marxism were abundant. However, this could hardly have been a surprise, since the instructions to participants made clear that Marxist ideas were not welcome and would not be given a fair chance. Nevertheless, Ziegler had to admit that many of the entries advocated some form of state socialism, many promoting far-reaching state intervention. But he concluded that since most political positions were represented in the submitted works, no political party could claim its principles were *the* legitimate application of Darwinism to society.[51]

August Weismann, one of the most famous biologists in late nineteenth-century Germany because of his work on heredity and evolutionary theory, was much more circumspect than Ziegler or Ammon in applying biology to sociology, yet even he made one foray into the Darwinism-socialism dispute. Weismann, who led the neo-Darwinian (anti-Lamarckian) school of evolutionary theory, considered himself something of a dilettante in sociological questions, but was nonetheless intensely interested in social applications of biology.[52] When he read Benjamin Kidd's *Social Evolution* in 1894, it struck such a responsive chord that he immediately arranged to

have it translated into German.[53] In the foreword that he wrote for the German translation, Weismann pointed out that Kidd's social theory, based as it was on Darwinian biology, posited competition as the driving force behind all human progress. Weismann then concluded that Kidd's theory militated against socialism, because population pressure and the resultant competition are beneficial. Kidd advocated measures to uplift the lower classes, but his purpose--unlike that of most socialists--was to increase social competition, not to banish it.[54] Weismann also supported the sociological views of Ammon, whom he thought "excellently applied the biological principles of evolution to human society" in his *Gesellschaftsordnung*. Weismann agreed in most essential points with Ammon.[55]

The only foreign biologist to contribute substantially to the Darwinism-socialism debate in Germany was Thomas Henry Huxley, the leading British Darwinist after Darwin himself. He chided Virchow for linking Darwinism with socialism, though he expressed amazement that Virchow's speech was being construed as a refutation of Darwinism and defended him from this accusation.[56] In 1890 he published four essays on political philosophy, assailing socialism and some of its presuppositions. Two of these were published in German in *Die Zukunft* in 1894-95, and all four appeared in German in Huxley's *Soziale Essays* in 1897. Tille, well-known for his own inegalitarian social philosophy, wrote the foreword to *Soziale Essays*, noting Huxley's opposition to socialism.

In "On the Natural Inequality of Men" Huxley argued contra Rousseau that political and economic equality are rooted in natural inequality, though he did not explicitly appeal to Darwinism to support his point. Likewise, his essay "Natural Rights and Political Rights," in which he argued against the concept of natural rights in order to oppose Henry George's *Progress and Poverty*, contains no allusions to Darwinism, though it does use analogies from nature. Most of Huxley's arguments in "Government: Anarchy or Regimentation" were philosophical rather than biological, though he asserted that the chief problem with socialism is that it ignores the issue of population pressure, an important fundament of Darwin's theory. Huxley's most scathing critique of socialism was "Capital--Mother of Labour," which

carried the subtitle, "An Economical Problem Discussed from a Physiological Point of View." His treatment of socialism did not live up to the subtitle, since apart from opening his essay with an analogy from physiology, the bulk of his arguments had nothing to do with natural science.[57] Thus, in his zeal to disprove socialism, Huxley did little to actually apply biology to social questions. Nonetheless the fact that the leading Darwinist in Britain disputed socialism lent added support to the anti-socialist biologists. They would have been horrified to learn that Huxley once suggested the remote possibility (though he did not find the idea appealing or convincing) that socialism itself might be a product of natural selection.[58]

Darwinists with Socialist Sympathies

Most of the Darwinian biologists who entered the debate over the relationship between Darwinism and socialism were clearly hostile to socialism. However, among biologists there were a few of more radical political persuasion. In England Alfred Russell Wallace, co-discoverer with Darwin of the principle of natural selection, E. Ray Lankester, a close fried of Marx's in the last years of Marx's life, and Edward Aveling, whose *Die Darwinsche Theorie* (1887) was the first book in the *Internationale Bibliothek* series of the socialist publisher Dietz, all expressed socialist sympathies; so did Grant Allen, whose speech to the Fabians supporting socialism on Darwinian grounds was translated by Eduard Bernstein and published in *Die neue Zeit*. In Germany it was difficult for political radicals to advance within the university system. This factor, together with the fact that most university students came from aristocratic or bourgeois families, probably accounts for the lack of support socialists found among academic scientists in Germany.

One of the most politically radical German biologists of the mid to late nineteenth century was Karl Vogt, who spent most of his career in Geneva after being exiled from Germany for his involvement in the Revolutions of 1848-49. In 1847, the year he was called to Giessen as professor of zoology, he published *Physiologische Briefe* (*Physiological Letters*), which evinced his attraction to philosophical materialism, a position he defended even more vigorously in 1855 in a popular book,

Köhlerglaube und Wissenschaft (*Blind Faith and Science*). In his inaugural lecture at Giessen, he tried to use natural science as a means of undermining the status quo. He pointed out the revolutionary implications of scientific catastrophism, the position he upheld at the time: "The principle of revolution is common to every development of inorganic and organic nature." He supported the Revolutions of 1848 and was a delegate to the Frankfurt Parliament, where he delivered addresses in support of revolution. He argued there that scientific catastrophism validated political revolutions. After the collapse of the Frankfurt Parliament, an embittered and exiled Vogt embraced anarchism and called for the abolition of all forms of government. With the passing of time Vogt's anarchism became less and less radical. He became more sympathetic to Napoleon III, while disdaining Marx and the German social democrats.[59]

Unlike Büchner, Vogt did not believe in the transmutation of species prior to Darwin. He adopted Darwinism soon after the publication of *Origin* and wrote one of the first books in German advocating Darwin's theory and applying evolution to the human species. However, he quit using science as a justification for his political views, so he did not apply Darwinism to social and political affairs. When the Virchow-Haeckel dispute erupted, Vogt proclaimed, "Darwinism is neither socialistic nor aristocratic, neither republican nor monarchical."[60] Thus Vogt tried to silence both sides of the Darwinism-socialism controversy.

The sole German-speaking biologist publicly endorsing the socialist movement came from outside Germany, but even at the University of Zurich, where he spent his entire teaching career, Arnold Dodel faced persecution because of his political inclinations. Nevertheless, despite his bold political stance, he became a highly respected botanist who enjoyed the esteem of Darwin, Haeckel, and other biologists. He was a frequent lecturer at workers' meetings and contributed an article on Darwin to the socialist journal *Die neue Zeit*. He knew Bernstein personally and corresponded with Karl Kautsky. In addition, he published many of his political and scientific essays in *Aus Leben und Wissenschaft* (1896-1905, *From My Life and Science*) with the socialist publisher Dietz.[61]

His most famous work, *Moses oder Darwin?* (1889, *Moses or Darwin?*), an attack on the traditional Christian account of creation, went through fourteen editions by 1922. In this work, Dodel decidedly rejected the political conclusions of so many German biologists:

> It is pure fallacy and a misunderstanding, when one maintains that Darwinism is an endorsement of aristocratic politics, a glorification of class privilege; or that the theory of [natural] selection in the struggle for existence leads naturally and inevitably to approval of aristocratic distinctions within the progressing [i.e., "advanced"] nations. The opposite is correct.[62]

Like Büchner, Dodel did not think humans could ever escape from the struggle for existence, nor should they try. He saw human competition as a stimulus to progress and even asserted that "to live means to struggle." However, he did not believe that present social and political institutions allowed unfettered competition. Thus he wanted to see greater equality of opportunities and conditions so that all talented people could rise and promote progress. The human struggle for existence, in Dodel's view, is not essentially a selfish individualistic enterprise. On the contrary, the gradual replacement of animal egotism by human altruism was advantageous and brought success to humans in the struggle for existence. Dodel thought this trend in the evolutionary history of humans provided a cue concerning the present and future development of humanity. Altruism would continue to increase at the expense of selfishness.[63]

Dodel's socialist Darwinism was far closer to Büchner's than to Marxist forms. He was convinced that the Malthusian population principle applied to humans and that the struggle for existence was unavoidable. Rather than eliminate the struggle for existence--the goal of Marxists--his vision was for socialism to create greater social and economic equality so the struggle would be "fair," i.e., based on talent rather than wealth. Dodel was also no revolutionary, and his desire for peaceful change resembled Büchner's reform socialism more than revolutionary Marxism.

Unlike Dodel, Anton Dohrn remained fairly reserved concerning his political and social views for most of his career as a biologist. Dohrn was a student of Haeckel's, who founded the Naples Zoological Station to provide a research facility on the Mediterranean Sea for scientists from all over Europe. He earned the respect of many biologists, including Darwin, who contributed financially to his enterprise. As a young man in the early 1860s he--like his mentor Haeckel--belonged to the radical opposition to Bismarck, and he wrote newspaper articles to promote his political views. Upon reading F. A. Lange's *History of Materialism* in the mid-1860s, Dohrn gave up his materialist philosophy and his entire world view was transformed. He described this experience to Haeckel:

> He [Lange] completely knocked me over--I had been just like you--but I have been set free for the first time through him, have only now recognized, how immense the areas are, which are above materialism, have gained the correct ground for the first time in politics and social matters, truly--*I am now for the first time free*.[64]

By the time Dohrn had written this letter to Haeckel, he had already read Lange's *Arbeiterfrage*, which left a deep impression on him. He congratulated Lange on his application of Darwinism to social questions, which especially appealed to him as a Darwinian biologist.[65] After being won to Lange's moderate socialist position, Dohrn immersed himself in other socialist literature, including Marx's *Capital*.[66] After the 1860s Dohrn retreated from public political discourse and remained aloof from the Darwinism-socialism controversy, though he continued to express interest in political issues in his correspondence. One reason for his reticence was that he was trying to develop and maintain good relationships with politicians of all parties in the German Reichstag, to whom he often appealed for subsidies for his zoological station. In the 1890s, because of the success of his station, he became the personal friend of Kaiser Wilhelm II, as well as numerous other German political figures.[67]

Conclusion

Many Darwinian biologists in Germany joined the dispute over the relationship of Darwinism to socialism. They took for granted that biological laws could be applied to human political and economic institutions. Since humans were now considered merely one species of animal among many, they must be subject to the same principles governing the rest of the organic world. With a few exceptions, the biologists in nineteenth-century Germany applying Darwinism to society presented a united front. (Some of those breaking rank--such as Oscar Hertwig--rejected Darwinian in favor of some non-Darwinian form of evolutionary theory). Most--even those sympathetic with socialism--agreed that humans cannot escape the struggle for existence, which they considered a progressive force. Economic competition, as one facet of this struggle among humans, is therefore beneficial. They translated the Darwinian stress on variation and differentiation into socio-economic inequality and the division of labor. Thus they opposed socialism with its emphasis on greater equality and the elimination of competition.

The scientific and social thought of German Darwinists cannot be divorced, as they themselves recognized. They constantly appealed to social ideas they gleaned from Darwin. For example, Malthus' views on population pressure received widespread circulation among biologists because of Darwin's use of it in *Origin*. Other less overtly social ideas in Darwin's theory, as we have seen, also did not escape their attention. Their criticism of socialism was usually based on the selectionist aspect of Darwin's theory, on the struggle for existence among humans. This presented socialists with a challenge, for they would have to develop conceptual strategies to parry this blow.

The unity in the ranks of Darwinian biologists did not result totally from their biological studies, though these also had an impact. Their social standing made them receptive to bourgeois ideals, including classical liberal economics. Also, in their quest to become part of Germany's intellectual elite, they had to compete with others on the basis of talent and diligence. Thus they were victors in the social struggle for

existence. However, another factor ensuring greater unity was the inability of socialists and other radicals to receive professorships at German universities.

The anti-socialist polemics of leading Darwinists did nothing to dampen the enthusiasm of socialists for evolutionary theory. They continued to hold Haeckel and other Darwinists in high esteem for their scientific accomplishments, which they believed would ultimately undermine rather than support Haeckel's liberal political views. As we shall see, Bebel and Kautsky were especially important in providing explanations as to why this would be so.

ENDNOTES

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3. On German liberalism in the nineteenth century, see Sheehan, *German Liberalism*; Hamerow, *Social Foundations*, 1: 152-77; and Konrad H. Jarausch and Larry Eugene Jones, eds., *In Search of Liberal Germany: Studies in the History of German Liberalism from 1789 to the Present* (NY, 1990), esp. introduction and chs. 7-8.

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6. Darwin, *Descent*, 1:180.

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19. Ibid, 12.

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21. Kurt Bayertz, "Darwinism and Scientific Freedom: Political Aspects of the Reception of Darwinism in Germany, 1863-1878," *Scientia* 118 (1983): 302.

22. Kelly, *Descent*, 57-59.

23. Darwin to Haeckel, 21 June 1867, in *Life and Letters of Darwin*, 2:251-52.

24. Kelly, *Descent*, 60, 97.

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28. Ernst Haeckel, *Freie Wissenschaft und freie Lehre* (Stuttgart, 1878), 72-75.

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CHAPTER V

AUGUST BEBEL'S POPULARIZATION OF EVOLUTION

While Büchner and Lange had already established themselves as avid proponents of Darwinian theory in the 1860s, Bebel was occupied with other pursuits, devoting his time and energy to the organization and education of the working class. He did not even read Darwin's *Origin* until the early 1870s, though he had become acquainted with Darwin's theory earlier through reading Lange's *Arbeiterfrage*, and he knew about Büchner's popularization of Darwinism. Evolution became an integral part of his world view, though it never played the central role it did in Lange's and Büchner's works. Nevertheless, he may have contributed more to its dissemination in socialist circles than either of them. This was largely due to the immense success of his book, *Die Frau und der Sozialismus* (1879, translated as *Woman and Socialism* or *Woman under Socialism*), which went through fifty-three editions during Bebel's lifetime and was the most widely-read non-fiction book among socialists.

The publication of *Frau* marked the culmination of Bebel's development into a Marxian socialist. In the mid-1860s Bebel had been more concerned with the education of the working class than with its political organization, as he moved gradually from a liberal to a socialist political position. Before 1868-69, he was influenced more by Lange's social program than by Marx or Lassalle.[1] Because both Lange and Bebel were members of the standing committee of the League of German Workers' Societies, they had close personal contact. In his autobiography Bebel characterized Lange as "one of the kindest persons I have known, who captured one's heart at the first glance."[2] After 1868 Bebel began studying Marx's and Engels' works, and they impressed him deeply. In his 1870 manifesto, *Unsere Ziele* (*Our Goals*), Bebel cited and recommended Marx's *Capital*, *Critique of Political Economy*, and *Eighteenth Brumaire*, as well as Engels' *Condition of the Working Class in England*. His view of history by this time was thoroughly Marxist.[3] Crucial for

Bebel's intellectual development was his prison sentence from 1872-75, during which he devoted considerable time to the study of Marx's and Engels' writings, including a second reading of *Capital*, as well as perusing other works on political economy and history.[4] Bebel's interment in Hubertusburg also provided him the opportunity to study natural science, especially Darwinism. His reading list included Darwin's *Origin*, Haeckel's *Natürliche Schöpfungsgeschichte*, and two of Büchner's books, *Kraft und Stoff* and *Der Mensch und seine Stellung in der Natur*.[5] Later, his study of Engels' *Anti-Dühring* (1878) firmly entrenched him in the Marxist camp, to which he remained committed for the rest of his life.[6]

At the same time that Bebel absorbed Marxian doctrine, he also became a staunch advocate of biological evolution. Lange's *Arbeiterfrage* may have been the first significant work he read expounding on Darwin's theory. Whenever Bebel explicitly mentioned Lange or *Arbeiterfrage*, he expressed admiration and approval. In the forward to the 1895 edition of *Frau* he recommended the reading of the first two chapters of *Arbeiterfrage*, which, he claimed, would clarify the relationship between Darwinism and socialism.[7] Bebel's recommendation is astonishing in light of the fact that he diametrically opposed the central ideas of the first two chapters of Lange's book elsewhere in *Frau*. The influence of Lange, which remained with him even after he embraced Marxism, may have contributed some to Bebel's confusion over the relationship between humans and the laws of nature.

Throughout his career Bebel popularized biological evolution, incorporating it into his socialist world view and sometimes appealing to it as scientific proof against religion and in support of socialism. Evolution was an important and recurring theme in *Frau*, where he endeavored to synthesize it with his Marxian view of history and society. Despite his commitment to Marxism, he never fully overcame the influence of ideas propagated by Darwinists that were fundamentally contradictory to Marx's teachings. Residues of the views of Lange, Haeckel, and Büchner remained with him and received expression in *Frau*, especially in the earlier editions. In later editions of *Frau* some of the more blatantly contradictory passages were muted, but they were never entirely eliminated.

Many scholars characterize Bebel as a pragmatic politician with little theoretical aptitude.[8] Bebel himself denied that he was a socialist theorist, and this rings true if one compares him with Marx and Engels, who were undoubtedly his intellectual superiors.[9] However, such a view ignores the opinion of Bebel's contemporaries and underestimates the importance and influence of his ideas. Marx and Engels considered him a reliable ally with "theoretical clarity."[10] Karl Kautsky, the most influential theoretician in the Second International after Engels, trusted Bebel's judgment in theoretical matters and characterized him as a "peculiar mixture of French revolutionary passion and English sobriety with a distinctive theoretical mind."[11] Lenin believed that "Bebel embodied in his development and his political activity an entire historical period of the life not only of German, but also of international social democracy."[12] Bebel rejected the notion that pragmatic politics could be divorced from socialist principles: "As soon as the question of principles is pushed to the background by our practical activity, or is perhaps simply denied, the party loses the firm ground on which it stands, and becomes a flag that is blown around by the wind."[13]

Whatever one's opinion of Bebel's contributions to socialist theory may be, there can be no doubt that he was one of the most important disseminators of socialist doctrine in the late nineteenth and early twentieth centuries. Bebel's *Frau* played a key role in propagating socialist theory, and not only because of its popularity. *Frau* was far more than an examination of women's position in society from a Marxian standpoint. It contained a complete picture of Bebel's world view, including significant glimpses of a projected future socialist society. Bebel repeatedly revised *Frau*, including revisions in 1883 and 1891 to incorporate Engels' views in *Anti-Dühring* and *The Origin of the Family, Private Property and the State* respectively.[14] Eduard Bernstein called Bebel's book "epoch-making" and claimed that it had a greater propagandistic effect than any other socialist writing in the late nineteenth century.[15]

Darwinism as Support for Socialism

Bebel continually emphasized the importance of educating the working class about natural science and believed that such knowledge would provide weapons for attacking the status quo and transforming society.[16] In 1868 he requested Büchner to give copies of his new book on Darwinism to all German workers' associations.[17] He considered Darwinism a revolutionary science, because it confirmed the transitoriness of present conditions: "Nothing is 'eternal,' neither in nature nor in human life; only fluctuation and change is eternal."[18] In a speech to the Reichstag in 1878 he alleged that scientists were one by one moving closer to socialism, and further, "all of modern science (*Wissenschaft*) plays into our hands [and] serves our goals, [indeed] must serve them." Bebel then appealed to Darwinism as especially conducive to socialism. After alluding to Haeckel's rebuttal of Virchow's insinuation that Darwinism advances socialism, Bebel continued:

> Gentlemen, according to my view Professor Haeckel, the resolute representative of the Darwinian theory, because he does not understand social science, actually has no idea of the fact that Darwinism is necessarily beneficial to socialism, and conversely socialism must be in harmony with Darwinism, if its goals should be right. . . . And thus it is similar in other areas of modern science, which go hand in hand with us, whose theories and consequences we acknowledge out of conviction and the knowledge of which we seek to disseminate and popularize.[19]

This speech shows how much of an impression scientism and biologism had made in socialist ranks.

In a later Reichstag speech Bebel maintained that his book, *Frau*, was based on Darwinian theory.[20] In *Frau* Bebel reiterated his agreement with the position popularly attributed to Virchow that Darwinism furthers socialism, and stated, "Darwinism is, like every real science (*Wissenschaft*), an eminently democratic science." He argued that socialism was a logical consequence of the Darwinian theory and that the Darwinists who were disputing this deduction, such as Haeckel, Oscar

Schmidt, and Friedrich von Hellwald, were influenced by class considerations, fear, or other base motives.[21] Although Darwinists were ignorant of social science and socialism, Bebel maintained that socialist theorists had studied not only social science, but also Darwinism, and were thus on a higher level than the anti-socialist Darwinists.[22]

Another way that Darwinism served the socialist cause was by destroying one of the props of the status quo--religion. Bebel, who was intensely anticlerical and waged a life-long campaign against religion, found the anti-religious implications of evolution especially appealing.[23] He and his socialist compatriots saw science and religion as antagonistic disciplines and looked forward to the day when the former would entirely supplant the latter. In the meantime, they would wage war on the side of science.

Bebel divulged his hostility to religion by translating a book attacking Christianity from French to German, as well as by speaking and publishing pamphlets of his own opposing Christianity and religion in general. He confided to Kautsky that the purpose of one of his pamphlets, *Die Mohamedanisch-Arabische Kulturperiode* (1884, *The Mohammedan-Arabian Period of Culture*), was to wipe out Christianity.[24] In this pamphlet, as well as in the book he translated, there is no explicit discussion of evolution, but both clearly express the idea that religion is the result of ignorance concerning nature; thus science is the proper antidote for religion. According to Bebel, "The religious ideas hang together in the closest way to the knowledge of nature."[25] In an 1872 Reichstag speech Bebel contrasted religion and science, claiming that both Catholicism and Protestantism stand in

> contradiction to the most modern principles themselves, just as to actual science. . . . A man who . . . has acquainted himself with the researches and results of recent science, cannot possibly still believe in religious dogma . . . All religious dogma stands in contradiction to sound reason and science.[26]

Evolutionary theory, of course, belonged to the "recent science" to which Bebel was alluding.

