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Scientific versus Dialectical Materialism: A Clash of Ideologies in Nineteenth-Century German Radicalism

By *Frederick Gregory**

I

OF THE TWO terms “dialectical materialism” and “scientific materialism” the former is the more familiar. Among philosophers today, “scientific materialism” is sometimes used as a synonym for “physicalism.” In contemporary discussions of materialism it can even be employed to refer to the so-called identity thesis, which identifies every mental state or event with some material state or event.¹ In the nineteenth century, however, it was not uncommon to encounter “scientific materialism” as a label for a metaphysical stance allegedly based on the findings of natural science. Here the intent was to formulate a specific credo, comprising philosophical, ethical, and even political components.

While it is true that science and particularly medicine have provided materialists with factual ammunition against their opponents throughout history, most of the time the bond between philosophical materialism and natural science has not been clearly delineated. The connection between the two largely has been a loosely defined mutual sympathy. It is conceivable, for example, that Marx and Engels could have permitted their brand of materialism to be called scientific; namely, scientific in their own, dialectical understanding of the term.² As a result of Engels’ claim that socialism had become a science with Marx,³ the phrase “scientific socialism” has earned a place within the history of thought. Given Engels’ concern with demonstrating the dialectics of nature through natural science, it is not difficult to imagine that he also might have labeled Marx’s materialism scientific, in which case what G. V. Plekhanov later dubbed

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¹ E.g., David Rosenthal, ed., *Materialism and the Mind-Body Problem* (Englewood Cliffs, N.J.: Prentice-Hall, 1971), pp. 200–202. Cf. also pp. 8–9.

² Engels preferred the phrase “der moderne Materialismus” when referring to his philosophical conception of nature. Modern materialism was allegedly based on mathematics and natural science, and it fulfilled in Engels’ eyes the crucial requirement of being dialectical at the same time it was materialistic. Cf. F. Engels, *Herrn Eugen Dührings Umwälzung der Wissenschaft* [1877] (Moscow: Verlag für Fremdsprachige Literatur, 1946), pp. 10, 28, and below, Sec. VI.

³ *Ibid.*, p. 32.

dialectical materialism might now be known as scientific materialism. In fact, the materialism of Marx and Engels did not become known under this or any other label in their lifetimes, in spite of the fact that both men noted the significant place natural science occupied in their philosophical outlook.

In addition to the Marxist version there were other variants of materialism in Germany during the nineteenth century. Ludwig Feuerbach's critique of Hegelian idealism, which dominated the theological scene in the 1840s, was received as a materialistic correction of the master. At about the same time, the reductionistic program of the students of Johannes Müller was being formulated, although this was not intended as a materialistic system. During the late 1840s and throughout the 1850s the popular materialistic writings of Karl Vogt, Jacob Moleschott, and Ludwig Büchner occupied great attention. Later in the 1860s and 1870s Ernst Haeckel brought Darwin's ideas to the attention of German readers. Of these versions of materialism I have chosen to contrast that of Vogt, Moleschott, and Büchner with Marxist materialism, one reason being that Marx and Engels themselves singled out these three as deserving of special criticism.

The question remains why the materialism of Vogt, Moleschott, and Büchner should be referred to as "scientific materialism." How, for example, does the thought of these three men differ from that of biological mechanists such as Ernst Brücke and Emil DuBois-Reymond? The answer to this lies in the purpose each group of scientists had. Müller's students were concerned with a specific problem of biology—the explanation of organic phenomena. They chose to address this problem by means of the radical suggestion that life could be explained mechanistically, thereby eliminating the need for a special vital force. Since this approach was not intended to serve as a metaphysical explanation of life, they cannot properly be called materialists at all. They were the thinkers F. A. Lange had in mind when he referred to those who retained materialism only as a maxim of scientific research.⁴

Vogt, Moleschott, and Büchner, though closely associated with the scientific community, wrote popular works that went beyond the confines of scientific research. Owsei Temkin has called these three men "metaphysical materialists" because of their efforts against a belief in the existence of any realities outside of "force and matter," including an immaterial human soul.⁵ Naturally proponents of this philosophical brand of materialism were sympathetic to the methodological approach of the biological mechanists. Vogt, Moleschott, and Büchner, however, did not stop where DuBois-Reymond and Helmholtz did. They made their mechanistic materialism into a metaphysical system.

Maurice Mandelbaum has pointed out that materialism is a metaphysical position.⁶ Although contemporary materialists may wish to quarrel with Mandelbaum's claim, there is no doubt that he is correct where nineteenth-century Germany is concerned. Vogt, Moleschott, and Büchner, unlike the biological

⁴F. A. Lange, *The History of Materialism and Criticism of its Importance*, trans. E. C. Thomas, 3 vols. (3rd ed; London: K. Paul, Trench, Trubner, 1925), Vol. II, p. 161. Cf. also pp. 154–155.

⁵Owsei Temkin, "The Idea of Descent in Post-Romantic German Biology: 1848–1858," pp. 323–355 in B. Glass, O. Temkin, and W. Strauss, eds., *Forerunners of Darwin* (Baltimore: Johns Hopkins Press, 1968), p. 325.