Elsewhere in his writings, Bebel explicitly appealed to evolutionary theory as a refutation of religion and a prop for atheism. In *Christentum* he wrote:

> But I have occupied myself a little with cultural history and natural science and have thereby found, that for a brain capable of thinking and somewhat familiar with the research and discoveries of natural science, it must be quite difficult to believe in Christianity as the "best and most perfect." The facts alone, which recent natural science has established in an irrefutable manner about the origin and age of the earth, [and] about the origin and evolution of humans, remove from Christianity the ground on which it stands, and bring it down.[27]

Bebel recommended Haeckel's, Büchner's, and Vogt's books as works scientifically demonstrating the untenability of religion, though he lamented that Haeckel and other Darwinists were not fully atheistic, which Bebel considered the only position consistent with their scientific evidence and theories.[28] What he especially appreciated about evolutionary theory was that it provided an explanation for the origins of organisms without resort to a creator. In *Frau* he stressed that science now provided a natural explanation of the creation and evolution of humans, so all supernatural explanations are invalid.[29]

Education and the enlightenment of the masses were Bebel's solutions to the ills of religious "superstition," and evolution and natural science would play a prominent role in this. During the *Kulturkampf* Bebel called on the state to strip control of education from religious institutions and to increase educational expenditures; by these means rather than through religious persecution, Catholicism could be stamped out.[30] He later elaborated, "The school must become a secular institution, and, in order to remove the students from even the private influence of the clergy, the curriculum must be directed toward the highest enlightenment of the students about the essence of religion and the church, [and] about the position of humans in and to nature."[31] The latter point is a not-very-thinly-veiled reference to the teaching of evolution. Bebel, like Haeckel and many other Darwinists, hoped to

see the day when natural science and particularly evolutionary theory would replace all religious instruction.[32]

Confusion over Natural and Social Laws

The course of Bebel's intellectual development diverged significantly from that of Marx and Engels, and this had tremendous implications for his conception of the relationship between natural and social laws. Marx and Engels had both embraced left Hegelianism as young men and then moved to dialectical materialism. Bebel, however, had little understanding of philosophy and was influenced by scientific materialism at the same time he embraced Marxism. Already in 1870 Bebel was using the Marxian language of historical materialism and stressing the lawful development of human society. He repeatedly referred to social development as "natural" and viewed each stage of society as the necessary and unavoidable consequence of the previous stage of development.[33] When Bebel grappled with Darwinism a few years later, he accepted its depiction of the subjection of nature to natural laws as confirmation for his view that laws also govern all phenomena in the social realm. Both nature and society were under the sway of immutable and ineluctable laws.[34] Because of this, Bebel saw Marx's and Darwin's achievements as parallel:

> Now one may think as one likes about Marx and Engels, but one thing is certain: What Darwin [was] for natural history, what Darwin established with reference to the laws which govern the evolution of organisms, Marx has accomplished for human society and its institutions.[35]

Whether nature and society were ruled by the *same* laws, though, is a different question, for which Bebel provided two contradictory answers--one consistent with the Darwinian emphasis on the close relationship between humans and other animals or between nature and society; and another based on Marx's and Engels' sharp distinction between humans and the rest of the animal world.

Just as Engels considered both nature and society subject to overarching laws of dialectical development, Bebel pointed to a unitary law of development in both

realms. In the midst of a discussion of biological evolution, he asserted that "the laws of evolution are also valid for society."[36] Bebel, however, never referred to this evolutionary law as dialectical and placed little emphasis on the dialectical laws explained by Engels. Though he was heavily influenced by *Anti-Dühring*, in which Engels expounded the dialectic, he did not seem to consider it particularly important.[37] Even though he formally defended the Hegelian influence in Marxism against those socialists wanting to replace Hegel with Kant, his writings evince little or no concern with Hegel or the dialectic.[38]

Bebel's insufficient grasp of the Marxian dialectic may have contributed to his openness to carrying biological explanations into the social realm.[39] In every edition of *Frau* he quoted with full approval the Darwinist who wrote:

> *The human may no longer view himself as an exception from the laws of nature, but rather finally begins to seek lawfulness in his own actions and thoughts and strives to lead his life according to the laws of nature. . . . Politics, morality, principles of law, which are even now nourished from all possible sources, will be fashioned only in accordance with the laws of nature.*[40]

Like most Darwinian biologists, Bebel often stressed the unity of humans with nature and made it clear that the laws governing biological evolution were as applicable to humans as they were to all other organisms:

> Our natural scientists should acknowledge that the laws of their science are also fully applicable to humans. Inheritance and adaptation are valid for humans just as for every other natural being. Since the human is no exception in nature, so must the theory of evolution also be applied to him . . .[41]

While this latter passage could be interpreted as referring exclusively to the physiological nature of humans and not to the social side of human existence, in other places Bebel forthrightly applied Darwinian principles to social life. In a passage remarkably reminiscent of Lange's *Arbeiterfrage*, Bebel argued that the reason talented and capable women do not develop to their full potential and succeed in

present society is because of restrictions placed in their way. Women's potential is analogous to that of myriads of seeds produced by plants that are never able to develop because of unfavorable external conditions. Bebel then added, "The same laws as those in nature are valid in human life," thus clarifying that he was not just using an analogy. This discussion is obviously influenced by Lange's concept of the struggle for privileged position, which was a conscious application of Darwin and Malthus to social experience. It is not clear in this instance, however, whether Bebel viewed these laws of nature as eternally valid for humans or whether they were only in force under present conditions; for he slipped the word "today" into this explanation: "Today it is in the human world as in the plant world."[42]

In earlier editions of *Frau* it was more apparent that Bebel was indeed referring in this passage to the subsumption of society under eternally valid natural laws, for he closed the discussion with the following: "From all this we recognize the great importance of the laws of nature for the evolution and social conditions of society."[43] In the tenth edition Bebel altered this sentence, shifting away from his earlier biologizing tendencies: "From all this we recognize the great importance which social conditions, from the standpoint of the laws of nature, have for the development of the individual."[44] In later editions Bebel provided an even less naturalistic explanation by placing greater emphasis on the effects of the material conditions of life (presumably including the mode of production) rather than natural laws on social development.[45] This placed Bebel closer to the materialist conception of history and illustrates Olaf Rehberg's contention that in early editions of *Frau*, Bebel gave equal weight to natural and socio-economic determinants of human development; but with the ninth edition he clearly emphasized the overriding importance of economic and social conditions.[46]

Even in later editions of *Frau*, however, Bebel never fully separated himself from the tendency to biologize society. He maintained that in order to understand the characteristics of the sexes or even peoples (races or nations), we must use the same method as natural science. Just as Marx had done earlier, Bebel gravitated toward environmentalist rather than Darwinian explanations: "It is the material conditions of

life which impress on each living being to a great extent its character traits; it is required to adapt itself to the extant conditions of life, which adaptations finally become part of its own nature." Bebel continued by asserting that humans are no exception and are subject to natural laws just like all other organisms.[47] If Bebel had confined himself to discussing human physiology as subject to biological laws, he would have been on safe ground. However, by bringing character traits of whole peoples and thus societies into the picture, he contradicted the Marxian viewpoint that he elsewhere articulated. He was more consistent with his Marxian world view when he wrote, "If climate, condition of soil, and nutrition essentially affect the physical evolution of a people, so it is the economic and social forms that influence its mental evolution."[48]

Despite his tendency at times to place humanity and society under the yoke of natural law, Bebel often rejected the application of natural laws to society.[49] This manifested itself most clearly when Bebel had to confront the arguments of anti-socialist Darwinists, whom Bebel considered incompetent and ignorant in the field of social science. In his review essay on Woltmann's book, *Die Darwinsche Theorie und der Sozialismus* (1899), Bebel castigated most Darwinists, including Darwin himself, for their social views:

> Without Darwinism one can grasp the laws of development of society in its various stages of development, but as a Darwinian, one can never understand the laws of development of human society, if one does not know scientific socialism and the historical materialism underlying it. Otherwise, one remains stuck in the crude, purely mechanical conception of Darwinism, in which the Darwinians almost without exception have remained mired.[50]

In attacking Woltmann and other Darwinians who transferred evolutionary laws to the social realm, Bebel drew a sharp distinction between humans and animals. The difference is that humans have a social being or essence, which arose through the advent of human labor and the invention of tools.[51] Bebel was either oblivious to or else deftly side-stepped any discussion of Darwin's conception that human social

instincts are only different in degree--not in kind--from those in the animal realm. In any case, in his review of Woltmann and in *Frau*, Bebel declared it illegitimate to apply biological principles to social development. In *Frau* he identified the key characteristic setting humans apart from animals as the human brain, which enables humans to gain knowledge of nature and consciously apply this knowledge to transform political and social institutions according to goals in their minds. Bebel stated, "The difference therefore between the human and the animal is, that *the human is certainly a thinking animal, but the animal is not a thinking human.*" The consequence of this distinction is that humans are not subject to all the laws governing unconscious animals, such as the Darwinian struggle for existence.[52]

The Lamarckian and
Environmentalist Emphasis

The evolutionary theory that Bebel incorporated with such alacrity into his world view was essentially that of Darwin and Haeckel--with one big exception. Like Marx and Engels before him, Bebel could not tolerate Malthus' population theory, and he was horrified with the idea promoted by most Darwinists that humans could not escape the ineluctable struggle for existence. His dispute with Darwinists over this point pushed him toward a non-Darwinian explanation of human evolution that placed greater emphasis on environmental influences and the inheritance of acquired characteristics than on natural selection. The sharp distinction Bebel drew between humans and animals thus led him quite logically to adopt two different evolutionary theories--one for the non-human biological realm and another for humans. The former was Darwinian, while the latter more closely resembled a synthesis of Lamarck's and Büchner's pre-Darwinian theories.

Because Bebel was more concerned with society and humanity than with plants and animals, the Darwinian side of his evolutionary theory received little attention. He occasionally confirmed his belief in the Darwinian struggle for existence in nature; however, he usually expressed this in passages in which he was contending

against its applicability to humans. Emphasis thus lay on the non-Darwinian evolution of humans.[53]

Bebel criticized Darwin and his followers for their adoption of Malthus' population principle, which was anathema to Bebel, who assaulted "this brutal theory" in *Charles Fourier* and in *Frau*.[54] Malthus erred, according to Bebel, by ascribing to overpopulation and the lack of food the misery that was actually caused by maldistribution. Bebel argued that there was a superabundance of food and that many more people could be supported on the earth if it were distributed equitably: "Everywhere it is the social institutions and the mode of production and distribution of the products connected with them that produce lack and misery and not the number of people."[55] He also identified two other errors of Malthus' supporters. First, they failed to recognize that as standards of living increase, population growth diminishes. More importantly, they forgot that humans are higher than animals and can control natural laws. Like Lange and Büchner, Bebel believed that human reason provided a means to govern nature rather than to be ruled by it.[56]

Bebel's rejection of Malthus' population principle entailed a concomitant rejection of the necessity of a human struggle for existence in the Darwinian sense. Indeed Bebel admitted that primitive societies found themselves in a constant struggle for existence. However, he maintained that in some places the abundance of food has relieved people of this concern. He further conceded that the struggle for existence has occurred and still occurs in human societies, including his own, but maintained that it is the result of the relations of production and private property, not lack of subsistence. Because he upheld Marx's view of immiseration and thought the chasm between the bourgeoisie and proletariat was widening, he even believed the struggle for existence was intensifying in his time: "In our social life the struggle for existence is taking on ever more powerful dimensions."[57] The struggle in present society is not an individual struggle, though. It involves groups within society and has become a class struggle. Despite the past and present operation of the struggle for existence among and within human societies, Bebel's view of humanity nourished a hope within

him that in the future the struggle would be superceded by human intelligence and reason:

> The Darwinian law of the struggle for existence, that in nature culminates with the more highly organized and stronger organism destroying and displacing the lower one, finds in the human world the end result that humans as *thinking and perceptive* beings *continually alter, improve, and perfect* their conditions of life, *i.e., their social conditions and everything connected with it, so that finally for all human beings equally favorable conditions of existence are present.*[58]

Unlike Büchner and some social Darwinists, Bebel did not desire social and economic equality in order to intensify the struggle for existence and thus further human progress. Rather he believed that human reason could eliminate completely the struggle for existence and all economic competition.

Since Bebel rejected the struggle for existence and thus natural selection as the driving force behind human evolution, he came to embrace an environmentalist view. Knowledge of the mechanisms of heredity were not advanced enough in the late nineteenth century to refute Bebel's standpoint, and Darwin and Haeckel also believed in the influence of the environment on heredity. Indeed, Haeckel's evolutionary theory presented the inheritance of acquired characteristics as an important evolutionary mechanism operating in conjunction with natural selection. Bebel's conception of human evolution was thus derived by purging Darwin's and Haeckel's theory of those aspects offensive to him, not by studying non-Darwinian evolutionary theories.

The conception of human evolution that Bebel embraced was entirely consonant with Marx's doctrine of the malleability of human nature. Bebel believed that in human evolution, changes could come quite rapidly, a view contradicting Darwin's more gradualist approach. Bebel stated, "Heredity on the one hand, adaptation on the other, play a decisive role in human evolution as well as in the animal realm, and indeed the human is the most flexible and pliable of all creatures."[59] When Ziegler attacked Bebel for upholding the inheritance of acquired

characteristics, Bebel replied in his 1895 foreword to *Frau* that numerous biologists still believed in it, including Haeckel, Huxley, and Büchner. Weismann's anti-Lamarckian theory of evolution had not yet won the day in biological circles.[60]

Bebel's Lamarckian emphasis went hand in hand with his environmental account of the origin of variations in organisms. Instead of appealing to the purposeful activity of individual organisms responding to the environment, as Lamarck did, Bebel stressed the direct influence of the environment--especially economic and social relations--on human evolution. Bebel drew the following correlation between natural science and social life:

> If through the application of these natural laws to the evolution of the human being we press forward to the fundamental causes, we find that power relations, character and physical characteristics of individuals, as well as of classes and entire peoples, depend first and foremost *on the material conditions of existence*, thus on the social and *economic power relations*, which are again influenced through the soil formation, the fertility of the soil, and the climate.[61]

The materialist conception of history was thus extended to explain not only the development of various forms of society, but also to explain the course of human physical and mental evolution. This explanation, especially with its allusion to the influence of the soil formation on evolutionary development, seems to bear the imprint of Marx's receptivity to Trémaux.

Evolution and Women's Equality

Bebels' environmentalist conception of evolution along with his view of the malleability of human nature had tremendous implications for his discussion of the position of women in society, the primary topic of *Frau*. He appealed to evolutionary theory to justify his position on female equality and to lend scientific plausibility to his social program. However, few scientists in the late nineteenth century favored women's equality, so Bebel had to cite them selectively and develop his own ideas on how to apply science to this area of social concern.

Darwin and most Darwinians were by no means sympathetic to women's equality. On the contrary, they emphasized the differences between the sexes and perpetuated the traditional view of female inferiority. By massing empirical evidence in support of their view of women, many biologists effectively made nature responsible for social inequalities. Darwin not only emphasized male superiority in physical strength and courage, but also thought men had greater intellectual prowess and "inventive genius." He believed many character traits were biologically inherent and sex-specific. Men have more bravery and pugnacity, but women excel in tenderness and selflessness, in his view.[62]

Darwin ascribed the differences between the sexes to the twin evolutionary mechanisms of natural and sexual selection. He held the latter responsible for the physical and temperamental disparities between men and women, which emerged as a result of competition between males for the most favored females. Natural selection, however, contributed to male intellectual supremacy, since smarter men would have an advantage in providing for themselves and their families.[63]

Bebel agreed with Darwin that the differences between men and women are considerable, including not only physical and mental traits, but also inclinations, such as the tendency to gossip, envy, etc. Further, he admitted that all these kinds of traits can be transferred from one generation to the next through heredity. However, because he upheld an environmentalist form of evolution, he did not consider heredity a significant obstacle, since it could be manipulated by altering the conditions of life. For Bebel, evolutionary theory provided a way to escape the problem of female inequality, since it denied the fixity of biological traits.[64]

While agreeing that biological inequalities between the sexes presently existed, Bebel vehemently disagreed with Darwin concerning their cause. He rejected Darwin's reliance on natural and sexual selection with their emphasis on the competitive character of society. Although he admitted that the struggle for existence is operative in contemporary society, he regarded it a product of socio-economic conditions and considered it a malevolent force contributing to the oppression of women.[65] Instead of being formed by natural causes, he argued that biological and

psychological sex differences had been produced by eons of social and economic inequities:

> If one considers the long duration of all these incongruities [between men and women] through hundreds of generations, one will no longer be astonished, that in accordance with the natural laws of heredity and evolution these phenomena have taken on their present extreme form through the continual effect of the same causes.[66]

Although these differences have become hereditary, this does not mean they are irreversible. In fact, it is only because the social inequities persist that the biological inequalities linger. If social conditions are equalized, women will thrive in a way they cannot presently and will even achieve greater biological equality. Therefore, Bebel considered socialism the solution to the problem of women's inequality, since it would produce the conditions for women to reach their full evolutionary potential.

While Bebel thought the environment affected evolution directly, he also believed it indirectly promoted evolution through the inheritance of acquired characteristics that developed in response to environmental changes. One example was his treatment of the difference between the brain size of men and women, which, he explained, is greater among civilized than among uncivilized peoples. Bebel's explanation for this is that among civilized peoples, men receive more education and thus exercise their brains more than women, and this trait is then passed on to the following generation.[67] This illustrates once again Bebel's conviction that equality between the sexes is greater in primitive societies and diminishes through adverse social conditions spawned by economic inequality. In this example, the fact that men received more education than women was, of course, the result of men's superior economic position. If women were given an equal opportunity, they could also expand their brains (literally).

Directing the Course of Human Evolution

The doctrine of eugenics did not start to become popular in Germany until after 1890, and Bebel had no desire to intervene in the discussion over what measures

were best to control the quality of the human population. He knew the young eugenicist, Alfred Ploetz, and was acquainted with his work, *Die Tüchtigkeit unserer Rasse und der Schutz der Schwachen* (1895, *The Fitness of our Race and the Protection of the Weak*), but he withheld judgment on it.[68] However, although he never formulated a definite agenda for eugenics, he laid the groundwork for socialist receptivity to eugenical thinking in *Frau* by advocating the conscious control of the laws of nature to determine the direction of human evolution. He averred that if science can select the characteristics of animals so well using artificial selection, then "applying the laws of evolution to the raising (*Erziehung*) of humans will finally lead to the bringing forth of definite physical and mental traits, to being able to harmoniously develop individuals."[69]

Although his advocacy of eugenics stopped short of proposing specific measures, he clearly thought that the introduction of socialism would create conditions favoring the improvement of the human species. This makes sense in light of his environmentalist conception of human evolution. In the early editions of *Frau* he wrote:

> If therefore poor and unworthy conditions of existence of humans--thus the defectiveness of social conditions--are recognized as the cause of poor and deficient individual development, from this it follows with necessity, that the *improvement of the conditions of existence will likewise improve human beings. Again the conclusion of this is: The consistent application of the natural laws which have become known under the name of Darwinism to the human being produces other humans, but also requires correspondingly other social conditions and leads therefore to the Marxian theory--to socialism.*[70]

In later editions he rewrote this passage and backed off from the explicit claim that Darwinism leads to socialism. However, he remained committed to socialism as a means to manipulate evolution for specific goals:

> It is therefore a matter of shaping the social conditions in such a manner that each person has the possibility for the complete untrammelled development of his being (*Wesen*), that the laws of evolution and adaptation, which after Darwin are characterized as Darwinism, come to efficacy for all persons purposefully and with conscious goals. But that is only possible in socialism.[71]

Two aspects of socialism appeared to Bebel especially conducive to the future evolutionary progress of the human species. First, the improved social conditions in socialist society would benefit everyone physically and mentally, and these beneficial, acquired traits would be passed on to following generations and would steadily increase. Secondly, socialism would introduce the purposeful control of nature and thus consciously attempt to select physical and mental traits beneficial to humans. Because Bebel viewed socialism as "science applied to all areas of human activity," it would replace haphazardness with rationality:

> Humanity in socialist society, where it is first really free and placed on its natural basis, will steer its entire evolution consciously according to natural laws.[72]

What set Bebel apart from mainstream eugenical thinking in the late nineteenth and early twentieth centuries was his view of heredity. Many eugenicists became convinced adherents of Weismann's theory of hard heredity, i.e., that the environment has no influence on heredity. Bebel's environmentalist view of human evolution led him to quite different conclusions. For example, many eugenicists argued that the propensity toward crime was inbred, and thus some advocated sterilization or capital punishment as measures to rid society of this evil. Haeckel had argued this in *Natürliche Schöpfungsgeschichte*, and Bebel censured him for it, asserting instead that crime is the product of social conditions, and the alleviation of social problems would sweep away all crime and immorality.[73] Bebel also had far greater faith in education than most eugenicists; as we have seen, he even thought it could increase the physical size of the brain.

Evolution and Socialist Tactics

Many socialists--especially those of a more radical bent--have argued that the introduction of evolutionary biological ideas into socialist theory in the late nineteenth century stripped Marxism of its revolutionary edge by replacing dialectical materialism and praxis with mechanical materialism, and by fostering gradualism.[74] The problem with the first allegation is that it does not adequately distinguish between Darwinism and scientific materialism. Indeed there is some overlap, and Darwinism did contribute to the popularity of scientific materialism, but they are not identical nor are they necessary concomitants. The main works of the leading scientific materialists--Büchner, Vogt, and Moleschott--were published before the appearance of Darwinism, and scientific materialism attained immense popularity independent of the Darwinian theory. Further, the adoption of Darwinism into one's world view did not necessarily entail the acceptance of materialist philosophy. We have already seen that Lange, a Neo-Kantian philosopher, fully accepted the Darwinian theory while simultaneously arguing against the scientific materialists. It was not so much Darwinism itself that contributed to the inculcation of non-dialectical materialism in socialist ranks, as the propagation of a scientific materialist world view by some of the leading proponents of Darwinism in Germany. Büchner and Vogt began promoting Darwinian theory early on. Haeckel also preached materialism in his popular works on Darwinism.

In Bebel's case, neither the first nor the second allegation apply to him, since Darwinism had little or no impact on his policy of "revolutionary waiting." Being situated between a powerful German state on the one hand and the workers, who wanted concrete immediate reforms to improve their conditions, on the other hand, left Bebel few practical options other than parliamentary activity.[75] His sympathy for the workers, a product of his own upbringing and experience in the working class, and his desire for the immediate amelioration of their conditions bred a reformist impulse in him. However, his antipathy for the status quo and his adoption of Marxian theory kept him firmly upholding revolutionary theory while pressing for reforms and

campaigning for a seat in the Reichstag. As Brigitte Seebacher-Brandt argues, he was both an insider and an outsider, a parliamentary representative and a revolutionary.[76]

Before Bebel studied Darwin, he had explained his views on revolution, which remained fairly constant for the rest of his career. He did not think it was possible to foresee whether or not a violent revolution would be necessary to transform society from private to social production. If violence occurred, it would be due to the resistance of those in positions of power to the natural course of events, not because of the planning of socialists. He claimed that only the defenders of the status quo "have it in their control whether things develop peacefully, according to nature so to speak, or if catastrophes occur."[77] Although Bebel often spoke of the natural development of society, he did not always equate natural with peaceful or gradual change. Once he wrote, "Violence cemented the Reich together in its present form, only violence can maintain it against its enemies, *with violence it will also finally perish*; that is natural necessity."[78] However, while he upheld the possibility of violent revolution, he usually emphasized that revolution could occur peacefully, unless the present rulers initiate violence in a fruitless attempt to stave off the inevitable.[79]

The two primary reasons Bebel consistently counseled against an immediate revolution had nothing to do with Darwinism. First, he considered it impractical and counterproductive. He wrote to Engels:

> It has not occurred to anyone to say, in the future we will walk the "legal" way; we have left no doubt at all about it, that the natural course of development will deliver power into our hands; the how we have not addressed; we have only disputed that we have the inclination to make the acquaintance of the new semi-automatic rifle.[80]

Bebel was never one to shrink back from government intimidation and spent several years in prison because of his outspoken opposition to Bismarck's regime. His speeches, especially early in his career, were peppered with inflammatory talk of revolution. However, during the period of the Anti-Socialist Law, Bebel counseled against violent agitation and for limited compliance, since he knew the socialist party was not strong enough to openly challenge the Bismarckian state. Bebel's

commitment to revolution rather than gradual reform became evident in his response to Bernstein's revisionism. He decisively rejected Bernstein's critique of revolutionary Marxism and urged Kautsky to denounce their erstwhile friend.

The second reason Bebel consistently resisted the urge to organize revolutionary activity was his belief in the Marxian tenet of immiseration. He clung to the belief throughout his life that the coming social revolution would be preceded by a widening cleft between a shrinking bourgeoisie and the burgeoning proletariat. Time would thus play into his hands, since his party would undoubtedly grow. Another aspect of the theory of immiseration that fostered a waiting mentality was the view that the social revolution would be precipitated by the imminent, inevitable collapse of capitalist economy.[81] To initiate a revolution before the coming collapse, which Bebel always thought was just ahead, would be premature and impossible.[82] Darwinian gradualism thus made no inroads into Bebel's view of social development, which stressed revolution--or rapid change--through catastrophe.

Conclusion

Like Marx and Engels, Bebel saw evolutionary theory as a confirmation, not only of his anti-religious philosophical materialism, but also of his social theory. He tried to maintain the Marxian distinction between natural and social laws, but he did not do this as consistently as Marx and Engels had. Largely due to the influence of evolutionary theory, he blurred the distinction between humans and animals that was central to Marx's and Engels' treatment of the relationship between nature to society. One reason for this is that he propagated a non-Darwinian environmentalist theory of evolution that was easier to harmonize with socialist theory than the strict Darwinian theory with its problematic Malthusian heritage. Marx, we recall, also blended natural and social laws when he adopted Trémaux's environmentalist explanation for human evolution. However, Marx never published anything espousing these views, and Engels in the writings published during his lifetime usually commented rather favorably on Darwin's theory.

Thus Bebel was one of the first socialist leaders to publicly harmonize Marxism with a non-Darwinian theory of evolution. Bebel sometimes transgressed against his own formal distinction between natural and social laws, though he usually kept them separate. However, by promoting evolutionary theory so zealously in socialist ranks and especially by calling on it to establish his social views, he left an ambiguous legacy that contributed to the infiltration of biological concepts into socialist thought (an impetus that would have been strong even without his contribution to it). Kautsky, who studied Darwinism to a much greater extent than Bebel, would continue this legacy and attempt a much more thorough synthesis of Marxism and biological evolution.

ENDNOTES

1. Werner Jung, *August Bebel, Deutscher Patriot und internationaler Sozialist. Seine Stellung zu Patriotismus und Internationalismus* (Pfaffenweiler, 1988), 22-23.

2. August Bebel, *Aus meinem Leben* (Berlin, 1946), 1:92; Bebel, *Ausgewählte Reden und Schriften*, 6:77; see also Bebel to Ellissen, 11 November 1889, in Archiv der Parteien und Massenorganisationen der DDR, Bebel papers.

3. Bebel, *Unsere Ziele*, in *Schriften 1862-1913*, ed. Cora Stephan (Frankfurt, 1981) 1:74.

4. Bebel, *Aus meinem Leben* in *Ausgewählte Reden*, 6:371; Ursula Herrmann and Volker Emmrich et al., *August Bebel. Eine Biographie* (Berlin, 1989), 153-55. Francis L. Carsten, *August Bebel und die Organisation der Massen* (Berlin, 1991), 251-53, erroneously claims that Bebel did not study Marx much.

5. Bebel, *Aus meinem Leben*, in *Ausgewählte Reden*, 6:371.

6. Heinrich Gemkow, "August Bebel--Freund und Schüler von Marx und Engels," *Beiträge zur Geschichte der deutschen Arbeiterbewegung* 5 (1963): 641-44; Gemkow, *August Bebel*, 2nd ed. (Leipzig, 1986), 54; Vera Wrona, "Die theoretisch-weltanschauliche Entwicklung August Bebels," *Zeitschrift für Geschichtswissenschaft* 16 (1968): 348.

7. Bebel, *Die Frau und der Sozialismus*, 25th ed. (Stuttgart, 1895), xiv; see also Bebel to Ellissen, 16 December 1889, in Archiv der Parteien und Massenorganisationen der DDR, Bebel papers; Bebel to Wilhelm Liebknecht, 14 September 1874, in W. Liebknecht, *Briefwechsel*, 1:573.

8. Carsten, *August Bebel*, 238-39, 249; William Harvey Maehl, *August Bebel: Shadow Emperor of the German Workers* (Philadelphia, 1980), 2-3, 115.

9. Bebel, *Frau*, 25th ed., ix.

10. Marx to Engels, 16 September 1882, *MEW*, 35:95; Engels to Laura

Lafargue, 20 September 1882, *MEW*, 35:363; Engels to Johann Philipp Becker, 15 October 1884, *MEW*, 36:218.

11. Karl Kautsky, quoted in Heinrich Gemkow and Angelika Miller, eds., *August Bebel--". . . ein prächtiger alter Adler": Nachrufe - Gedichte - Erinnerungen* (Berlin, 1990), 55; Kautsky to Bebel, 14 February 1885, IISH, Bebel Nachlass, 113/14, 16 (also in Karl Kautsky, Jr., ed., *August Bebels Briefwechsel mit Karl Kautsky* [Assen, 1971], 28).

12. V. I. Lenin, quoted in Gemkow and Miller, eds., *August Bebel*, 17.

13. Bebel, *Ausgewählte Reden*, 1:520.

14. Fritz Staude, "Die Rezeption der Arbeit Friedrich Engels' 'Der Ursprung der Familie, des Privateigentums und des Staates' durch August Bebel und Clara Zetkin," *Mitteilungsblatt der Forschungsgemeinschaft "Geschichte des Kampfes der Arbeiterklasse um die Befreiung der Frau"* (1984, no. 3): 13-14; Herrmann and Emmrich, *August Bebel*, 218.

15. Gemkow and Miller, eds., *August Bebel*, 39.

16. Bebel, *Ausgewählte Reden*, 1:7; Bebel, "Die Nothwendigkeit der Gründung einer allgemeiner Partei-Bibliothek," *Vorwärts* 21 (20 February 1878) (also in *Ausgewählte Reden*, 1:481); *Frau*, 10th ed. (Stuttgart, 1891), 223-24.

17. Bebel to Büchner, 18 July 1868, in Archiv der Parteien und Massenorganisationen der DDR, Bebel papers.

18. Bebel, *Frau*, 25th ed., 10; 50th ed. (Stuttgart, 1910), 11.

19. Bebel, Reichstagsrede, 16 September 1878, *Stenographische Berichte über die Verhandlungen des Deutschen Reichstages*, 4. Legislatur-Periode, I. Session 1878, (Berlin, 1878), 1:47-48 (also in *Ausgewählte Reden*, II/1:30-31).

20. Bebel, Reichstagsrede, 20 March 1884, *Stenographische Berichte über die Verhandlungen des Deutschen Reichstages*, V. Legislatur-Periode, 4th Session. 1884 (Berlin, 1884), 1:168.

21. Bebel, *Die Frau in der Vergangenheit, Gegenwart und Zukunft* [title of *Die Frau und der Sozialismus* during the Anti-Socialist Law], 8th ed. (London, 1890), 108-9; *Frau*, 10th ed., 195-97; 25th ed., 246-48; 50th ed., 258-60.

22. Bebel, "Die Darwinsche Theorie und der Sozialismus," *Die neue Zeit* 17,1 (1898-99): 484-86; *Frau*, 25th ed., viii-ix; Herrmann and Emmrich, *August Bebel*, 227.

23. Helmut Hirsch, ed., *August Bebel. Sein Leben in Dokumenten, Reden und Schriften* (Cologne and Berlin, 1968), 133; see also Vernon L. Lidtke, "August Bebel and German Social Democracy's Relation to the Christian Churches," *Journal of the History of Ideas* 27 (1966): 253-57.

24. Bebel to Kautsky, 31 January 1884, in Kautsky, Jr., ed., *August Bebels Briefwechsel*, 10.

25. Bebel, *Die Mohamedanisch-Arabische Kulturperiode*, 2nd ed. (Stuttgart, 1889), 2; Yves Guyot and Sigismond Lacroix, *Die wahre Gestalt des Christenthums*, trans. August Bebel, 4th ed. (Berlin, 1898), xx-xxi.

26. Bebel, Reichstagsrede, 17 June 1872, *Stenographische Berichte über die Verhandlungen des Deutschen Reichstages*, I. Legislatur-Periode, III. Session

1872 (Berlin, 1872), 2:1080 (also in *Ausgewählte Reden*, 1:211).

27. Bebel, *Christenthum und Sozialismus* (Hottingen-Zurich, 1887), 7.

28. Ibid, 11; *Frau*, 8th ed., 110; 10th ed., 197-98; 25th ed., 250-51; 50th ed. 262-63.

29. Bebel, *Frau*, 8th ed., 180; 10th ed., 8, 314; 25th ed., 9-10, 399-400; 50th ed., 10-11, 445-46.

30. Bebel, Reichstagsrede, 17 June 1872, 2:1082.

31. Bebel, "Das Papstthum und die soziale Bewegung," *Die neue Zeit* 4 (1886): 98.

32. Herrmann and Emmrich, *August Bebel*, 227.

33. Bebel, *Unsere Ziele*, in *Schriften*, 1:41-43.

34. Reiprich, *Philosophisch-naturwissenschaftliche Arbeiten*, 101; Wrona, "Theoretisch-weltanschauliche Entwicklung" 348, 358; Herrmann and Emmrich, *August Bebel*, 163; Olaf Rehberg, "Die weltanschauliche Entwicklung August Bebel und deren Widerspiegelung in seiner Schrift 'Die Frau und der Sozialismus' in den Jahren 1879 bis 1909. Probleme der Aneignung und Entwicklung der materialistischen Geschichtsauffassung durch Bebel" (diss., University of Leipzig, 1984), 5.

35. Bebel, in *Protokoll über die Verhandlungen des Parteitages der Sozialdemokratischen Partei Deutschlands*, Hannover Congress (Berlin, 1899), 96-97 (also in *Schriften*, 1:434).

36. Bebel, *Frau*, 25th ed., xiii.

37. Lidtke, "August Bebel," 260; Gemkow, *August Bebel*, 43, 54; Bebel to Johann Philipp Becker, 20 November 1883, IISH, Bebel Papers, B 5/14.

38. Bebel, "Darwinsche Theorie," 487.

39. Rehberg, "Weltanschauliche Entwicklung," 31.

40. Bebel, *Frau*, 8th ed., 195; 10th ed., 341; 25th ed., 432-33; 50th ed., 479-80 (emphasis in original). Bebel was citing Friedrich Ratzel, who in turn cited Haeckel for this quote.

41. Ibid, 8th ed., 106; 10th ed., 188; 25th ed., 240; 50th ed., 256.

42. Bebel, *Frau*, 8th ed., 101; 10th ed., 182; 25th ed., 229-30; 50th ed., 243.

43. Ibid, 8th ed., 102.

44. Ibid, 10th ed., 184.

45. Ibid, 50th ed., 145.

46. Rehberg, "Weltanschauliche Entwicklung," 25, 12.

47. Bebel, *Frau*, 8th ed., 59; 10th ed., 113; 50th ed., 145.

48. Bebel, *Mohamedanisch-Arabische Kulturperiode*, 2.

49. Peter Jäckel, "Die Wirkung der philosophisch-naturwissenschaftlichen Arbeiten von Karl Marx, Friedrich Engels und den Führern der deutschen Sozialdemokratie auf die Arbeiterbewegung (1870-1900)" (diss., University of Dresden, 1972), 66.

50. Bebel, "Darwinsche Theorie," 486-87.

51. Ibid.

52. Bebel, *Frau*, 8th ed., 109-10, 211; 10th ed., 197, 368-69; 25th ed., 249,

459; 50th ed., 261, 504-5.

53. Bebel, *Frau*, 8th ed., 108, 211; 10th ed., 195, 368-69; 25th ed., 249, 459; 50th ed., 261, 504.

54. Bebel, *Charles Fourier. Sein Leben und seine Theorien*, 3rd ed. (Stuttgart, 1907), 184, 189.

55. Bebel, *Frau*, 8th ed., 208; 10th ed., 364; 50th ed., 501.

56. Ibid, 8th ed., 199-201, 211; 10th ed., 352-55, 368; 25th ed., xiv, 443-47, 459; 50th ed., 489-93, 504.

57. Ibid, 8th ed., 6-7, 14, 131, 211-12; 10th ed., 228, 369; 25th ed., 249, 293, 459-60; 50th ed., 261, 320, 505.

58. Ibid, 8th ed., 108; 10th ed., 195. See also 8th ed., 211; 10th ed., 368-69; 25th ed., 459; 50th ed., 504.

59. Ibid, 50th ed., 244.

60. Ibid, 25th ed., xv-xvi.

61. Ibid, 8th ed., 107-8; 10th ed., 194. See also 25th ed., 151-52; 50th ed., 154-55.

62. Darwin, *Descent*, I:257-58, 272, II:316-29; Cynthia Eagle Russett, *Sexual Science: The Victorian Construction of Womanhood* (Cambridge, MA, 1989), 2, 15, 40-43, 205-6.

63. Darwin, *Descent*, II:382-83.

64. Bebel, *Frau*, 8th ed., 59; 10th ed., 113; 25th ed., 142; 50th ed., 145.

65. Ibid, 8th ed., 42; 10th ed., 84; 25th ed., 107, 121, 147; 50th ed., 109, 124, 151.

66. Ibid, 8th ed., 61; 10th ed., 116.

67. Ibid, 8th ed., 105-6; 10th ed., 188; 25th ed., 240; 50th ed., 256; Russett, *Sexual Science*, 36.

68. Bebel, "Kritische Bemerkungen zu Katzensteins kritischen Bemerkungen über 'Die Frau und der Sozialismus,'" *Die neue Zeit* 15,1 (1896-97): 331; Alfred Ploetz to Karl Hauptmann, 31 August 1897, in Akademie der Künste zu Berlin, Karl Hauptmann papers; Peter Emil Becker, *Zur Geschichte der Rassenhygiene. Wege ins Dritte Reich*, part 1 (Stuttgart, 1988), 78.

69. Bebel, *Frau*, 8th ed., 110-11.

70. Ibid, 8th ed., 108; 10th ed., 195 (emphasis in original).

71. Ibid, 50th ed., 258; see 25th ed., 246.

72. Ibid, 8th ed., 214; see also 10th ed., 372; 25th ed., 462-63; 50th ed., 508.

73. Ibid, 8th ed., 133, 183; 10th ed., 231; 25th ed., 295-96; 50th ed., 322, 456-57.

74. See Introduction, n. 18.

75. Maehl, *August Bebel*, x.

76. Brigitte Seebacher-Brandt, *Bebel: Künder und Kärrner im Kaiserreich*, 2nd ed. (Bonn, 1990), 9-10, 86; Maehl, *August Bebel*, ix-x, 2-3. Carsten errs by underemphasizing Bebel's revolutionary side and his Marxist views (see *August Bebel*, 251-53), while Marxist-Leninist scholars often ignore his reformist and parliamentarian side.

77. Bebel, in *Protokoll über die Verhandlungen des Parteitages der Sozialdemokratischen Partei Deutschlands*, Jena Congress (Berlin, 1905), 297; *Unsere Ziele*, in *Schriften*, 1:49; Bebel, in *Protokoll*, Hannover Congress (Berlin, 1899), 121.

78. Bebel, *Die parlamentarische Tätigkeit des Deutschen Reichstages und der Landtage und die Sozialdemokratie von 1871 bis 1874*, in *Die Sozialdemokratie im Deutschen Reichstag. Tätigkeitsberichte und Wahlaufrufe aus den Jahren 1871 bis 1893* (Berlin, 1909), 44.

79. Bebel, *Akademiker und Sozialismus* (Berlin, 1898), 12.

80. Bebel to Engels, 11 March 1895, in Werner Blumenberg, ed., *August Bebels Briefwechsel mit Friedrich Engels* (The Hague, 1965), 795-96.

81. Seebacher-Brandt, *Bebel*, 8, 11.

82. Hirsch, ed., *August Bebel. Sein Leben*, 318; Bebel, speech in *Protokoll*, (Erfurt, 1891), 172.

CHAPTER VI

KARL KAUTSKY: APOSTLE OF SOCIALIST DARWINISM

Few contributed as much to the dissemination of Darwinism and evolutionary theory in socialist circles as Kautsky, the leading theorist of the German Social Democratic Party in the pre-World War I period. When Kautsky founded *Die neue Zeit* in 1883, he intended it not only as a theoretical journal promoting Marxian socialism, but also as a vehicle to disseminate Darwinism. He asked Engels to contribute an article on Darwin to appear in the first issue, since "I cannot think of a better introductory article for a popular monthly magazine than one about Darwin. The name alone is already a program."[1] Kautsky also invited the Darwinian botanist Arnold Dodel to submit scientific articles to his forthcoming journal, explaining, "We want to devote special attention to natural science and specifically to Darwinism and in each number, if possible, carry a scientific article."[2] Dodel's prompt compliance delighted Kautsky, especially since the article was on Darwin's life and work, and Kautsky urged him to continue writing for *Die neue Zeit*.[3] In explaining the purpose of the new journal to its readers, Kautsky emphasized the importance of natural science, which, he maintained, was producing a greater revolution than any of the previous political revolutions.[4] In 1883-84 Kautsky himself wrote articles heavily relying on Darwinian theory, and thereafter--though concentrating more heavily on economics, politics, and history in his own writings--he continued to feature articles on evolutionary theory by his friends and colleagues, most notably Edward Aveling, Paul Lafargue, Heinrich Cunow, Eduard Bernstein, Kurt Grottewitz, and Gustav Eckstein.