⁶Maurice Mandelbaum, *History, Man and Reason: A Study in Nineteenth Century Thought* (Baltimore: Johns Hopkins Press, 1971), p. 22.

mechanists, all qualify as materialists according to Mandelbaum, who categorizes as a materialist anyone who holds: (1) that there is an independently existing world, (2) that human beings, like all other objects, are material entities, (3) that the human mind does not exist as an entity distinct from the human body, and (4) that there is no God (nor any other nonhuman being) whose mode of existence is not that of material entities.⁷ These are metaphysical postulates which are not necessarily entailed in mechanism or reductionism.

Vogt and Moleschott were physiologists, Büchner a medical doctor. The subjects they wrote about clearly reflected the interests of men of science, and the methodology they claimed was modeled on their approach to scientific research. On the other hand, the message they proclaimed was metaphysical materialism; hence the label "scientific materialism." Vogt, Moleschott, and Büchner were not the only scientists to preach materialism to their age, but they were among the first, and in Germany they were among the most popular. When one recalls that Marx and Engels condemned the three, one is naturally curious to learn the grounds on which a materialism of natural science was dismissed. My purpose in what follows is to compare the implications of the materialism preached by these three scientists with the thought of Marx and Engels.

II

Vogt, Moleschott, and Büchner were well known in the second half of the nineteenth century in Germany as popularizers and materialists. Although they did not join forces formally to propagate a program of materialism, they were seen by their contemporaries as, in Büchner's words, "a kind of underground trinity."⁸ It was clear to their friends and foes alike what these men were trying to assert: that the rapidly accumulating developments in natural science were new evidences for materialism.

Vogt and Büchner came from the Duchy of Hesse, Moleschott from Holland. Their lives, like those of Marx and Engels, roughly spanned the nineteenth century. Vogt, eldest son of a Giessen medical professor, studied at Giessen until forced to flee to Switzerland in 1835 because of his radical student activities. He received his medical degree from the newly founded University at Bern in 1839 and spent the next five years with Louis Agassiz at Neuchâtel. Following a three-year stay in Paris from 1844 to 1847, he returned to Hesse where he was soon elected a delegate to the Frankfurt National Assembly. After the collapse of the revolution, Vogt was once again expelled from his fatherland. Eventually he accepted a position as Professor of Geology and Paleontology at the University of Geneva and remained there for the rest of his days.

Moleschott, though a Dutchman, attended a German Gymnasium and also a German university. Completing his medical degree at Heidelberg in January of 1845, he practiced medicine for a brief period in Holland before he returned to Heidelberg as a Privatdozent. His controversial publications led to his

⁷ *Ibid.* Mandelbaum's definition of materialism is not beyond criticism. In particular, the inclusion of atheism as a component of materialism is logically unwarranted. Historically materialists have been atheists, but the relationship is not a necessary one.

⁸ Ludwig Büchner, *Im Dienst der Wahrheit. Ausgewählte Aufsätze aus Natur und Wissenschaft* (Giessen, 1900), p. 140.

departure from the university in 1854, but, like Vogt, he was able to land a position in a Swiss university. As Professor of Anatomy and Physiology Moleschott remained at Zürich from 1856 to 1861. Dutch by birth, German by education, and under Swiss employ, Moleschott was a man without a fatherland. When he accepted a post at Turin in 1861 he finally found a homeland he was willing to call his own. He became an Italian citizen in 1866 and made his final move, to Rome, in 1879.

Like Vogt and Moleschott, Büchner also suffered because of his views. After completing his medical degree at Giessen in 1848, Büchner returned to his native Darmstadt, where he set up a medical practice. In 1852 he accepted a post at Tübingen in the medical clinic, where the provisions of his position specified that he be allowed to give lectures if he so desired. When in 1855 he published his views on science in a book, he caused such an uproar that he was fired from his post. Büchner returned to his medical practice in Darmstadt, where he remained for the duration of his life.

All three men were constantly in demand as public lecturers. Their most significant contribution, however, came from their published works. Vogt's *Physiologische Briefe* of 1844–1847 led the way, followed in quick succession by Moleschott's *Die Lehre der Nahrungsmittel* (1850) and *Der Kreislauf des Lebens* (1852), Büchner's *Kraft und Stoff* (1855), and Vogt's *Köhlerglaube und Wissenschaft* (1855), all widely read books. Vogt's *Köhlerglaube und Wissenschaft* went through four editions within the year it came out, while Büchner's *Kraft und Stoff* eventually reached a twenty-first edition, having been translated into seventeen foreign languages.

All of these works were resplendent with sensationalized materialism. Not only did each author deny the existence of a vital force, but the mechanical determinism each strongly implied seemed to negate the very existence of the soul. In the view of these men it was at least certain that the soul was not immortal. Through an appeal to alleged scientific facts, they were attempting to replace the authority of the church with the authority of science.