Kautsky's enthusiasm for Darwinism harked back to his student years in Vienna in 1874-75, when he first became acquainted with Darwin's and Haeckel's writings. In his memoirs Kautsky looked back on this time as the most critical period

in the formation of his materialist world view, and Darwinism was a crucial factor in this development.[5] In addition to reading Haeckel's *Natürliche Schöpfungsgeschichte* and Darwin's *Origin* and *Descent*, he also imbibed Büchner's *Kraft und Stoff* and Henry Thomas Buckle's *History of Civilization in England*, all of which contributed to his adoption of scientific materialism. Haeckel captivated the young Kautsky even more than Darwin, because the German biologist was bolder and less cautious than his older English colleague. Büchner won Kautsky's approval not only through his bold materialist stance, but also because his political views were radical and sympathetic to socialism.[6] Kautsky later called natural science the first love of his youth, and this was no hyperbole.[7] His entire conception of nature was transformed by Darwinian theory, which also deeply influenced his social thought.[8]

Before entering the University of Vienna in the fall of 1874, Kautsky had decided to study history. He only read Haeckel and other Darwinian literature shortly after beginning his studies, though he read Buckle the preceding summer. His enthusiasm for evolution and his penchant for scientific explanations carried over into his historical studies. He--like Buckle--sought to make history more scientific by trying to discover a theory or principle to explain the historical process. Discontented because his history professors did not provide such a theory, he--at age 21!--took upon himself the task of writing a universal history that would satisfactorily explain historical phenomena in the framework of an overarching theory of development. He gave up this overambitious project after writing a short sketch in 1876 outlining his views. "My theory of history," Kautsky wrote, reflecting back on his views in the mid-1870s, "was nothing other than the application of Darwinism to social development." Kautsky's conception of history as the product of the struggle for existence between tribes, peoples, and races reflected Darwin's views in *Descent* and anticipated the theory of the Austrian sociologist Ludwig Gumplowicz in his book, *Rassenkampf* (1883). Gumplowicz had argued that the struggle for existence in human society was primarily between races (defined culturally, not biologically) rather than individuals, and resulted inevitably in wars and conflicts between different ethnic

groups.[9] By 1883, though, Kautsky had abandoned this theory in favor of another principle--Marx's materialist conception of history.[10]

Kautsky's move toward socialism proceeded simultaneously with his reception of Darwinism. He had grown up in an atmosphere pervaded with the democratic and nationalistic ideals of 1848 and with a hatred of the Austrian regime.[11] His sympathy for the Paris Commune initiated an interest in socialism, and he gradually became acquainted with socialist literature. In January 1875 he joined the Austrian socialist party. Although Kautsky read Marx's *Capital* in late 1875 and referred to Marx occasionally in his articles in the 1870s, he was anything but a Marxist at that time. By his own admission, he did not understand *Capital* when he first read it, and his sympathies lay more with John Stuart Mill, Albert E. F. Schäffle, and Lange than with Marx and Engels.[12] His socialism was highly eclectic, and his attempts to articulate his views were often confused and contradictory.

By 1880, when he moved to Zurich, Kautsky was uneasy about the hodgepodge of social ideas in his head: "For my economic and historical thinking I strove toward overcoming my previous eclecticism and toward unified thinking." Together with and under the influence of his new friend Bernstein, he converted to Marxism after studying Engels' *Anti-Dühring*. Kautsky remembered the early 1880s in Zurich as "that time that gave my scholarly work the definitive stamp of a consistent Marxism freed from all eclectic supplements. My economic as well as my historical works were pursued from now on strictly according to the Marxist method."[13] By late 1882 Kautsky announced to Engels that his forthcoming journal would stand squarely on Marxism and would not tolerate reform socialism.[14] From that time on, Kautsky considered himself an orthodox Marxist and with good reason. He enjoyed the approbation of Engels, Bebel, and--until 1909--almost all European Marxists, including Lenin and Rosa Luxemburg.[15]

While Kautsky remained unwavering in his Marxist stance, his position vis-a-vis Darwinism altered considerably after 1885. In the preceding ten years, Darwinism had been a consuming passion, but from 1885 to 1905 he only occasionally broached the subject in his writings. More importantly from a theoretical standpoint, around

the turn of the century Kautsky abandoned a strict Darwinian evolutionary theory in favor of neo-Lamarckism. This shift in his thinking probably came gradually, as he intimates in the preface to *Vermehrung und Entwicklung in Natur und Gesellschaft* (1910, *Propagation and Evolution in Nature and Society)*, a book discussing his new position on biological evolution.[16] After embracing neo-Lamarckism, he also published *Ethik und materialistische Geschichtsauffassung* (1906, translated as *Ethics and the Materialist Conception of History*) and a summation of his entire life's work, *Die materialistische Geschichtsauffassung* (1927, *The Materialist Conception of History*), in which evolution plays an major role.

The Role of Darwinism in
Kautsky's Conversion to Materialism

According to Kautsky, not his conversion to Marxism, but his conversion to materialism constituted the most fundamental and significant intellectual transformation in his life. By adopting Marxism, he was only building on the materialist foundation already laid down, not altering the entire structure of his world view. Indeed, he opened the section of his memoirs entitled "Materialismus" with the assertion: "As with [my adoption] of socialism and internationalism, so in my entire Weltanschauung I came essentially to the ground on which I still stand today in the years between the Paris Commune and 1874." By Weltanschauung Kautsky did not mean a comprehensive philosophy, but merely a method of viewing the world.[17] Although he only later adopted Marx's and Engels' dialectical materialism, he considered this a small step rather than a giant leap from his previous materialism: "Between the materialism of my beginnings and that of my final stage no such difference exists, that it could signify a break."[18]

When Kautsky as a young man began to confront philosophical problems, the chief question in his mind was the existence of God. Darwinian literature was decisive in convincing him that all the arguments used to support the existence of God were sorely lacking. If Darwin and Haeckel were correct, no creator was necessary to explain the diversity and harmony of the organic world. Even more significant,

though, in winning Kautsky to materialism was Darwin's argument in *Descent* for the non-supernatural origin of human ethics, for he had previously considered the existence of ethics a strong argument in support of idealism: "This knowledge," wrote Kautsky concerning the Darwinian view of ethics, "affected me like a revelation. It removed one of the last hindrances from materialistic thinking in me."[19]

Based on his own experience with Darwinism, Kautsky naturally regarded it as a weapon in the struggle against religion and a powerful tool to promote a materialist world view. In an 1880 article he applauded Darwinism for having undermined belief in a creator and having struck the final and decisive blow to the medieval Christian world view. Darwinism, according to Kautsky, was contributing powerfully to the emergence of a new world view in which becoming would replace being.[20] He inserted a short notice in an early issue of *Die neue Zeit* not only explaining that Darwin had personally renounced Christianity, but implying that Darwin's agnosticism was kin to Büchner's atheism.[21] In his fight against idealism, Kautsky was especially zealous to promote Darwin's theory of the origin of ethics, writing numerous articles and an entire book on the subject.

He placed great importance on demonstrating that human institutions evolved from animal origins, since this contradicted the prevailing view of the divine origin of human social forms. In 1882 he completed a work on the origin of marriage and the family, intending to show "that marriage, as in its origin, so also in its further development, is subject to the fundamental principles of natural evolution, just like all other things having come into existence."[22] He submitted this work to Haeckel with the request that it be accepted as a dissertation, despite the fact that he had never studied under Haeckel, nor was he prepared to be examined in biology. He explained, however, why he thought it appropriate to send his dissertation to a Darwinian zoologist:

> Although essentially ethnological, it [the dissertation] is based completely on the Darwinian theory, with which it stands or falls. But on the other hand it occupies itself with a task which can be regarded as a continuation of the Darwinian theory: to prove that marriage as

> well as the family, is not an implanted, but a mechanically arising, spontaneously evolving instinct, and that its roots already lie in the animal world.[23]

Kautsky further argued that ethnology and anthropology were appropriate fields for a zoologist, and especially for Haeckel, since he had touched on these subjects in *Natürliche Schöpfungsgeschichte*. Haeckel responded to Kautsky that he thought the work was probably sufficient as a dissertation, but he did not consider himself competent to judge and was not allowed to examine in any field but zoology. He encouraged Kautsky to submit his work to a professor in a more suitable field.[24] Kautsky subsequently gave up his attempt to get a doctorate and published his study as a series of articles in *Kosmos*, the leading Darwinian journal in Germany at the time.

The Confluence of Socialism and Darwinism

As a young man, Kautsky struggled to achieve a unitary world view, to discover laws that explained both nature and society. Marxism satisfied his urge for scientific explanation by providing laws of development and became the cornerstone of his philosophy, indeed of his whole existence.[25] In the midst of their debate over revisionism he wrote to Bernstein, "But if the materialist conception of history and the conception of the proletariat as the driving force of the coming social revolution should ever be overcome, then I must indeed confess, then I would be finished. Then my life would no longer have any content."[26] Before embracing the materialist conception of history, however, he had upheld a Darwinian view of history and had attempted to synthesize Darwinism with socialism.

The extent to which Darwinian theory continued to influence Kautsky's thinking even after his conversion to Marxism is a question that has divided scholars. Steenson claims that this is a central issue in evaluating and understanding Kautsky's theory, though some dismiss the influence of Darwinism on Kautsky as insignificant.[27] Many scholars, however, emphasize the continuity in Kautsky's thought. Walter Holzheuer claims that Kautsky's early Darwinist ideas always remained an integral

part of his scientific socialism. By Darwinism, Holzheuer is referring more to materialism, anticlericalism, determinism, and the belief in human social instincts than to Darwinism in the strict sense of the term. However, he correctly points out that Kautsky continually upheld the idea of group competition among humans even after adopting neo-Lamarckism.[28] Dick Geary also argues that Kautsky continued to adhere to Darwinism throughout his career and claimed that his form of Marxism was evolutionary rather than dialectical as a result.[29] Leszek Kolakowski agrees with Geary that Kautsky's system of thought, which he characterizes as Darwinism woven together with Marxism, changed little throughout his career.[30]

Other scholars, however, stress discontinuity in Kautsky's thought. They claim that, although he was influenced strongly by Darwinism as a young man, this influence waned in the 1880s as Kautsky embraced Marxism. Though still considering evolution a valid biological theory, he divorced natural from social evolution. Hans-Josef Steinberg was the first to suggest this view, claiming that the year 1890 marked Kautsky's turning away (*Abkehr*) from Darwinism, after which time he cannot properly be called a Darwinist, even though some remnants of Darwinian influence remained in his thought. He notes that in 1902 Kautsky rejected Darwinism as incompatible with revolutionary socialism, but in 1909 he again appealed to Darwinism as consistent with revolution.[31] Hans-Jurgen Mende suggests that Kautsky's reintegration of evolution into his social philosophy was due to his adoption of neo-Lamarckism, which was more conducive to synthesis with Marxism, because it stressed adaptation of organisms to the environment rather than struggle between organisms.[32] Steenson agrees with Steinberg that Kautsky sought to distance Marxism from Darwinism, but pushed the date of Kautsky's separation of natural and social development to 1885. While admitting that Kautsky sympathized with Darwinism throughout his whole adult life, Steenson argues that it only had a minor impact on his social and economic theory because of Kautsky's distinguishing between nature and society.[33] Further, Steenson rejects the view that Kautsky ever revived the attempt to synthesize Marxism and Darwinism. Later Steenson was forced to amend this conception of Kautsky's intellectual development when he discovered that

Kautsky had already distanced social theory from Darwinism in 1877.[34] Since this was before his conversion to Marxism and during the very time that he was--by his own admission--trying to unite Darwinism and socialism, we are left with a conundrum.

Kautsky's own reflections on his intellectual development seem almost as contradictory as those of the scholars writing about him, and thus do not help much in solving this riddle. He claimed that in the 1880s he suppressed the publication of an essay he had written in the late 1870s because "my conception of history was no longer my earlier view. I had wrestled through to Marxism."[35] However, in his memoirs he constantly emphasized the continuity and gradual change in his ideas after the early 1870s. Concerning his pre-Marxist Darwinian conception of history, he wrote, "I did not have to completely overcome it, but only to modify and deepen it, in order to attain to the Marxist conception."[36] This suggests that he carried many of his Darwinian views over into his Marxism, at least initially, and possibly permanently. However, whenever he perceived contradictions between Darwinian theory and Marxism, he continually gave preeminence to Marxism and altered his biological views to correspond more closely to his social views.

There is no reason to doubt Kautsky's assertion that in the mid-1870s he tried to unite Darwinism and socialism.[37] His articles in the 1870s exude a passion for Darwinism, which he drew upon to support his socialist ideas. As he later wrote, "To find and propagate scientific knowledge, which is incompatible with the interests of the ruling classes, means to declare war on them."[38] Darwinism was an essential weapon in his arsenal in the 1870s. At that time he was attracted to the writings of Lange, because, like himself, Lange had eagerly embraced Darwinism and wove it together with his social theory. Of course, as a materialist, Kautsky rejected his neo-Kantian philosophy (in 1879 Kautsky still mistakenly thought Lange was an "empirical materialist"), but his Darwinism and social ideals resonated with Kautsky's.[39] The impetus from Lange led Kautsky to write his first book, which dealt with Malthusianism and the population problem.[40]

When we consider Kautsky's path to Marxism in the early 1880s, it becomes clearer why he initially saw no contradiction between Darwinism and Marxism and did not think he had to give up the former to embrace the latter. Before 1880 Kautsky had read Bebel's *Frau*, which, while promoting Marxism, also paid homage to Darwin, despite the fact that Bebel usually opted for non-Darwinian explanations for biological evolution. Kautsky enjoyed reading Bebel's book and later wanted to recommend it to the readers of *Die neue Zeit*.[41] The decisive influence in Kautsky's transformation to Marxism, though, was Engels' *Anti-Dühring*, in which Engels argued quite forcefully for the validity of Darwin's theory--including the struggle for existence--in the natural realm. According to Kautsky, "If I judge according to the effect that Engels' *Anti-Dühring* exercised on me, then there is no book that has accomplished so much for the understanding of Marxism as this one."[42]

Once Kautsky had adopted Marxism and the materialist conception of history without giving up Darwin's evolutionary theory, he was confronted with the task of integrating the two into a coherent world view. He considered one of Marx's greatest achievements his bringing together of natural and social science (though he probably was thinking more of Engels than Marx).[43] Deciding how the two theories related to each other was not so simple. Though they both emphasized change and a lawful process of development, their theories of human social evolution were at odds. Kautsky often evaded these contradictions by relegating Marxism and Darwinism to separate spheres. He argued that Marxism explained social development, while Darwinism explained evolution in nature. In 1890 he explained, "We do not need to break our heads over how socialism and Darwinism may be reconciled. Both have nothing to do with each other."[44] Similar statements recur in Kautsky's writings, especially when he was opposing the social Darwinist application of natural laws to society.

Despite his hyperbole penned in the fervor of polemics, he knew quite well that both theories intersected and recognized that Darwin's theory of human evolution made claims about human social development. While he rejected the stress on population pressure and the struggle for existence as the driving force behind human

history, he extolled other aspects of Darwin's theory of human evolution--especially its account of the origin of human ethics--as complementary or even supportive of socialism. Kautsky was continually interested in arguing that socialism was in harmony with nature and natural science, without, however, falling into the trap of equating natural and social laws.[45]

Humans as Animals: Kautsky on Human Nature

Like most Darwinists in the nineteenth century, Kautsky often stressed the continuity between humans and animals, especially anthropoid apes. For Kautsky this had not only physiological, but also social and political implications. In his early work on the origin of marriage and the family, he argued that apes and the most primitive humans live in monogamous unions, not in sexual promiscuity as Johann Bachofen (and Lewis Henry Morgan and later Engels) maintained. However, while pairing off in monogamous relationships, apes live in packs rather than families, just as primitive peoples live in tribes without family units. Kautsky implied that monogamy without the development of separate family units was more natural and thus superior to subsequent social forms.[46] Social instincts or morality are also a biological characteristic inherited from simian forebears and "with this the last barrier between human and animal has fallen."[47]

Even in his later works, Kautsky continued to emphasize the similarities between humans and animals. In *Ethik* this is especially the case, since there he argued for ethics as an instinct derived from animals. It is surprising how far he sometimes carried his argument; in some mental characteristics, he alleged, "the lowest savage differs far less from the animal than from the civilized human."[48] This kind of biological racism was popular among Haeckel and other Darwinists, but Kautsky's endorsement of it in this book is surprising, since both before and after this time he argued forcefully against Haeckel's view of racial inequality, which he spurned as European haughtiness.[49] Later he reviewed a book on the mental attributes of apes and discovered therein evidence suggesting to him that the materialist conception of history operates in ape societies, so "that in this area also no strict dividing line

between human and animal exists."[50] In 1917 Kautsky was still arguing for political positions based on fixed human attributes inherited from nature: "The human is by nature not only a social, but also a democratic being, or rather the impulse toward democratic activity is one of the sides of his social being, which he has taken over from his animal ancestors."[51]

Kautsky's insistence that humans are animals and that even many social traits are inherited from the animal realm did not mean that he considered humans *merely* animals. Like Engels, he believed that the chief distinction between humans and their ancestors was that humans used tools as means of production:

> With the production of the means of production the animalistic man begins to become human; with this he breaks away from the rest of the animal world to found his own realm, a realm with a special kind of development, which is completely unknown in the rest of nature, where nothing similar is found.[52]

He admitted that some animals use tools, too, but only those provided by nature.

Because Kautsky ascribed such a significant role to biology in the formation of human character, his conception of human nature was more static than Marx's. His view of social instincts seems to biologically ground Marx's early view of the social being and species being of humans. However, despite his insistence that many human characteristics, including morality and mental and social attributes, are innate and natural, Kautsky allowed for the malleability of these traits, especially after he espoused neo-Lamarckism. He asserted in *Ethik* that human nature and social instincts alter in response to changes in the conditions of life.[53] Because of the biological underpinning, however, it remains doubtful that Kautsky had in mind the rapid transformation of human nature through new economic conditions that Marx considered possible.[54] Nevertheless, he did later argue that human mental organs were particularly susceptible to variation and could change quickly.[55] So human nature would also not require eons to alter.

Social Instincts as Socialist Instincts

After Kautsky's world view was revolutionized in 1875 by Darwin's explanation of ethics as social instincts, he never relinquished this aspect of Darwinian theory, even after he had abandoned natural selection and the struggle for existence in favor of neo-Lamarckism. Prior to settling on a theory of ethics, though, his ethical feelings had inclined him toward socialism. He felt within himself the desire "for the exaltation and liberation of all who are in misery and enslaved. This ethical need is the point of departure for every socialist striving and thinking."[56] Based on his own inner experience, Kautsky thereafter regarded the ethical impulse within humans as roughly equivalent to a propensity toward socialist ideals.

After reading Darwin's *Descent* in 1875, Kautsky was fully persuaded that human ethics corresponded to the instincts of social animals and had arisen through the struggle for existence. In his 1876 historical sketch he followed Darwin's views quite closely, portraying the human struggle for existence as a rivalry primarily between tribes and nations rather than among individuals. Those societies displaying the greatest self-sacrifice, loyalty, sympathy--in a word, morality--among themselves would supplant other groups devoid of these traits. Moral traits would be passed on to the next generation as inherent social instincts. Kautsky departed from Darwin, however, by characterizing the social instincts as communist instincts. He believed that primitive tribes were communist and that the struggle for existence gave communist societies a selective advantage in the early history of humanity. Although never explaining how or why this occurred, he thought that the introduction of private property suppressed the communist instincts and fostered individualism. Why natural selection did not hinder this development he did not say. However, the communist instinct persisted in the human breast, and he believed that it influenced some historical events, such as the defeat of the individualistic Persians by the Greeks, who retained a greater measure of communist instincts.

Not only did Kautsky think that the origin of communist instincts and some aspects of history could be explained by recourse to the struggle for existence, but he also appealed to Darwinian theory in support of his vision of the future. He argued

that because the bourgeoisie is individualistic, it is at a disadvantage in the struggle for existence. The proletariat, which has stronger communist instincts and will further strengthen these by organizing, will triumph because of its selective advantage. Kautsky thus harnessed Darwinism in support of socialism.[57]

Kautsky did not publish an account of his views on the origin of ethics until 1877-78, when he exposed his eclecticism at its worst in a confused four-part article for *Vorwärts*. In the first section, he denied the existence of innate ethical concepts or characteristics, defending a view similar to Büchner's in *Kraft und Stoff* that the environment is decisive in determining moral traits and that there is no inherited conscience. This was diametrically opposed to the Darwinian ideas he had previously embraced and to which he soon returned. In the second part of his article, he asserted that all organisms have not only an ethical instinct for self-preservation, but also an instinct of sociability (*Geselligkeitstrieb*). This sounds more like the Darwinian view, but does not seem consistent at all with his insistence on the exclusive influence of the environment on ethical character in the earlier part of his article. In the fourth part of the article, Kautsky introduced yet another factor contributing to the origins of ethics--the instinct or drive for power (*Machttrieb*). According to Kautsky, the power instinct, though seemingly gruesome and contributing to social injustice, actually restrains social animals from the more appalling forms of the struggle for existence and contributes to the moral perfection of humanity. It does this by reinforcing moral instincts within groups of people struggling for power with other groups.[58] Kautsky soon recognized the inconsistencies of his article, for he never again defended the environmental view of ethics, nor did he ever again mention the power instinct, though he continued to write a great deal in the course of his career on the origin of ethics.

His conversion to Marxism in no way swayed Kautsky from the Darwinian view of the origin of ethics. In the early 1880s he became more convinced than ever of the truth of Darwin's theory that human ethics are innate social instincts. He expostulated against his own previous statement that no conscience exists: "The stronger the social instincts, the stronger the conscience. If these are completely

extinguished in a person, he is *conscienceless*, he is a brute (*Unmensch*), because he has completely departed from the form of the struggle for existence natural for the human, the communist form."[59] Because the social instincts are a weapon in the struggle for existence, they increase and gain priority over the instinct for self-preservation.[60]

Kautsky considered the individualism of bourgeois society an unnatural aberration from the communism of primitive societies. Humans as shaped by nature--the *Naturmensch*--have more highly developed social instincts, which have not disappeared despite being suppressed somewhat by economic, social, and cultural developments. As Kautsky explained to Engels, "What I want to prove is this, that the social instincts are not, as Spencer thinks, a product of culture and therefore much stronger today than in primitive times, but rather that they were at that time already completely developed."[61] By grounding communism in the biological instincts of humans, Kautsky tried to present socialism as natural and individualism as an apostasy from humanity's pristine state. He closed his 1884 article on human social instincts with the statement, "We study the past, not to rave with Rousseau about the return to the primitive condition, but rather to reach the conviction from it, that our efforts are no utopia, but rather are grounded as much in the essence of the human as in the course of historical development." He believed that the social instincts would revive and ultimately triumph, but this time he asserted that it would be a consequence of social and technological developments.[62] This is a shift from his pre-Marxian position, where he argued that the struggle for existence would ensure the victory of socialism by giving a selective advantage to those with more highly developed social instincts.

Even after asserting that Darwinism and socialism had nothing in common, Kautsky continued to argue that the social instincts humans had inherited from the animal world and strengthened through the struggle for existence would benefit the proletariat in their attempts to introduce socialism. Thus he utilized Darwinism in a roundabout way to support socialism. He admitted in a 1906 article on the origin of ethics, "And here Darwinism and Marxism meet together."[63] However, as in his 1884 article, he never suggested that the struggle for existence was still necessary to

increase social instincts. Instead, social instincts would be strengthened in the proletariat through environmental influences and through their participation in the class struggle. Kautsky implied that the class struggle would not function as a selective mechanism, but as a means to galvanize ethical feelings.[64]

When neo-Kantian ethical theories began infiltrating the SPD around the turn of the century, giving impetus to ethical socialism, Kautsky again prescribed evolutionary theory as an antidote to idealism. He had no sympathy for Lange's earlier attempt to synthesize Darwinism and neo-Kantian ethical idealism, but believed that such a combination was inconsistent, since it was undermined by the naturalistic explanation of the origin of ethics provided by Darwin. He was concerned enough with the increasing influence of neo-Kantianism in socialist circles to write *Ethik*, a book refuting their ethical idealism. This book merely explicated in greater detail the same views he had already propounded beginning in 1884, as Kautsky himself admitted.[65] The curious thing about his presentation of evolution in this book is that he continued to locate the origin of ethics in the human struggle for existence, even though he had already abandoned Darwinian natural selection in favor of neo-Lamarckism. Thus we see that he was still unable to break loose completely from Darwinian theory in explaining human evolution. However, he clearly reiterated his position that the future progress and intensification of social instincts would occur through economic and social developments, including the class struggle. Unlike social instincts in animals and heretofore in human society, in the future they would not provide feelings of solidarity merely within one's society, but would be international in scope.[66] Kautsky's view that social instincts would expand to encompass all of humanity and thus abolish wars was not original with him, for Darwin had expressed the exact same idea in *Descent*.[67]

In *Ethik* Kautsky defined social instincts far better than he had previously. They are moral feelings such as altruism, devotion to the community, bravery, faithfulness and submission to the will of society, obedience, discipline, truthfulness, and desire for social approval. These traits are evident in all social animals and are biologically inherent in humans. However, Kautsky distinguished between these

general moral feelings and moral precepts. The latter are present only in human society and are much more variable, though not according to human whim: "But not only are the social instincts not merely conventions, but rather something founded deep in human nature, the nature of man as a social animal; but also the moral precepts are not arbitrary, but originate from social needs."[68] The distinction between moral feelings and moral precepts allowed Kautsky to follow Marx's position on morality as a weapon in the class struggle. Kautsky asserted,

> Every class has its own special ethics, [and] these form a weapon, without which it cannot wage its struggle for existence, [and] which is adapted to its special conditions of existence, [and] to which it must remain faithful, if it should maintain itself and be able to develop its greatest power.[69]

Thus while upholding moral feelings as inherent, natural, and implicitly good, he considered specific moral tenets malleable and suitable only under certain social conditions. He by no means thought that Darwinism justified bourgeois morality, but on the contrary, he believed that it militated against it.

Natural vs. Social Laws: The Problem of Malthus and the Struggle for Existence

The greatest problem confronting Kautsky in his attempt to integrate Darwinism and socialism was how to deal with Darwin's conception of the struggle for existence and its Malthusian basis. Anti-socialist Darwinists continually harped on this aspect of Darwin's theory to demonstrate the impossibility of socialism and the deleterious effect of egalitarianism. Since the anti-socialist polemicists were thus arguing that socialism was unscientific and inconsistent with the laws of nature, Kautsky had to respond to their challenge and ascertain the relationship between socialism and the laws of nature.

In the 1870s Kautsky groped for an answer to this dilemma and vacillated between acceptance of the Malthusian element of Darwinian theory and complete rejection of it. In his 1876 sketch of the history of humanity he placed the human

struggle for existence at the center of his explanation of social development. The same year in a polemic against Georg Seidlitz, Robert Byr, and Friedrich von Hellwald, who all maintained that Darwinism militated against socialism, Kautsky argued that the struggle for existence among humans would promote socialism by increasing social instincts to the point that intraspecific competition would no longer exist among humans. He asserted, "The dreadful law of the struggle for existence necessarily brought to life the socialist idea, and the same law will lead it to victory."[70] The struggle for existence would continue, but would be waged against the rest of nature, not against fellow humans. The problem with his 1876 article is that Kautsky ignored a central issue of Darwinian theory: Malthusian population pressure as the driving force behind the struggle for existence. However, in 1877-78 he confronted this problem by denying the legitimacy of Malthus' views. He claimed that the fruitfulness of organisms naturally diminishes as their food supply increases. He thus opposed Malthus' and Darwin's theory that population naturally tends to outstrip food production.[71]

In 1877 Kautsky also began to draw sharper distinctions between humans and nature to better confront the arguments of the anti-socialist Darwinians, who continually emphasized the continuity between humans and the rest of nature. He maintained that because humans can exercise control over nature and can make it serve their purposes, "the struggle for existence in the human world expresses itself entirely differently than in the animal and plant world." Humans no longer have to obey the dictates of nature, but can shape a harmonious and rational society in which the struggle for existence is subdued. "No longer does nature all-powerfully adjust him [the human] to its laws; more and more he turns the tables on it and adjusts it to himself."[72] Kautsky stopped short of declaring that natural and social laws belong to two distinct realms, but the idea is there in germ.

Kautsky evinced an equivocal stance on the relationship between natural and social laws in his first book, *Der Einfluss der Volksvermehrung auf den Fortschritt der Gesellschaft* (1880, *The Influence of Population Increase on the Progress of Society*), which he completed in 1878, when the Anti-Socialist Law delayed its

publication. Under the influence of Lange and Darwin, Kautsky reconsidered his previous dismissal of the population problem. He argued against his own previous position, which was upheld by numerous socialists, including Wilhelm Liebknecht, that population was self-regulating and the problem would thus solve itself in socialist society. Kautsky was now convinced, like Lange, that "The question, which Malthus brought up, is one of the most important among those which awaits its solution by the present generation." He lamented that Lange had not provided a complete solution, but at least he had grappled with the question, which most socialists were not disposed to do.[73]

Rejecting his previous view that abundant food and better living conditions would limit population growth, in *Einfluss* he agreed with Darwin that there is a natural tendency for all organisms, including humans, to propagate faster than their food supply. Natural laws hold sway over humans as well as nature and "to want to get rid of the struggle for existence is a utopia, which will never ever succeed." However, Kautsky did not believe that humans had to resign themselves to the miserable consequences of overpopulation, but through knowledge of this law of nature could alter its effects according to their own rational purposes. Thereby humans could transform the struggle for existence into a struggle against nature and eliminate the inter-human struggle. Kautsky's suggestion for a permanent solution to the population problem was to increase the use of contraceptives when overpopulation becomes a problem.[74]

Kautsky, however, disagreed with Malthus that overpopulation was the source of misery in contemporary society. Kautsky explained that overpopulation can be either natural or artificial, the consequence either of natural or social laws. Present misery, according to Kautsky, is due to social organization, and the introduction of a socialist mode of production would alleviate the population problem for many years by increasing food production dramatically and distributing it more equitably. Kautsky further complained that Malthus illegitimately borrowed a law of physiology to explain political economy rather than examining economic facts to reach his conclusions. Malthus erred by not recognizing "that a law of physiology can be

hindered in its efficacy, if not also abolished, through social laws."[75] While on the one hand subsuming humans under the population law and the struggle for existence, on the other hand Kautsky opposed the application of natural laws to society.

After 1878 Kautsky began emphasizing even more strongly the independence of social science from natural science. Two factors converged in 1878-80 to move him in this direction. First of all, in 1878-79 Haeckel and other Darwinists began publicly assailing socialism as inconsistent with science. Secondly, around 1880 Kautsky converted to Marxism, and thereafter he followed (but not with complete consistency) Marx's and Engels' distinction between the human and natural realms. He defended socialism in 1879 against the attacks of the biologist Oscar Schmidt by asserting, "Concerning the details of the demands which socialism makes, these are the result of economic research and have as such nothing to do with Darwinism, [and] can therefore neither be founded nor refuted by it."[76] In 1880 he maintained that what holds true for animals and primitive humans does not necessarily hold for nineteenth-century humans, since history shows "a gradual, ever increasing control of nature by humans, i.e., an emancipation from the laws of nature."[77] After 1880 Kautsky indefatigably and vehemently objected to all attempts to extract specific social laws from natural laws, even by those like Enrico Ferri, who tried to base socialism on natural laws.[78] Despite his continuing respect for Lange, he distanced himself from him in 1891, claiming that important differences exist between Lange's Darwinian socialism (Kautsky used the term "darwinistelden" here, an uncommon term with a sarcastic connotation) and Marxian socialism.[79]

One of Kautsky's clearest statements on the inapplicability of biological theory to social theory has often been misconstrued by scholars, who have mistakenly interpreted it as a rejection of evolutionary theory itself. In *Die soziale Revolution* (1902, translated as *The Social Revolution*) Kautsky linked eighteenth-century and early nineteenth-century scientific theories of catastrophism with a revolutionary bourgeoisie. After the bourgeoisie moved beyond its revolutionary stage and favored gradual change, it embraced biological evolution and used it to argue against revolutions as unnatural. However, Kautsky's admission that the acceptance of

scientific theories was conditioned by social views did not in any way imply that he dismissed biological evolution as merely bourgeois science. It simply meant that he opposed any direct application of natural laws to social phenomena, a point he reiterates throughout this passage. His argument was not against evolution, but against drawing social implications from evolution. His retention of evolution is evident in his assertion that some biologists were beginning to allow for more rapid change or mutations in evolution, which illustrates the error of rejecting revolution on biological grounds, though it does not really prove anything, because social and natural developments follow their own distinctive laws.[80]

Even after Kautsky's interest in evolution revived after 1905, he vigorously denied that biology could be used to explain society. In *Ethik* he confessed that there are some similarities between living organisms and human society, but it is false to think that one can deduce social laws from biological laws, since there are also differences between nature and society.[81] When discussing the laws of population in *Vermehrung*, Kautsky argued that technology set humans apart from animals and made them subject to different population laws. Each form of society has its own special population laws that depend on social conditions, not on nature.[82] In *Materialistische Geschichtsauffassung* Kautsky reiterated his position that natural laws cannot be applied to society.[83]

Although he had already distanced social laws from natural laws and denied the inevitability of the struggle for existence among humans in the 1880s, he continued to believe that an intraspecific struggle for existence had occurred in the past and was still being waged among humans, who fought as groups instead of individuals.[84] Indeed he directly equated the class struggle with the struggle for existence, tying together biological and social concepts.[85] However, while relying on the concept of the struggle for existence to explain past and present social developments, Kautsky emphatically rejected its application to future society, at least as far as intraspecific competition is concerned: "Society is therefore the direct negation of the 'struggle for existence.' . . . The abolition of the struggle for existence:

that is truly socialism."[86] In the future the struggle for existence would be solely against nature.

When Kautsky embraced neo-Lamarckism around the turn of the century, he totally abandoned the idea that an intraspecific struggle for existence played a significant role in biological evolution, much less in human evolution. He still used the term struggle for existence, though, but it "does not mean the struggle with other organisms of the same species, but rather the struggle with the whole of nature."[87] He relegated population pressure to an insignificant role in evolution and wrote *Vermehrung* to rescind his earlier treatise on population, *Einfluss*.[88] While attacking the Malthusian element of Darwin's theory, Kautsky tried to salvage Darwin's reputation by distancing Darwin from Malthus. He pointed out that Darwin saw the struggle for existence as competition not only between organisms of the same species, but also between different species as well as between organisms and their environment. Malthus, on the other hand, stressed only intraspecific competition. Another difference he perceived between Malthus and Darwin is that Malthus thought that population pressure produced misery, but Darwin showed that it actually produced higher forms of life. Kautsky speciously argued on this basis that Darwin's theory of natural selection disproves Malthus, because, after all, population pressure cannot produce both misery and higher development in a species.[89] Kautsky failed to remember that Darwin included both elements in his description of the struggle for existence: "Thus, from the war of nature, *from famine and death*, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows."[90]

By adopting neo-Lamarckism, Kautsky deftly evaded the principle objection toward socialism aired so often by anti-socialist Darwinists--the inevitability of the struggle for existence. The temptation increased to build bridges between biological and social theory, though he formally denied this possibility. How successfully he managed to keep the two realms separate, however, is hotly debated. Kautsky's grandson, emphasizing his later work, praised his forebear for extending Marxism by putting the materialist conception of history on a foundation of natural science and

thus unifying biology and sociology. Kautsky allegedly subsumed both nature and society under the law of the adjustment of an organism to its environment.[91] Karl Korsch criticized Kautsky for trying to discover laws common to history and nature.[92] Others, however, have maintained that Kautsky successfully continued to separate nature and society in his works after 1900.[93]

Although Kautsky's views on population theory and the struggle for existence altered considerably during his career, his position vis-a-vis the relationship of natural and social laws remained fairly consistent. He continually remonstrated against the application of natural laws to society and assigned biology and social science to separate spheres of investigation. However, he never denied that there are some similarities and parallels between nature and society, and thus he left room for the possibility that some laws might be the same in both realms, though these laws must be derived independently by investigating the facts of nature and society, not by applying laws from one realm to the other. He also never denied that humans as animals are a product of nature; thus natural laws have implications for humans. However, he did reject the notion that humans are nothing but animals. Through reason and technology they had exalted themselves above the rest of nature and were thus in some measure independent of nature. Kautsky's task was to show relationships between nature and society--such as social instincts and environmental influence--without applying laws and theories of one realm to the other. He walked this intellectual tightrope his entire career. As he explained in *Materialistische Geschichtsauffassung*, "The materialist conception of history rests on the one hand on the recognition of the unity of events in nature and society, on the other hand it shows in the commonality of the evolution of the world the special aspect of social evolution."[94]

Kautsky's Neo-Lamarckian Theory

Like most of his contemporaries in the late nineteenth century, including Darwin and Haeckel, Kautsky saw no contradiction between the Darwinian theory of natural selection and Lamarck's theory of the inheritance of acquired characteristics.

Indeed Kautsky once referred to evolutionary theory as the "Lamarckian-Darwinian theory of descent."[95] Nevertheless, in the 1870s and 1880s, Kautsky, like Darwin, was captivated by the idea of natural selection and the struggle for existence. He focussed attention on these aspects of evolutionary theory more than the Lamarckian elements. Because Kautsky wrote so little about evolution between 1885 and 1905, it is impossible to trace the changes in his thinking that led up to his conversion to neo-Lamarckian theory, which occurred around 1900. Neo-Lamarckism was the doctrine that insisted on the efficacy of the inheritance of acquired characteristics and rejected (or at least minimized) the role of natural selection in evolution. After 1905 Kautsky relegated the struggle for existence to a position of insignificance, though not oblivion, in explaining evolution, for he still did refer on occasion to a truncated version of natural selection.

Kautsky's social views were more compatible with the Lamarckian theory of evolution and undoubtedly made him more amenable to accepting it, but there must have been other reasons for him to abandon Darwinian selection theory. One catalyst was the polarization between the neo-Darwinists, led by Weismann, and the neo-Lamarckians, which became acute in the late 1890s.[96] Kautsky was not at all enamored with the attempts of followers of Weismann to exalt heredity above the environment, especially when explaining human characteristics. He was especially incensed by Cesare Lombroso's theory that criminals have an inborn, instinctual inclination toward crime, which turned crime into a biological characteristic, not a product of social conditions.[97] Reactions against Weismann in the 1890s placed the Lamarckian side of evolution in the spotlight, and Kautsky featured articles in *Die neue Zeit* on Lamarckism around 1900.

When Kautsky finally explicated his new biological views in *Vermehrung*, he raised a variety of biological objections to Darwin's theory, in addition to his rejection of population pressure as a mechanism driving evolution forward. His most telling argument was that tiny, imperceptible variations as occur in nature would not confer a selective advantage to individuals.[98] Darwin would not have agreed with Kautsky that variations are so minuscule, though Darwin never solved the problem of the

origin of variations, and this remained a problematic aspect of his theory. Kautsky's other objections to Darwinism were less weighty and even naive. He argued that if there is a struggle for existence between organisms, then stronger species would extirpate weaker ones and even destroy their own food supply, bringing on their own extinction. Also all the lower organisms would be decimated by higher organisms as they evolved.[99] The fallacy in this line of reasoning is that Kautsky assumed that the survival of the fittest meant the survival of the strongest or more complex. Darwin had meant fittest to mean those best adapted to their environment and believed the struggle produced equilibrium among the various species, who coexist because they have different niches. Finally, Kautsky alleged that Darwinism could not explain the similarity of organisms in a species, which he thought must be due to environmental influence.[100] Why Kautsky thought heredity and common phylogeny could not account for this is unclear.

The theory Kautsky used to replace Darwinism was a blend of Lamarckian ideas and Büchner's pre-Darwinian evolutionary theory and was quite similar to Bebel's explanation for human evolution. Kautsky now emphasized changes in the conditions of life or the environment as the mechanism behind evolution. As the environment alters, the equilibrium in nature is upset and organisms have to adapt to the new conditions. By environmental change, Kautsky was not referring to small-scale fluctuations in weather, but to widespread geologic alterations of the face of the earth. The periods of rapid geological transformations result in rapid biological evolution, because organisms have to adapt quickly to the new conditions in order to survive. In geological periods of relative stability, such as the present one, evolution occurs at a very slow pace. During these periods evolution still occurs, but by a different mechanism--the gradual accumulation of acquired characteristics. Thus Kautsky fused Büchner's environmental explanation with the neo-Lamarckian stress on acquired characteristics, each operating in different geological periods.[101]

Neo-Lamarckism allowed Kautsky to explain human evolution without recourse to the struggle for existence and made the parallels between biological and social evolution seem closer than ever. He referred to both the environment in nature

and the economy in society as "conditions of life" that shaped the course of evolution in each realm. Occasionally he explicitly linked the two together: "The conditions of life determine the kind of its [an organism's] desires, the forms of its actions and its success. This knowledge forms the point of departure for the materialist conception of history."[102] The biological and social evolution of humans now converged, for they were both conditioned by the development of technology. Further, social forms are an integral part of the human environment and thus they would impact biological change.[103]

Evolution, Revolution, and the Dialectic: Socialist Tactics

The role of evolutionary theory in influencing socialist tactics in the pre-World War I era has been hotly debated in socialist circles, and Kautsky's thought is in the center of the debate, since he was the leading socialist theoretician and also heavily influenced by evolution. Since 1929, when Karl Korsch attacked Kautsky as a "crypto-revisionist," numerous socialists to the left of Kautsky have criticized him and the SPD in general for their lack of revolutionary élan. Evolutionary theory was supposedly one of the main culprits in pushing the party from "Hegel to Haeckel."[104] The viewpoint of Korsch and other critics of Kautsky's "Darwino-Marxism" may be briefly summarized as follows: Kautsky had little or no understanding of Hegel and therefore replaced the Hegelian side of Marxism with a Darwinian or evolutionary view. By ignoring the dialectical component of Marx's thought, he remained entrenched in crass scientific materialism à la Büchner and never fully embraced the materialist conception of history. Kautsky's thought was impregnated with scientific determinism, which translated into fatalism and negated the revolutionary praxis-oriented social philosophy of Marx. Kautsky thus promoted a passive wait-and-see attitude.[105]

Kautsky's critics were right that he had never studied Hegel, and he himself admitted that his knowledge of philosophy, including Hegel and Feuerbach, was perfunctory.[106] However, it would have come as some surprise to Kautsky that this

would disqualify him from thinking dialectically.[107] Although Kautsky embraced scientific materialism before Marxism, he noted in his memoirs that he adopted Engels' formulation of the dialectic in its entirety after reading *Anti-Dühring*.[108] He began interpreting both nature and society in terms of contradiction and struggle: "But the means of development is that of struggle. The reconciliation of antagonisms implies the stoppage of development."[109] Kautsky was incensed that Bernstein attacked the Marxian dialectic as unscientific, and he scurried to its defense: "But the driving force of all development is the struggle of contradictions."[110] Before embracing neo-Lamarckism, Kautsky considered biological evolution with its struggle for existence dialectical, but when he backed away from natural selection, he also abandoned Engels' view that nature is dialectical. Those who interpret Kautsky's later evolutionary views as in some sense dialectical are erroneously reading into Kautsky what he did not intend.[111] However, he continued to uphold dialectical development in human society, whereby humans struggle against the environment as well as participate in the class struggle.[112]

Kautsky's materialist conception of history was thoroughly deterministic, but he emphatically denied that it was fatalistic. Darwinism played a crucial role in winning Kautsky to scientific materialism and determinism in the 1870s by overcoming idealist objections to materialism. However, it was scientific determinism in general rather than any specific Darwinian tenet that influenced his materialist conception of history. His writings are littered with terms such as necessity, natural necessity, unavoidable, inevitable, and law when referring to historical developments. He believed that Marx had exalted history to a science by formulating deterministic laws of development.[113]

Kautsky's determinism may have dampened his revolutionary élan, but this influence should not be overstated, since Kautsky often grappled with this issue head-on and rejected the charge of fatalism levelled by his contemporaries. In his polemical struggle with Bernstein, he argued that Bernstein was misrepresenting his position by portraying him as a fatalist. He admitted that he was a determinist, because he--like Marx and Engels--insisted on social development proceeding according to scientific

social laws. However, he denied that determinism entailed fatalism, which he accused Bernstein of conflating. He upheld the role of the human will in shaping historical developments, only he denied that the will was free.[114] Earlier, in his book on the Erfurt Program, he had clarified that inevitable events do not occur apart from human action.[115]

In conjunction with his determinism, the gradualism of evolutionary theory could easily have rubbed off on him and influenced his ideas on social evolution to some extent, as some of Kautsky's critics have charged. Once again, however, Kautsky was aware of this temptation and specifically confronted it by denying that evolution was incompatible with revolution. Kautsky also emphatically disputed that evolutionary theory militated against revolutionary socialism: "Evolution does not exclude revolution; the latter is only a special phase, a special form of evolution that occurs under specific conditions."[116] Thus he not only rejected the application of Darwinian gradualism to social evolution, but he also saw revolution as an inevitable stage of social evolution. His determinism thus did not detract from, but promoted, revolution.

Kautsky's conception of the coming socialist revolution was not always clear, despite his two anti-revisionist works attempting to clarify his position, *Die soziale Revolution* and *Der Weg zur Macht* (1909, *The Way to Power).* Both books advocated a social and political revolution, which Kautsky defined as the assumption of political power by an oppressed class.[117] The timing and nature of the revolution--specifically whether or not it would be violent--remained ambiguous. Usually it seemed that he thought the revolution would be violent. This interpretation is strengthened by a letter Kautsky wrote to Bernstein, where he criticized Bernstein for not defining revolution and then added, "I use the word here in the only way in which it has a meaning, as a violent *political revolution* (*Umwälzung*). The social revolution is either a political revolution that has socialist consequences or it is an empty slogan."[118] However, Kautsky did not believe that the revolution would necessarily occur with one blow as a dramatic overturning of the present order: "I hasten to note

that I hold the revolution for a historical process, which may last shorter or longer, a process which can drag on for decades under heavy struggles."[119]

After 1909 Kautsky split with the left wing of the SPD, who bitterly accused him of abandoning Marxist revolutionary praxis. The debate was not over whether or not the SPD should preach revolution, for Kautsky had persistently upheld the need for revolution. The dispute was over whether or not the SPD should foment revolution by pressing for immediate workers' demonstrations to overthrow the present political and economic structure. Those who wanted immediate action took umbrage at Kautsky's counsel to await more propitious circumstances and presumed he had sold out on revolution.[120] Later leftist critics of Kautsky identified his adherence to Darwinism as a factor tainting his Marxist theory and stripping him of revolutionary praxis.

Three strong arguments militate against the view that Darwinism and evolutionary theory were responsible for Kautsky's centrist view on socialist revolution. First, Kautsky emphatically denied that evolutionary theory affected his social views, particularly his ideas on revolution. Second, Marx and Engels had also adopted Darwinism with alacrity, and in a moment of enthusiasm Marx had proclaimed that Darwinism was "the foundation in natural history for our view."[121] Thus neither Marx nor Engels saw any necessary contradiction between Darwinism and revolution. Dieter Groh, though arguing that Kautsky did transform the Marxist conception of revolution by viewing it merely as a lawful evolutionary development, nevertheless admitted that Marx did not hinder the development of this idea in socialist circles and Engels even furthered it.[122] Third, Kautsky's contemporary opponents on the left, who were pressing for revolutionary activity and complained of Kautsky's passivity, upheld basically the same conception of evolution and scientific determinism. Most of them, Lenin included, had esteemed Kautsky as an orthodox expositor of Marxism until after his break with the radical wing of the SPD.[123]

Socialist Eugenics: The Artificial Selection of Humans

Eugenics became a prominent topic of discussion in Germany beginning in the 1890s and became an organized movement shortly after the turn of the century. Though occasionally entering the discussion, Kautsky remained largely on the sidelines of the eugenics movement. Nevertheless his role in the rise of eugenics was significant in two respects: (1) through the influence he exerted on leaders in the eugenics movement; and (2) through his promotion of eugenics among socialists.

Of the three leading figures in the early German eugenics movement--Ludwig Woltmann, Alfred Ploetz, and Wilhelm Schallmayer--the first two were committed socialists before and during their adoption of eugenical ideas, and Schallmayer was clearly sympathetic to socialism. Woltmann was familiar with Kautsky's Darwinist views and discussed them in his book on the relationship between Darwinism and socialism. However, his commitment to Darwinism and especially the transformation of his ideas toward a form of racist eugenics probably received little or no impetus from Kautsky, though it is possible that he saw some of Kautsky's earlier views as confirmation of his Darwinian socialism.[124]

Ploetz's views were decisively influenced by Kautsky, whose *Einfluss* provided an important stimulus toward the development of Ploetz's eugenics.[125] Kautsky's work helped bring Ploetz to the Malthusian standpoint, and Ploetz--like Kautsky before him--wrestled with how to integrate this with his socialism. Ploetz explained to Carl Hauptmann in 1891 how he solved this dilemma:

> You know that from the standpoint of political economy I would like to be a socialist and Malthusian. But since I am deeply imbued with [the idea of] the importance of natural (and sexual) selection for the maintenance of health and the further progress of humanity, I saw the contradiction between the maintenance of natural selection and the socialist-Malthusian systems and remained inwardly without direction, until I discovered the way out, to transfer the struggle for existence from the personal level to the level of reproductive cells . . . The

> conflict Malthus-Darwin-Nietzsche on the one side, socialism-humanitarian systems on the other side would be solved.[126]

So at the same time that Kautsky was moving away from Malthusian ideas, Ploetz was taking his ideas in the opposite direction.

By reviewing Schallmayer's early book, *Ueber die drohende körperliche Entartung der Kulturmenschheit* (1891, *On the Threatening Physical Degeneration of Civilized Humanity*), Kautsky became one of the earliest to introduce eugenical thinking into the socialist press. Kautsky agreed with Schallmayer that modern society was promoting degeneration and that medicine and hygiene were contributing to this by facilitating the propagation of weaker and inferior individuals. The bourgeois Darwinists' solution of reintroducing the struggle for existence is absurd and hypocritical, according to Kautsky, since all the accomplishments of modern culture work to enervate the struggle for existence. Do they really want to return to primitive society and forfeit their own pride and glory? Kautsky regarded rational social planning as the most beneficial replacement for natural selection. Degeneration could be obviated by removing deleterious environmental influences and promoting healthy conditions of life.[127]

In *Vermehrung* Kautsky devoted an entire chapter to *Rassenhygiene* or eugenics and expanded on the ideas he had articulated in his review of Schallmayer almost twenty years earlier. He still regarded degeneration a pressing problem caused by two factors: (1) poor conditions of life in capitalist society; and (2) the increasing elimination of the struggle for existence, permitting the weak and sick to reproduce. Socialism is an integral component of Kautsky's eugenical program, since it will banish the miserable conditions that stymie progress. When we consider that at this time he was basing his biological evolutionary theory on the influence of environmental conditions, we recognize that for Kautsky socialism would promote the further evolution of the human species. The second point, though, would only be exacerbated in socialist society. However, the detrimental effects of reduced competition could be countered by replacing natural selection with artificial selection. Kautsky expressed tremendous faith in the rationality of each member of socialist

society, since no compulsion beyond the force of public opinion would be required to implement artificial selection. The weak, sick, and inferior would themselves decide not to bear children.[128]

Kautsky shared with most eugenicists the conviction that rational control of human reproduction would counter present degradation and foster biological progress. Since many eugenicists based their views on Weismann's theory of hard heredity (i.e., the rejection of the inheritance of acquired characteristics), it is surprising to find Kautsky as a neo-Lamarckian embracing their ideas. Indeed his presentation of eugenics revealed vestiges of Darwinism in his thinking that directly contradicted the neo-Lamarckian theory he had described earlier in the same book. How, for instance, could the decrease in the struggle for existence be held responsible for the increasing degeneration in contemporary society, when in a previous passage Kautsky had claimed that the struggle for existence played little or no role in human evolution at all? Also, if the environment is the primary influence on biological traits, why would inferior individuals necessarily produce inferior offspring? Kautsky apparently ascribed a greater role for heredity in the course of evolution than he would sometimes admit.

Conclusion

Since Darwin's *Descent* played such a crucial role in converting Kautsky to materialism, the foundational element in his world view, Kautsky naturally accorded Darwinism a prominent place in his thinking. He, like Bebel, appealed to evolution as support for his religious, philosophical, and--for a time--even his social views. Like many of his contemporaries, he saw conflict between religion and science and used Darwinism as a weapon against the forces of clericalism.

Because Kautsky's whole world view was transformed by Darwin's explanation that ethics arises through the process of natural selection, Kautsky was more wedded to the Darwinian theory of natural selection in the 1870s than was Bebel, and he tried to synthesize it with his non-Marxian socialism. After adopting Marxism in the early 1880s, he still retained Darwinism as a biological theory, but

even before this time--and to a greater extent thereafter--he distanced it from social theory, claiming that Darwinism had nothing at all to do with socialism. By keeping the two theories in separate compartments, he avoided having to deal with the points where they intersected and contradicted one another, e.g., the application of Malthus' population principle to human society.

Only after embracing neo-Lamarckism around the turn of the century was Kautsky able to integrate evolutionary theory into his world view in a satisfactory manner once again, since this eliminated the unsavory elements of Darwin's theory that conflicted with his Marxian social views. Although it is impossible to pin down the reasons for Kautsky's shift from Darwinism to neo-Lamarckism, it is likely that his Marxist theory played a significant role, just as it had in Marx's receptivity to Trémaux's non-Darwinian evolutionary theory and Bebel's espousal of environmentalist explanations for evolution. Whether or not this is the case, in 1905, after adopting neo-Lamarckism, Kautsky broke a twenty-year hiatus in writing about evolution (excluding a few admonitions to keep evolution and socialism separate). It was far easier for him to blend Marx and Lamarck than Marx and Darwin. And it was far more tempting to blur the distinctions between nature and society, on which he always formally insisted.

ENDNOTES

1. Kautsky to Engels, 11 November 1882, in *Friedrich Engels' Briefwechsel mit Kautsky*, ed. B. Kautsky, 66.
2. Kautsky to Dodel, 29 December 1882, IISH, Karl Kautsky archive, C 371.
3. Kautsky to Dodel, 3 January 1883, 12 January 1883, and 7 May 1883, IISH, Karl Kautsky archive, C 372-73, C 378.
4. Kautsky, "An unsere Leser," *Die neue Zeit* 1 (1883): 5-6.
5. Kautsky, *Erinnerungen und Erörterungen*, ed. Benedikt Kautsky (The Hague, 1960), 172, 209-10.
6. Kautsky, *Erinnerungen*, 213; Gary P. Steenson, *Karl Kautsky, 1854-1938: Marxism in the Classical Years* (Pittsburgh, 1978), 24-25.
7. Kautsky, *Vermehrung und Entwicklung in Natur und Gesellschaft* (Stuttgart, 1910), v.
8. Kautsky, *Erinnerungen*, 212, 378.
9. Ludwig Gumplowicz, *Der Rassenkampf: Soziologische Untersuchungen*

(Innsbruck, 1883), 181, 193, 176-77.

10. Kautsky, "Mein Lebenswerk," in *Ein Leben für den Sozialismus. Erinnerungen an Karl Kautsky* (Hanover, 1954), 13.

11. Kautsky, *Die materialistische Geschichtsauffassung*, Vol. 1: *Natur und Gesellschaft* (Berlin, 1927), xiii.

12. Kautsky, *Erinnerungen*, 367, 377-78; "Mein Lebenswerk," 13; Steinberg, *Sozialismus*, 50.

13. Kautsky, "Mein Lebenswerk," 17.

14. Kautsky to Engels, 11 November 1882, in *Friedrich Engels' Briefwechsel mit Kautsky*, 66.

15. Steenson, *Karl Kautsky*, 43; Hermann Brill, "Karl Kautsky," *Zeitschrift für Politik* n.s. 1 (1954): 234; Kolakowski, *Main Currents*, 2:31; Walter Holzheuer, *Karl Kautskys Werk als Weltanschauung. Beitrag zur Ideologie der Sozialdemokratie vor dem Ersten Weltkrieg* (Munich, 1972), vi; Steenson, *"Not One Man!*, 198.

16. Kautsky, *Erinnerungen*, 221-22; *Vermehrung*, vii.

17. Kautsky, *Erinnerungen*, 209-10, 217.

18. Ibid, 222.

19. Ibid, 210-14, quote at 214; Steenson, *Karl Kautsky*, 25; Steinberg, *Sozialismus*, 48.

20. Kautsky, "Der Darwinismus und die Revolution," *Sozialdemokrat* 14 (4 April 1880); see also Kautsky, "Der Kampf um's Dasein in der Menschenwelt," *Vorwärts* 38 (30 March 1877), 2; and Kautsky, *Erinnerungen*, 108. Holzheuer emphasizes Kautsky's anti-Christian side, *Karl Kautskys Werk*, 24, 88-91, passim.

21. "Darwin's Verhältnis zu den kirchlichen Bekenntnissen," *Die neue Zeit* 1 (1883): 56.

22. Kautsky, "Die Entstehung der Ehe und Familie," *Kosmos* 12 (1992-83): 348.

23. Kautsky to Haeckel, 20 October 1882, IISH, Kautsky family archive, 25.

24. Haeckel to Kautsky, 15 November 1882, IISH, Kautsky family archive, 308.

25. Ingrid Gilcher-Holtey, *Das Mandat des Intellektuellen. Karl Kautsky und die Sozialdemokratie* (Berlin, 1986), 253-54; Steenson, *Karl Kautsky*, 246.

26. Kautsky to Bernstein, 30 August 1897, IISH, Kautsky archive, C 175.

27. Steenson, *Karl Kautsky*, 7; Marek Waldenberg, "Kautskys Marx-Rezeption," *Internationale wissenschaftliche Konferenz: "Karl Kautskys Bedeutung in der Geschichte der sozialistischen Arbeiterbewegung"* (Bremen, 1988), 53.

28. Holzheuer, *Karl Kautskys Werk*, 21, 91.

29. Geary, *Karl Kautsky*, 86, 94-95, 106.

30. Kolakowski, *Main Currents*, 2:34. Matthias, "Kautsky," 153; and George Lichtheim, *Marxism: An Historical and Critical Study* (NY, 1961), 266, also emphasize continuity in Kautsky's thought; see also Maximilien Rubel, "Le magnum opus de Karl Kautsky: 'La conception materialiste de l'histoire,' (1927)"

La Revue Socialiste 83 (1955): 5.

31. Steinberg, *Sozialismus*, 51-53. Steinberg's position has received widespread acceptance and is repeated by Kelly, *Descent*, 125; Fletcher, *Revisionism*, 12-13; Heinz-Georg Marten, *Sozialbiologismus. Biologische Grundpositionen der politischen Ideengeschichte* (Frankfurt, 1983), 96; Becker, *Sozialdarwinismus*, 2:401-2; Bellomy, "'Social Darwinism,'"44; Peter Müller, "Materialistische Geschichtstheorie und die Begründung der historischen Notwendigkeit des Sozialismus bei Karl Kautsky (1875 bis zur Jahrhundertwende)," (diss., Akademie der Wissenschaften der DDR, Berlin, 1985), 9-10; Catherine Rafferty, "Karl Kautsky--Between Darwin and Marx," *Australian Journal of Politics and History* 36 (1990): 377, 379; Doris Byer, "Sozialbiologie und Austromarxismus. Die natürliche Evolution in Gesellschaftstheorie und Politik" (Diplomarbeit, University of Vienna, 1984), 33-34.

32. Hans-Jurgen Mende, *Karl Kautsky--vom Marxisten zum Opportunisten. Studie zur Geschichte des historischen Materialismus* (Berlin, 1985), 147.

33. Steenson, *Karl Kautsky*, 5, 7, 63-64, 250.

34. Gary P. Steenson, "Karl Kautsky: Early Assumptions, Preconception, and Prejudices," *International Journal of Comparative Sociology* 30 (1989): 34.

35. Kautsky, *Das Werden eines Marxisten* (Leipzig, 1930), 6.

36. Kautsky, *Erinnerungen*, 216.

37. Kautsky, *Vermehrung*, v.

38. Kautsky, *Ethik und materialistische Geschichtsauffassung* (Stuttgart, 1906), 142.

39. Kautsky, "Darwinismus und Sozialismus," *Sozialist* 33 (24 April 1879); *Erinnerungen*, 377-78; "Mein Lebenswerk," 13.

40. Luise Kautsky, "Karl Kautsky," in *Ein Leben für den Sozialismus*, 36.

41. Kautsky to Bebel, 21 December 1879 and 31 October 1883, IISH, Bebel papers 113/1, 113/3 (also in *August Bebels Briefwechsel mit Kautsky*, 3, 6).

42. Kautsky, introduction to *Aus der Frühzeit des Marxismus. Engels Briefwechsel mit Kautsky* (Prague, 1935), 15.

43. Kautsky, *Die historische Leistung von Karl Marx* (Berlin, 1908), 8.

44. Quoted in Steinberg, *Sozialismus*, 52.

45. Steenson, "Karl Kautsky," 41; Zivko Topalovitch, "Mein geistiger Vater," in *Ein Leben für den Sozialismus*, 77; Y. M. Uranovsky, "Marxism and Natural Science," in *Marxism and Modern Thought*, ed. Bukharin et al., 138; Leo Hintermayr, "Sozialismus und Darwinismus. Eine Untersuchung über den Einfluss der Deszendenztheorie auf die Lehren des wissenschaftlichen Sozialismus der Neuzeit" (diss., University of Würzburg, 1931), 23.

46. Kautsky, "Entstehung der Ehe," 192-94, 199-201, 204.

47. Kautsky, "Die sozialen Triebe in der Tierwelt," *Die neue Zeit* 1 (1883): 71; see also *Ethik*, 45.

48. Kautsky, *Ethik*, 37-38.

49. Kautsky, "Die Indianerfrage," *Die neue Zeit* 3 (1885): 107-10, 113; *Sozialismus und Kolonialpolitik* (Berlin, 1907), 45-46; before his conversion to

Marxism Kautsky had upheld a more racist view, "Die Entstehung der ethischen Begriffe," *Vorwärts* 15 (6 February 1878).

50. Kautsky, review of *Beobachtungen über die Psyche der Menschenaffen*, by Alexander Sokolowsky, *Die neue Zeit* 27,1 (1908-9): 727-28.

51. Kautsky, *Die Befreiung der Nationen* (Stuttgart, 1917), 13; see also Müller, "Materialistische Geschichtstheorie," 35-36; John Kautsky, "The Political Thought of Karl Kautsky: A Theory of Democratic, Anti-Communist Marxism," (diss., Harvard University, 1951), 12-13.

52. Kautsky, *Ethik*, 80; see also *Der Weg zur Macht. Politische Betrachtungen über das Hineinwachsen in die Revolution*, 3rd ed. (Berlin, 1920), 46.

53. Kautsky, *Ethik*, 91-92.

54. Kautsky, *Erinnerungen*, 380.

55. Kautsky, *Rasse und Judentum*, in *Die neue Zeit* Ergänzungshefte 20 (30 October 1914): 22.

56. Kautsky, *Erinnerungen*, 187.

57. Kautsky, "Entwurf einer Entwicklungsgeschichte der Menschheit," in *Materialistische Geschichtsauffassung*; *Erinnerungen*, 214-15, 378-83.

58. Kautsky, "Entstehung der ethischen Begriffe," passim; Büchner, *Kraft und Stoff*, 189-90, 198-204.

59. Kautsky, "Die urwüchsige Form des Kampfes um's Dasein," *Sozialdemokrat* 38 (15 September 1881).

60. Ibid; "Soziale Triebe in der Tierwelt," 24, 27, and passim.

61. Kautsky to Engels, 3 October 1883, in *Friedrich Engels Briefwechsel mit Kautsky*, 87.

62. Kautsky, "Die sozialen Triebe in der Menschenwelt," *Die neue Zeit* 2 (1884): passim, quote at 125.

63. Kautsky, "Der Ursprung der Moral," *Die neue Zeit* 25,1 (1906-7): 255.

64. Kautsky, "Noch einiges über Ethik," *Die neue Zeit* 11 (1893): 110-15; "Klassenkampf und Ethik," *Die neue Zeit* 19,1 (1900-1): 213-14.

65. Kautsky, "Ursprung," 223.

66. Kautsky, *Ethik*, 106-10, 120-21, passim; see also Kautsky, "Soziale Triebe in der Menschenwelt," 125.

67. Darwin, *Descent*, 1:100.

68. Kautsky, *Ethik*, 62, 121-22, quote at 123; "Ursprung," 213-14.

69. Kautsky, *Sozialismus und Kolonialpolitik*, 19.

70. Kautsky, "Sozialismus und der Kampf um das Dasein," *Volksstaat* 50 (30 April 1876).

71. Kautsky, "Kampf um's Dasein in der Menschenwelt," *Vorwärts* 38, 40 (30 March and 6 April 1877); "Das Bevölkerungsgesetz und die Bewaldung," *Vorwärts* 5, 7 (13 and 18 January 1878).

72. Kautsky, "Kampf um's Dasein in der Menschenwelt," *Vorwärts* 41, 42 (8 and 11 April 1877).

73. Kautsky, *Der Einfluss der Volksvermehrung auf den Fortschritt der Gesellschaft* (Vienna, 1880), iii-iv, quote at 1; Kautsky to Bernstein, 7 October

1896, IISH, Kautsky archive, C 151.

74. Kautsky, *Einfluss*, 108, 112, 124, 170, 187, 194, quote at 171; see also Kautsky, "Bevölkerungsgesetz," 7 (18 January 1878), and "Tschernischewsky und Malthus," *Jahrbuch für Sozialwissenschaft und Sozialpolitik* 2 (1881): 70-87.

75. Kautsky, *Einfluss*, 27-29, 100, 165-66, quote at 28.

76. Kautsky, "Darwinismus und Sozialismus," *Sozialist* 34 (27 April 1879).

77. Kautsky, "Darwinismus und Revolution."

78. Kautsky, review of *Die Aristokratie des Geistes als Lösung der sozialen Frage. Ein Grundriss der natürlichen und der vernünftigen Zuchtwahl in der Menschheit*, in *Die neue Zeit* 3 (1885): 90-91; "Darwinismus und Marxismus," *Die neue Zeit* 13,1 (1894-95): 709-16; *Karl Marx' Oekonomische Lehren*, 3.

79. Kautsky to Bernstein, 9 October 1891, IISH, Kautsky archive, C 85.

80. Kautsky, *Die soziale Revolution* (Berlin, 1902), 1:8-12; see also *Historische Leistung*, 15; and *Rasse*, 6.

81. Kautsky, *Ethik*, 61, 78.

82. Kautsky, *Vermehrung*, 64, 196.

83. Kautsky, *Materialistische Geschichtsauffassung*, 197-98.

84. Kautsky, "Urwüchsige Form"; "Entstehung der Ehe," 205; "Soziale Triebe in der Tierwelt," 27; "Soziale Triebe in Menschenwelt," 13-19, 45-49, 118-25; Kautsky to Engels, 3 October 1883, in *Friedrich Engels' Briefwechsel mit Kautsky*, 87.

85. Kautsky, "Klassenkampf"; "Ein materialistischer Historiker," *Die neue Zeit* 1 (1883): 538-39; *Weg*, 47-48.

86. Kautsky, "'Phäakenthum,'" *Sozialdemokrat* 28 (6 July 1882).

87. Kautsky, *Ethik*, 46; see also *Rasse*, 36.

88. Kautsky, *Ethik*, 54; *Vermehrung*, vi, 21-25, and passim; *Rasse*, 16.

89. Kautsky, *Vermehrung*, 19-20.

90. Darwin, *Origin*, 459, see also 129 (emphasis added).

91. John Kautsky, "Political Thought," 9, 81.

92. Korsch, "Materialistische Geschichtsauffassung," 204-5, 211-12.

93. Steenson, *Karl Kautsky*, 70, 237-38; J. Marschak, "Kautsky und die junge Generation," in *Ein Leben für den Sozialismus*, 69; Sebastiano Timpanaro, *On Materialism*, trans. Lawrence Garner (London, 1975), 240-41.

94. Kautsky, *Materialistische Geschichtsauffassung*, 1:vii; see also "Darwinismus und Marxismus," 709; *Erinnerungen*, 365; *Vermehrung*, viii.

95. Kautsky, "Darwinismus und Revolution," *Sozialdemokrat* 14 (4 April 1880)

96. On Lamarckism in the 1890s, see Bowler, *Eclipse of Darwinism*, ch. 4.

97. Kautsky, "Lombroso und sein Verteidiger," *Die neue Zeit* 12,2 (1893-94): 241-50.

98. Kautsky, *Vermehrung*, 57-58; *Rasse*, 12; *Materialistische Geschichtsauffassung*, 1:180.

99. Kautsky, *Vermehrung*, 28, 59-60.

100. Kautsky, *Rasse*, 12-15.

101. Kautsky, *Vermehrung*, 49-55; *Rasse*, 12-17; *Materialistische*

Geschichtsauffassung, 1:172, 187; see also Rubel, "Magnum Opus," 8-10.

102. Kautsky, *Weg*, 45.

103. Kautsky, *Vermehrung*, 79-98; *Rasse*, 22.

104. Lichtheim uses this expression in *Marxism*, 244.

105. See Introduction, n. 18.

106. Kautsky to Bernstein, 5 October 1896, IISH, Kautsky archive, C 150.

107. Not all scholars consider Kautsky's familiarity with the dialectic insufficient, either; Carl Schorske even referred to Kautsky's "mastery of dialectical thinking in *German Social Democracy, 1905-1917: The Development of the Great Schism* (NY, 1965), 5.

108. See previous chapter on Engels for discussion of Engels' dialectic and its relationship to Marx's view.

109. Kautsky, *Ethik*, 41.

110. Kautsky, *Bernstein und das Sozialdemokratische Programm. Eine Antikritik* (Stuttgart, 1899; rprt., Berlin, 1976), 23.

111. Rubel "Magnum Opus," 7; John Kautsky, "Political Thought," 10.

112. Kautsky, *Erinnerungen*, 213, 219-22.

113. Kautsky, "Bernstein und die materialistische Geschichtsauffassung," *Die neue Zeit* 17,2 (1898-99): 7; Geary, *Karl Kautsky*, 93.

114. Kautsky, *Bernstein*, 12-18; "Bernstein," 5, 8, 16.

115. Kautsky, *Das Erfurter Programm* (Stuttgart, 1892), 105.

116. Kautsky, "Darwinismus und Marxismus," 712.

117. Kautsky, *Soziale Revolution*, 1:4-6.

118. Kautsky to Bernstein, 18 February 1898, IISH, Kautsky archive, C 180.

119. Kautsky, *Soziale Revolution*, 2:3.

120. Schorske, *German Social Democracy*, ch. 7; Steenson, *"Not One Man!"*, 205-7.

121. Marx to Engels, 19 December 1860, *MEW*, 30:131.

122. Groh, *Negative Integration*, 57.

123. Geary, "Marx," 407.

124. Ludwig Woltmann, *Die Darwinsche Theorie und der Sozialismus. Ein Beitrag zur Naturgeschichte der menschlichen Gesellschaft* (Düsseldorf, 1899).

125. Paul Weindling, *Health, Race and German Politics between National Unification and Nazism, 1870-1945* (Cambridge, 1989), 67.

126. Ploetz to Carl Hauptmann, 24 October 1891, quoted in Becker, *Zur Geschichte*, 1:63.

127. Kautsky, "Medizinisches," *Die neue Zeit* 10,1 (1891-92): 644-45.

128. Kautsky, *Vermehrung*, 206, 260-64.

CHAPTER VII

EDUARD BERNSTEIN AND EVOLUTIONARY SOCIALISM

Although Bernstein was not as enthusiastic as Kautsky about disseminating Darwinism and evolutionary theory, it was clearly a vital component of his world view and had a significant impact on the development of his revision of Marxism. The influence of Darwinism on revisionism has not entirely escaped notice. Walter Benjamin drew attention to it already in 1937, as Roger Fletcher and Peter Emil Becker have done more recently.[1] Fletcher presents Bernstein's evolutionism as kin to the more optimistic evolutionism of Spencer and Kropotkin, but neither he nor anyone else has actually explored the specific evolutionary influences on Bernstein and how this shaped his conception of socialism.

Most Bernstein scholars have ignored the influence of biological evolution on Bernstein's thought, which is surprising considering the superficially obvious parallels between the two. Peter Gay, for example, discusses at length Bernstein's modification of the Marxist conception of history, whereby he replaced the dialectic with social evolution. Gay maintains that Bernstein considered evolutionism the very core of Marxism, but never specifically links Bernstein's conception of social and historical evolution with biological evolution.[2] Steinberg, after exploring the influence of Darwinism on Kautsky and the SPD at length, does not ascribe any role to it in affecting Bernstein's shift toward revisionism.[3] The impact of biological evolution on Bernstein's intellectual outlook and transformation was greater than this silence on the part of scholars suggests.

Bernstein's Early Exposure to Darwinism

The first verifiable encounter of Bernstein with Darwinism occurred in 1878-79, when he departed from Berlin to work as Karl Höchberg's secretary, first in

Lugano and later in Zurich. Considering Bernstein's previous commitment to materialism and socialism, as well as his antipathy for religion, it is all but certain that he had already been exposed to and had probably already embraced the theory of evolution. In any case, Höchberg was an avid Darwinian proponent, who, in his final years in *Gymnasium*, had lived in the home of that famous materialist and advocate of Darwinism, Ludwig Büchner. Büchner's materialism did not cling to Höchberg, for under the influence of Lange--another Darwinist--he embraced Kantian idealism.[4] When Bernstein joined Höchberg in Switzerland, his first task was to assist him with the book he was currently writing, in which he intended to prove that the Darwinian theory could explain the origins of music and other aesthetic senses. Höchberg's work, *Die Lust an der Musik, den Farben und den körperlichen Formen* (*Pleasure in Music, Colors, and Physical Forms*) appeared in 1879 under the pseudonym H. Berg.[5]

Bernstein later disputed the contention that he had become a socialist of Höchbergian stripe in the late 1870s, since he had consistently opposed Höchberg's idealist philosophy and never embraced his socialist theory.[6] Höchberg's socialism was closer to Lange's than to Marx's, since he advocated reform socialism based on ethical ideals rather than revolutionary socialism emphasizing the class struggle. Instead of embracing Höchberg's conception of socialism, however, Bernstein converted to Marxism through reading Engels' *Anti-Dühring* while working for Höchberg in 1878-79 in Lugano. Engels' work, which Bernstein accepted as his "socialist creed," could only have strengthened his conviction of the validity of the Darwinian theory.[7] Indeed by 1882 Bernstein was prompting Engels to contribute an article on Darwin to the *Sozialdemokrat*, but Engels was too busy at the time to comply.[8]

Other likely sources of Darwinian influence on Bernstein were Bebel and Kautsky. Undoubtedly Bernstein read Bebel's popular treatise, *Frau*, which is impregnated with Darwinian themes. When Wilhelm Bracke sent Höchberg the manuscript of Kautsky's *Einfluss*, both he and Bernstein were so impressed by it that Höchberg invited Kautsky to join them in Zurich, where he could continue his studies

while assisting Höchberg in his editorial work.[9] Bernstein and Kautsky became the closest of friends in Zurich, and they must have discussed Kautsky's pet theme, Darwinian evolution, especially since Kautsky wrote numerous articles on Darwinian topics while living in Zurich.

Darwinian Influences during
the Transition to Revisionism

A rather prominent interpretation of Bernstein's revisionism, especially among Marxists, is that it was merely a reflex of economic conditions in the 1890s. According to this view, Bernstein's role was incidental and intellectual influences were insignificant.[10] There is much evidence in favor of this view, since Bernstein himself heavily emphasized economic arguments to support his ideas, particularly the disparity between the predictions of Marx and Engels and the contemporary state of the economy. He confessed that the strongest influence in moving him toward revisionism was his disappointment in the third volume of *Capital*.[11] Others have suggested that the influence of the Fabians, Lassalle, and Lange contributed to Bernstein's revisionism.[12]

Only a few have noted the role of biological evolutionary theory in Bernstein's intellectual transformation. There are cogent reasons for this oversight. First of all, Bernstein upheld the theory of biological evolution during his orthodox Marxist phase, while Marx, Engels, Kautsky, Bebel, and others viewed Marxism and evolution as mutually compatible and even in some sense supporting each other. Thus biological evolution certainly did not entail evolutionary socialism. Second, Bernstein emphasized the economic aspects of his disagreement with Marx's theory and never explicitly argued that biological evolution supported his views. In fact, he contended that it was illegitimate to argue for specific social theories based on biological theories. Thus Bernstein would probably have denied that Darwinism or evolution had helped mold his conception of society. For these two reasons, it would be folly to argue that evolution was decisive in converting Bernstein to revisionism. However, though it was relegated to the background, it was not without significance. Before

we prove this by showing how the concept of biological evolution invaded Bernstein's ideas and rhetoric, let us first examine the influences on Bernstein's thinking during the time that he was moving toward revisionism.

During the 1890s, simultaneous with his progression toward revisionism, Bernstein began to study natural science and Darwinism more intensively than previously. He admitted this himself in an 1894 letter to Kautsky discussing the social Darwinist Heinrich Ernst Ziegler's recent book.[13] Although he continued writing on economic and social subjects, he began contributing articles and reviews to Kautsky's *Neue Zeit* on natural science. He even complained in 1896 that *Die neue Zeit* had too many articles on *Sozialpolitik* and not enough on literature, science, and other fields.[14] In 1890 Bernstein translated a lecture given by the biologist Grant Allen to the Fabian Society, which was then published in *Die neue Zeit* as "Ein Schüler Darwin's als Vertheidiger des Sozialismus" ("A Disciple of Darwin as Advocate for Socialism").[15] In the mid-1890s he reviewed books on Darwinism by Benjamin Vetter, a zoologist and editor of *Kosmos*, and Herald Höffding, expressing interest in and receptivity to evolutionary theory.[16] He further evinced interest in Darwinism by editing and publishing Engels' manuscript on "Der Anteil der Arbeit an der Menschwerdung des Affen" in 1895-96.[17] Bernstein began to take up the cudgels against the social Darwinists in the 1890s, who had renewed their onslaughts on socialism. He wrote review essays to refute the erroneous application of biology to sociology in the works of Ziegler, J. Novicow, and E. Sacher.[18] Although he was challenging the position of the social Darwinists, he was nevertheless imbibing evolutionary doctrine, which he by no means rejected. In his writings and correspondence during the 1890s he showed familiarity with the current state of Darwinian theory and the works of Darwin, August Weismann, Herbert Spencer, Ray Lankester, Otto Ammon, and others.[19] There can be no doubt that Bernstein was engaged in thinking about biological evolution in the period immediately preceding and accompanying his move to revisionism.

More well-known than Bernstein's interest in Darwinism was his study of Lange, especially *Arbeiterfrage*, which many consider an important influence leading

Bernstein toward revisionism.[20] Upon reading Ellissens' new biography of Lange, Bernstein composed a highly sympathetic three-part article on Lange. In preparing to write his article, he intensively studied works by and about Lange and admitted to Kautsky, "The work [about Lange] brings me much pleasure, since I am learning a lot through it."[21] Though critical of various aspects of *Arbeiterfrage*, Bernstein's appraisal of it was largely positive. He commented on the strong influence of Darwin on Lange, who attempted to use Darwinism as a weapon against bourgeois economic theories; unlike later Darwinists trying to refute socialism, Lange distinguished sharply between civilized humans and other organisms. However, Bernstein criticized Lange for too one-sidedly applying the struggle for existence to human society.[22] In 1894 Bernstein wrote a review essay on a new edition of *Arbeiterfrage*, recommending it as still valuable and fresh.[23] The influence of Lange is evident in Bernstein's first and most important book on revisionism, *Die Voraussetzungen des Sozialismus und die Aufgaben der Sozialdemokratie* (1899, *The Presuppositions of Socialism and the Tasks of Social Democracy*, translated as *Evolutionary Socialism)*, especially in the conclusion, where he claimed, "If I did not fear being wrongly understood, . . . I would translate the 'back to Kant' into a 'back to Lange.'" But he made it clear in the same breath that he did not approve of many of Lange's views.[24] While Lange's *Arbeiterfrage* by no means converted Bernstein to Lange's Darwinian social theory, it did force him to grapple with the issue more concretely.

It is probable that the Fabians contributed to Bernstein's appreciation of Darwinism. Bernstein's intellectual debt to the Fabians--many of whom were zealous adherents of Darwinism--has been well documented, despite Bernstein's asseverations to the contrary.[25] The speech by Grant Allen that Bernstein translated was originally presented to the Fabian Society. J. Ramsay MacDonald, who honored Bernstein with a farewell party when he moved from England in 1901, had avidly studied natural science in the 1880s.[26] Bernstein was quite impressed by MacDonald's speech to the Fabian Society in 1895 and a friendship between the two ensued.[27] MacDonald's social views were infused with Darwinian principles, and some of this could have rubbed off on Bernstein.

Other Fabians were equally imbued with the Darwinian spirit, sometimes tempered by Spencerian views.[28] Sidney Webb's social thought was influenced by Darwin, Huxley, and Spencer, as he made quite clear in *Fabian Essays* (1889):

> Owing mainly to the efforts of Comte, Darwin, and Herbert Spencer, we can no longer think of the ideal society as an unchanging State. . . . The necessity of the constant growth and development of the social organism has become axiomatic. No philosopher now looks for anything but gradual evolution of the new order from the old, without breach of continuity or abrupt change of the entire social tissue at any point during the process.[29]

The same year the Fabian Essays were published, another Fabian, David Ritchie, wrote *Darwinism and Politics*, in which he asserted that evolution is "a guide to direct us how to order our lives."[30] Social evolution was also an important part of the world view of Beatrice Webb, for whom Herbert Spencer had been a personal mentor before she married Sidney Webb.[31] H. G. Wells had studied biology for a year under Thomas H. Huxley, and evolution figured prominently in his writings.[32] The political and social thought of Graham Wallas was also colored by evolutionary theory, as were the writings of George Bernard Shaw.[33] Bernstein's contact with Fabian socialists provided him many opportunities to encounter Darwinism and may have made him more receptive to Spencerian ideas than were his compatriots in Germany.

The Biological Component of Evolutionary Socialism

Whatever impact the Fabians may have had on Bernstein's ideas, it is clear that Bernstein's speech to the Fabian Society in January 1897 marked a turning point in his thought. This lecture is interesting because it shows that Bernstein was eager to present Marxism to the Fabians as an evolutionary social theory in full harmony with biological evolution. A preview of his speech in the *Fabian News* announced that he would depict "The real Marx; an evolutionist in human and natural history, in economics and Socialism."[34] In the address itself, which was later published in *The*

Progressive Review, Bernstein made good his promise to portray Marx as an evolutionist in natural history by linking Marx and Darwin: "Marx has so often been compared with Darwin, and, in my opinion, very justly so. That Marx from the beginning took the greatest interest in Darwin's researches, there is not the slightest doubt."[35] After further developing the Marx-Darwin parallelism, Bernstein added:

> But, from all said, so far, it is quite evident that Marx's theory is eminently evolutionary. . . . To Marx, evolution included revolution and *vice versa*; the one was a stage of the other. Not every revolution must be violent or sanguinary. . . . Marx, then, was, if you like to put it thus, a revolutionary evolutionist.[36]

Bernstein later considered this speech his last attempt to defend Marx's views in their entirety, because during his lecture he developed doubts concerning the truth of statements he was making.[37] His stress on the evolutionary side of Marx, which he had buttressed by paralleling it with biological evolution, came to entirely suppress the revolutionary impulses of Marxism. After this speech, he no longer viewed evolution and revolution as compatible and considered Marx's attempted synthesis of the two contradictory.

Despite his rejection of numerous tenets of Marxism that he had previously upheld, Bernstein considered his form of socialism a continuation (and thus revision) of Marx's and Engels' socialist theory rather than a refutation of it. He believed he had distilled from Marxism its fundamental concept, i.e., the idea of evolution and development, and had eliminated its erroneous aspects. Evolution thus became the highest principle of explanation for Bernstein, who wrote, "An idea underlies revisionism, the idea of evolution, the idea of development."[38] Gay maintains that Bernstein's concept of progress, which Bernstein described as "organic evolutionism," was unilinear and more closely related to nineteenth-century positivism than to Marxism.[39] In the sense that Bernstein saw historical progress as continuous rather than dialectical, this may be true; however, because he ascribed a role to ethical activity, his view was by no means unilinear, but resembled Darwin's branching model of evolution. There was no preordained goal or necessary direction of development

in Bernstein's revisionist social theory. He aroused the ire of fellow socialists by declaring, "I openly admit it, I have very little interest or feeling for what is commonly understood as the 'final goal of socialism.' This goal, whatever it may be, is nothing at all to me, the movement [is] everything."[40] Thus his vision of sociology as a scientific discipline was free of teleology, though he admitted that socialism as a political movement did strive toward certain goals.[41] Because of this, socialism could no longer claim to be scientific. Marx, on the other hand, looked forward to the inevitable development of a blissful communist society and equated his vision of the future with scientific predictions.

What Bernstein's evolutionary form of socialism was intended to displace was a revolutionary outlook that expected an imminent collapse or catastrophe to precipitate the fall of the bourgeois order and the introduction of socialism. Bernstein lamented that so many socialists, though ostensibly proponents of evolution, nevertheless espoused this theory of catastrophe.[42] Bernstein thereby implied that his revisionism would do for social theory what Darwinism had done for biology. It would substitute an evolutionary gradualism for a catastrophic explanation.

Bernstein believed that Marx and Engels had erroneously maintained a revolutionary outlook because of their reliance on the Hegelian dialectic. The second chapter of *Voraussetzung*, which unfortunately is not included in the English translation, is entitled "Die Fallstricke der Hegelianisch-Dialektischen Methode" ("The Snares of the Hegelian-Dialectical Method"). In this chapter Bernstein claimed that Marx's and Engels' accomplishments were made in spite of, not because of, the Hegelian dialectic. On the contrary, the dialectic misled them to advocate Blanquism and revolutionary violence.[43] Bernstein no longer believed that all development could be explained by contradiction, since cooperation is also a driving force of development.[44] In 1898-99 Bernstein even alleged that what Marx and Engels had contributed to socialist theory was more in harmony with Spencer's evolutionary doctrines than with Hegel's dialectical philosophy.[45]

Although he made no overt appeals to biological evolution in "Probleme des Sozialismus" nor in *Voraussetzung*, his most famous works laying the foundation for

revisionism, he did occasionally use biological analogies in them, implying that society evolved like organisms. For example, he compared consumer cooperatives to organisms capable of evolving. His account of the evolution of unions sounds remarkably similar to Darwin's theory of the natural selection of chance variations. Unions, he explained, began as elementary organisms, and as they grew, they experimented with various forms of administration (chance variation), until they found the most appropriate form for their further evolution (survival of the fittest). In *Voraussetzung* Bernstein sometimes presented social institutions as organs of evolving organisms.[46] Nevertheless, despite relying heavily on the term evolution, he usually avoided explicit organic metaphors; the passages I have just adduced are exceptions, not typical of the entire book.

In other writings, however, Bernstein made it clear that the social evolution he was describing was indeed comparable to biological evolution. Sometimes this was done rather subtly by describing social development as an organic evolution:

> . . . the solution [for the labor problem] will be found more certainly, will be put into effect more quickly, [and] will be purchased with less disadvantage, the more social transformation comes about through constant, organic evolution.[47]

In one of Bernstein's clearest explications of revisionism, *Der Revisionismus in der Sozialdemocratie* (1909), he made explicit what was only implicit in the above passage. According to Bernstein, Marx conceived of society as an evolving organism, and in the forward to *Capital* he had emphasized the principle of organic evolution. Bernstein cited two sentences from *Capital*, on which revisionists placed special importance: (1) "Even if a society has begun to discover the *natural law* of its movement, it can neither *skip over* nor *decree away natural phases of evolution*." (2) "Contemporary society is no firm crystal, but rather an *organism capable of transformation* and *constantly in the process of transformation*."[48] Just as in his speech to the Fabians, he drew parallels between Marx and Darwin, whose two works of 1859 "in their fundamental ideas breathe the same spirit."[49]

When discussing the Marxist conception of history and social development, Bernstein often compared Marx's accomplishment with Darwin's. He used this comparison rhetorically to the advantage of his revisionist views by noting that Darwinian theory, though correct in its fundamental assertion that species have evolved, has had to be corrected and modified over the years. Marxism, likewise, would have to be adjusted to new evidence if it was to be a scientific social theory. Marx's materialist conception of history needed amendment, according to Bernstein, by giving a greater role to non-economic aspects of society in historical development, while retaining the mode of production as the primary driving force. He thought Marx and Marxists underemphasized the significance of natural and biological influences, among other things. He explained--like Engels' in "Der Anteil der Arbeit an der Menschwerdung des Affen"--that the evolution of the human hand lifted humans above animals by allowing humans to produce tools. This was no news to Marxists, but Bernstein went further by ascribing a significant role to the climate in historical development. He wanted to give nature and biological evolution a greater role in human history than most Marxists would allow.[50]

Bernstein also expressed appreciation for J. Ramsay MacDonald's Darwinian approach to socialism. In a review of *Socialism and Society* (1905), Bernstein described MacDonald's view of social development as a "biological-continuous" conception rather than a "dialectical-catastrophic" one. While not agreeing with every detail of the book, Bernstein nevertheless thought that "in the heart of the matter his conception of socialism and social development is the only one of which it may be said, in our view, that it does justice to the modern knowledge of the laws of evolution."[51] In *Socialism and Society* MacDonald had argued that Marxism was only semi-scientific, because it relied on the Hegelian dialectic instead of the more scientific Darwinian theory. He stated, "Darwin had to contribute the work of his life to human knowledge before Socialism could be placed on a definitely scientific foundation."[52] Bernstein later wrote the foreword to the German translation of MacDonald's *Socialism and Government* (1909), in which he again noted MacDonald's use of the

organic principle in social theory. Bernstein amplified on MacDonald's use of the organic analogy, which he considered apt:

> Organic life is at the same time conservative and revolutionary. It conserves things necessary for functioning and gets rid of things becoming superfluous or harmful. It tolerates advancement, but cannot stand any arbitrary interventions, which ignore the working together of the parts belonging to the whole.[53]

When MacDonald published the English translation of Bernstein's *Voraussetzungen* in 1909, he suggested that it carry the title *Evolutionary Socialism*, which conjured up connections with biological theory that were largely absent in the book itself.[54]

Contending with Social Darwinists:
Natural and Social Laws

While pointing out the parallelism between biological and social evolution and using the Marx-Darwin connection to his rhetorical advantage, Bernstein would have decisively rejected any suggestion that his social theory was an application of biology to human affairs.[55] Although he never denied that there could be connections, relationships, parallels, and analogies between the natural and social realm, he consistently limited the applicability of biology to society by stressing the uniqueness of humanity. He maintained that only through empirical investigation of society could social laws be understood. These may or may not be similar to the laws of nature.

When the English biologist Grant Allen publicly endorsed socialism, Bernstein was elated and used the opportunity to engage in polemics against leading Darwinists such as Haeckel, Spencer, and Oscar Schmidt, who were dismissing socialism as contrary to the law of natural selection. Bernstein pointed out that socialists accepted the biological theory of evolution just as readily as the anti-socialist Darwinists. However, the socialists have not been able to concede that, what once ruled the unconscious world that is dependent on nature as a natural law, must also be a law for humanity, which is conscious of its position in nature and which more and more subjects nature to itself.[56]

Bernstein soon had another occasion to grapple with the relationship of Darwinian principles to society, for Lange had also attempted to construct a Darwinian social theory. One of Bernstein's strongest criticisms of Lange was that he blurred the boundaries between nature and humanity. Lange erred, according to Bernstein, by viewing economics as a part of natural history and not understanding the historical distinction between natural and social laws.[57]

In the 1890s numerous attempts were made to apply Darwinian laws to social theory. The conclusions reached by these thinkers were often inconsistent and contradictory, ranging from the rabidly anti-socialist views of Heinrich Ernst Ziegler and Haeckel to Enrico Ferri's defense of socialism on Darwinian grounds. Bernstein followed this debate carefully and contributed several review essays to the discussion. His conclusion was always the same: Any attempt to apply Darwinian laws to society is based on a misconception. Bernstein was particularly incensed at Ziegler's attempted refutation of socialism on Darwinian grounds, which, according to Bernstein, ignored a vital distinction:

> And like the human, as much as he himself remains a creature of nature in the highest stage of evolution, differs essentially from all other organisms, so also does social science from natural science.[58]

Bernstein reiterated this in his critique of Novicow's biological economic theory:

> The more human society distances itself from the primitive form, the less do the concepts derived from biology fit it, and the attempt to transfer the same to the social relationships of cultured humanity is altogether absurd.[59]

Bernstein, like Engels, argued that humans alone have the capacity to consciously and rationally affect nature and are thus not subject to the same laws governing the rest of nature.[60] While rejecting the direct application of natural laws to society, Bernstein made it clear that he did not deny the lawfulness of social development. In fact, he even admitted that one could properly speak of the natural laws of society, so long as one meant merely the objective laws governing social development and not the application of the laws of nature to society.[61]

Bernstein considered it especially fallacious to apply the Darwinian concept of the struggle for existence to human society. He challenged popular depictions of competition in capitalist society as a form of the struggle for existence by pointing out that in nature the struggle for existence occurs because of a lack of the means of subsistence, while in capitalist society, there exists relative surplus. The Malthusian population principle, which underlies the Darwinian theory of natural selection, is only valid under certain social systems. It is not universally applicable to humans, because human multiplication is limited, while human productivity has no natural limits.[62]

After Bernstein moved to revisionism, he not only rejected the applicability of the struggle for existence to human society, he also denied the necessity of the class struggle. Whereas Marx had elevated the class struggle to the key principle for interpreting the history of society and thus one of the most important of all social laws, Bernstein considered the class struggle a natural law that humans should consciously attempt to overcome:

> But the class struggle is first of all an unregulated driving force in social evolution; it functions like a natural law in a nature independent of humans, where limitless waste of time, work, and material occurs.[63]

The class struggle is thus neither desirable nor inevitable for humans, who can shape their society according to conscious purposes. Socialism should turn its focus away from cooperation with the class struggle and toward eliminating it through rational activity.[64]

Bernstein's position on the relationship of natural and social laws in the 1890s was entirely consistent with the stance Kautsky took in his critique of Ferri, and Bernstein wrote Kautsky that he approved of his article on Ferri.[65] It should come as no surprise, then, that he--like Kautsky--left room for a certain amount of overlap or interaction between biology and sociology, despite the main thrust of his writings separating the two. He admitted at times that there are analogies and similarities between some biological and social laws, though he warned against carrying these too far.[66] He recognized that the investigation of society could never be fully disengaged from biology:

> The questions of the evolution of the family, property and the state in humanity [an allusion to Engels' book], the population question, competition, the question of war, etc. are linked with certain questions of natural science, but they are not themselves questions of natural science as such.[67]

Thus Bernstein left a crack open in the door separating natural science from social theory.

Later Bernstein argued that, while it may be inadmissable to apply the results of natural science to politics, it is perfectly valid to utilize the methods of natural science in explaining political phenomena. The former is the mistake of the reactionary Darwinists Ammon, Ludwig Woltmann, etc., who press analogies between nature and society too far. However, Graham Wallas in *Human Nature in Politics* (1908) took quite a different approach by using the methods of natural science, according to Bernstein in his foreword to the German translation of Wallas' book. Thus Bernstein justified Wallas' attempts to infuse biology into sociology.[68]

After embracing revisionism, Bernstein had even more reason to distinguish between biological and social laws. In contrast to Engels and Kautsky, Bernstein no longer agreed that socialism was strictly scientific. Although it contained some scientific elements, whereby it could explain historical phenomena, it also included goals without any scientific basis. The goals were rooted in human desires and ethics, not in objective circumstances. Bernstein explained his position most clearly in *Wie ist wissenschaftlicher Socialismus möglich?* (*How Is Scientific Socialism Possible?*), where he asserted:

> This goal [socialism] is not merely an act foretold by the theory, whose appearance is more or less fatalistically expected, but rather it is to a high degree a *desired* goal, for whose realization one *struggles*.[69]

Since will and purpose are important ingredients of any socialist theory, socialism can never be purely scientific: "I have said directly, in its program for the future socialism cannot be exclusively scientific, because it is dictated by willing, by the class

struggle."[70] The same holds true for all sociology, according to Bernstein, because it also contains goals and aspirations, not just explanations of past events.[71]

Promoting Human Evolution

Theories on how to improve the human species based on Darwinian theory took two main forms in the late nineteenth century. The first advocated the untrammelled functioning of natural selection in human society, while artificial selection or eugenics became popular later. Both views, however, were based on the view that heredity is the chief determinant of human traits and is relatively fixed. Bernstein, however, like Bebel, was unconvinced that heredity and selection were the most important principles governing human evolution. Although he admitted that they play a role, he argued that environmental influences were as significant or perhaps more so than the selection of heritable traits.

One of Bernstein's most forceful attacks on the selection theory appeared in an article he wrote supporting the idea of unions. He criticized those writers, especially Ammon, who opposed humanitarian intervention in society as detrimental to the selection of the fittest. Bernstein claimed that this theory of selection had its roots in Malthus and abetted the capitalist ideology. The theory emphasizing environmental influences on evolution, however, is eminently democratic or even communistic, according to Bernstein. The establishment and functioning of unions, far from leading to degeneration, as some Darwinians--including Darwin himself (though Bernstein probably did not know it)--feared, would actually lead to an improved humanity by creating a better environment for workers and by instituting a humane form of social selection. The "brutal means of natural selection" will be banished by this future society and unions will play a role in this.[72]

Bernstein also relied on his environmentalist conception of human evolution to counter the arguments of racial theorists, many of whom upheld the Weismannian theory of hard heredity. He believed they overemphasized the influence of inherited characteristics at the expense of education and the conditions of life.[73] He chided Woltmann for ignoring the significance of climatic and social conditions in his zeal to

defend his racial theories.[74] However, he praised Wallas and Hertz for exposing the falsehoods of reactionary racial theories.[75] In addition, Hertz

> delivered a contribution to this argument [between inheritance and environment theory], which is a real advancement of our knowledge, and indeed in the sense, that the position of the environmentalist theory, which is favorable to progressivism, or one may even say, to socialism, has received a very significant strengthening and consolidation through an abundance of historical and other proofs.[76]

Bernstein's environmentalist view of human evolution was entirely consistent with the Marxian view of the malleability of human nature. He believed that humans had tremendous capacity to adapt to the conditions of nature in which they found themselves. However, in his revisionist phase, he no longer believed that a rapid transformation of human nature could be effected merely through a revolution in property relations. He considered this too simplistic, because the economy is not the only factor shaping human nature. Thus Bernstein substituted a gradual change for the sudden transformation of humanity expected by Marx and Engels.

Ludwig Woltmann in the Revisionist Camp

The adage that politics makes strange bedfellows was never more poignantly displayed than in the case of Woltmann and Bernstein. Woltmann is best-known today for his role in spearheading and organizing the racialist wing of the eugenics movement in the early years of the twentieth century, for whose tenets Bernstein had considerable antipathy. However, before embracing racialist ideas after the turn of the century, Woltmann had been a member of the SPD for a decade, and had corresponded with Georg Vollmar, Kautsky, and Bernstein. When Bernstein advanced his revisionist thesis, Woltmann became an immediate supporter. As Bernstein later pointed out, he and Woltmann were more united in what they opposed than in what they supported.[77] Nevertheless there were points of contact between their views of Marxism in the late 1890s, though many of these vanished when Woltmann turned away from socialism toward racialist thinking.

Woltmann had greater success in his attempt to infuse Darwinian theory into socialist ranks than in his short-lived attempt to promote revisionism, though his turn to racism alienated most socialists. Already as a student in the early 1890s Woltmann endeavored to relate Darwinism to socialism.[78] He continued his studies in both medicine and philosophy, receiving doctorates in both fields in 1896. His philosophy dissertation, *Kritische und genetische Begründung der Ethik* (*Critical and Genetic Explanation of Ethics*), was an attempt to synthesize Kant and Darwin. Most of the dissertation dealt with Kant, but Woltmann's express purpose was to use Kant's critical theory to expose the fallacy of "uncritical" applications of Darwinism to human society:

> With certain scientific specialists reason appears to have landed in so much discredit, that they degrade themselves by learning from the animals and their instincts, how humans should arrange their life and society.[79]

According to Woltmann, human reason--itself a product of evolution--exalted humans above the animal realm and made it possible to live in freedom according to ethical laws rather than remaining subject to instincts and natural laws.[80] Woltmann argued along these same lines in a treatise on Marxism, where he criticized social Darwinists for applying the struggle for existence to human society. He claimed that analogies between organic and social evolution ignored the increase of human intelligence and the use of tools, which alter the conditions of evolution.[81]

Although agreeing with Bernstein that a distinction must be maintained between humans and animals, Woltmann's position is actually much closer to Lange, also a neo-Kantian. Both Lange and Woltmann embraced Darwin's theory of natural selection and considered the struggle for existence among humans in some form inevitable, though they believed that humans could exercise rational control over these natural laws to mitigate the harshest aspects of the struggle. Bernstein, on the other hand, did not believe that humans were in any sense subject to laws of nature and had nothing but disdain for the idea that humans were locked in a struggle for existence.

Despite his advocacy of ethical socialism and his desire to place humans on a footing above the animal realm, Woltmann continually sought to infuse socialism with Darwinism. He believed it was desirable to synthesize Marx, Darwin, and Kant. In his defense of Bernstein's revisionism before the Hanover Party Congress of the SPD in 1899 he asserted,

> In our agitation let us rather put in place of the "dialectic" the much more precise and richer concept of "evolution," which is much more comprehensible to the workers! Bebel has indeed cited the spirit of the great Darwin, to whom we stand closer than to Hegel.[82]

The synthesis of Marx and Darwin is also apparent in *Der historische Materialismus* (1900), where Woltmann presented Marx's economic and social theory as a subfield of biology and consciously tried to link historical and biological materialism.[83] The synthesis of Marx and Darwin is more extensive and forthright, of course, in *Die Darwinsche Theorie und der Sozialismus* (1899). In this work Woltmann rejected the separation of Darwinism and socialism into separate spheres of knowledge, which Kautsky and Bernstein had been promoting. He insisted, "Socialism must be brought into a much closer relationship to the theory of natural evolution than has previously occurred." He lamented that most socialists who supported Darwinism never grappled specifically with the theory of natural selection, which he believed needed to be incorporated into socialist doctrine.[84]

Although Woltmann proposed more radical means to achieve equal social conditions than the social reforms advocated by Büchner, their basic positions in the 1890s were not that far apart. Rather than abolishing the struggle for existence among humans, which he considered beneficial, one of the main purposes of socialism would be to restore conditions under which the struggle for existence could function properly, according to Woltmann. Present political and social institutions, including, of course, private property, only hinder the working of nature and could contribute to the degeneration of the human species. Socialism would sweep away the unnatural advantages enjoyed by the bourgeoisie and provide all people with equal opportunity in the struggle for existence. Further, it would reintroduce the group struggle for

existence, which has been replaced in more recent human history by individual struggle. Far from desiring to reduce competition and eliminate inequalities, Woltmann wanted a system that would promote fair competition, so social inequalities would be a true reflection of biological inequalities.[85]

Woltmann became increasingly alienated from socialism as his work on *Politische Anthropologie* (1903) progressed. He hoped his book would capture first prize in the Krupp competition for the best answer to the question, "What do we learn from the principles of evolutionary theory in relation to the inner political development and legislation of the states?" When he was not awarded first prize, he angrily refused a substantial amount of money offered as a lesser prize.[86] Contrary to the Kantian cosmopolitanism he had earlier espoused, in which race was inconsequential, he came to regard race as the key to interpreting history and politics.[87] Woltmann never entirely dismissed Marxism from his ideology, but now he tried to synthesize Marx with Darwin and Arthur de Gobineau, the latter two being predominant.[88] Darwinism began to totally dominate his social thought, as is evident from the goals he had for the new journal he founded in 1902, *Die Politisch-Anthropologische Revue*:

> [This journal] wants to depict the biological and anthropological foundations in the evolution of peoples (*Völker*) and from this viewpoint to try to judge the entire cultural history of the human race. It wants, to put it briefly, to apply the principles of the theory of natural evolution in a critical and consistent way to the social, political, and mental development of the races and state.[89]

As Woltmann applied Darwinism to social development, he began to consider race a factor of supreme importance and began writing books promoting Aryan racial supremacy. By so doing Woltmann lost touch with the socialist movement, including Bernstein, who had no sympathy for Woltmann's new biological and racial social philosophy. Abandoned by his former colleagues, Woltmann then befriended some of his former anti-socialist adversaries, e.g. Otto Ammon.

Conclusion

While not wanting to bring natural and social science too close together, Bernstein acknowledged the parallels between his revisionism and biological evolution. While other factors shaped Bernstein's revisionism more than evolution, biological theories did play a secondary role and were later incorporated into revisionist rhetoric. Both he and Woltmann buttressed their position by referring to Darwinian gradualism. They apparently wanted to present their form of socialism as consistent in some sense with science (Bernstein's friend, J. Ramsay MacDonald, did this even more explicitly in England).

Bernstein's concept of biological evolution was similar to Bebel's and Kautsky's, since they all emphasized the influence of the environment on evolution and denied the struggle for existence, especially in human society. Although Bernstein did not (as far as I know) discuss the inheritance of acquired characteristics explicitly, it is clear that his environmental view was closely related to Lamarckism. In his move to revisionism, Bernstein did not abandon the crucial Marxian distinction between humans and animals, which caused him to reject the application of natural laws to society. Bernstein still had a great deal in common with his erstwhile friends and later antagonists in the SPD, and he remained in the party.

Woltmann, however, though sharing Bernstein's belief in gradualism, upheld a quite different view of biological evolution, which corresponded to a different set of political and social beliefs. He did not maintain the distinction between natural and social theory as rigorously as did Bernstein, and he was fully persuaded of the validity of Darwin's theory of natural selection. Biological inequality and competition were inherent in Woltmann's social theory and were conditioned by his understanding of biology.

ENDNOTES

1. Walter Benjamin, "Eduard Fuchs, der Sammler und der Historiker," *Zeitschrift für Sozialforschung* 6 (1937): 364; Fletcher, *Revisionism and Empire*, 127; Becker, *Sozialdarwinismus*, 2:393. See also Pittenger, *American Socialists*, 23.

2. Peter Gay, *The Dilemma of Democratic Socialism: Eduard Bernstein's Challenge to Marx* (NY, 1952), ch. 6, esp. pp. 133-38.

3. Steinberg, *Sozialismus*.

4. Eduard Bernstein, *Aus den Jahren meines Exils. Erinnerungen eines Sozialisten*, 3rd and 4th eds. (Berlin, 1918), 51.

5. Bernstein, *Sozialdemokratische Lehrjahre* (Berlin, 1928), 68-70; "Karl Höchberg," *Sozialdemokrat* 27 (2 July 1885).

6. Bernstein to Bebel, 20 October 1898, in *Victor Adler. Briefwechsel mit August Bebel und Karl Kautsky*, ed. Friedrich Adler (Vienna, 1954), 259.

7. Bernstein, *Sozialdemokratische Lehrjahre*, 72, 114; *Entwicklungsgang eines Sozialisten* (Leipzig, 1930), 12-13; "Naturwissenschaft wider Gesellschaftswissenschaft," *Die neue Zeit* 12,2 (1893-94): 70.

8. Bernstein to Kautsky, 21 July 1882, IISH, Kautsky archive, D V 1a.

9. Bernstein, *Sozialdemokratische Lehrjahre*, 96-97.

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