III

Scientific materialism *à la* Vogt, Moleschott, and Büchner and dialectical materialism share one important feature: both have a common conceptual connection to the thought of Ludwig Feuerbach. Feuerbach provided for each a materialistic correction to the Hegelian idealism which had so thoroughly dominated the intellectual world of the late 1830s. But each can be related to a particular aspect of Feuerbach's thought; hence Feuerbach provides for us a convenient focal point through which to examine the differences between the scientific and dialectical materialists.

In spite of their common conceptual connection to Feuerbach, dialectical materialism and scientific materialism developed along distinctly separate lines. Marx, for example, was influenced mainly by Feuerbach's philosophical works, in particular his *Philosophie der Zukunft* and *Die Vorläufige Thesen über die Reform der Philosophie*.⁹ These were written after Feuerbach had stunned the world with his book on religion, *Das Wesen des Christentums*, of 1841. Engels' recollection that it was this work which had transformed all the young German communists

⁹ David McLellan, *The Young Hegelians and Karl Marx* (New York: Praeger, 1969), pp. 41, 93.

into Feuerbachians is simply faulty where Marx is concerned. Marx does not mention *Das Wesen des Christentums* in his references to Feuerbach during this period; he refers rather to Feuerbach's philosophical pieces.¹⁰

The scientific materialists, on the other hand, looked almost exclusively to Feuerbach's book on religion and were largely unfamiliar with his philosophical works.¹¹ Vogt was not at all interested in philosophy; in fact, he had a definite aversion to it.¹² His knowledge of Feuerbach came not from his reading of Feuerbach's published material but from personal contact with Georg Herwegh, who was a close friend of Feuerbach's. The one thing Vogt had in common with Feuerbach was a mutual distaste for organized religion as it existed in mid-nineteenth-century Germany. Moleschott also was drawn to the religious side of Feuerbach. It would be difficult to overlook the great similarity between the humanitarian religion Moleschott created from his scientific materialism and that which Feuerbach raised from his philosophical materialism. Finally, Büchner's quotations from Feuerbach clearly indicate that he understood him as the century's great critic of religion. Büchner's frequent criticisms of idealistic philosophy make no use of Feuerbach's critique of Hegel.

More specific differences between these two schools of thought are especially clear in three areas: religion, politics, and philosophy. Marx and Engels took an opposite position to that of the scientific materialists on the various issues arising in these areas: for example, the significance of historical and present-day religion, the stance that should be taken *vis-à-vis* religion in the future, the value of political activity, the brand of political activity that is most effectual in bringing about change, and the kind of philosophical materialism necessary to provide the basis for a move beyond idealism to realism and action. Religion, politics, and philosophy provided the questions that were debated then, and they are the areas which will aid us in our present comparison.

IV

All of the men under scrutiny, without exception, harbored a vituperative anti-clericalism. While it is not necessarily the case that they inherited such an attitude from Feuerbach, it is true that they delighted to use his arguments in their polemics against the church. But Feuerbach had not criticized religion in order to banish it from human experience. He wished to explain the real, human needs that formed what he saw to be religion's foundation. He wanted to replace the alienation caused by theology and false religion with a humanitarian, species-oriented religion founded on love.¹³

The scientific materialists were anti-clerical, but like Feuerbach, they were not anti-religious. Of the three, Moleschott was the most fervent disciple of Feuerbach, and he was also the most outspoken proponent of a new, humanitarian religion. He not only found historic value in Christianity with its emphasis

¹⁰ *Ibid.*, pp. 94–95.

¹¹ An exception to this is Moleschott, who carefully read most of what Feuerbach wrote. Still, Moleschott was impressed more by Feuerbach's views on religion than by his views on Hegel or philosophy. For a more specific treatment of the influence of Feuerbach on the scientific materialists, see Frederick Gregory, *Scientific Materialism in Nineteenth Century Germany* (Dordrecht: D. Reidel, 1977), pp. x, 2, 6, 30, 43, 215, n. 2, 221, n. 7.

¹² Wilhelm Vogt, *La vie d'un homme: Carl Vogt* (Paris, 1896), p. 14.

¹³ Regarding the distinction Feuerbach made between religion and theology, see Eugene Kamenka, *The Philosophy of Ludwig Feuerbach* (London: Routledge & Kegan Paul, 1970), p. 53.

on love, but he denied that the perversions of true Christianity would ever be able to destroy genuine love.¹⁴ Like Feuerbach before him, he transformed the transcendence of God as it was found in traditional religion into a transcendence of the species over the individual. In particular he stressed that a generalized conception of matter in motion took precedence over the special motions of matter known as life. At the end of *Die Lehre der Nahrungsmittel* he spoke of man's dependence on matter in motion in a religious sense: "It is fitting for the philosopher to recognize this dependence, and it is genuine piety to cherish joyously the feeling of relationship with the universe."¹⁵

Nor was Büchner opposed to Christianity in principle. Although he delighted in his demonstration that Christianity was a derivative of Buddhism, he was careful to note that the Christian believer should not feel threatened to find his religion antedated by paganism. The real nucleus of the Christian faith had not been disturbed.¹⁶ From Büchner's analysis of the virtues to be found in Buddhism (and therefore Christianity) the implication was clear: a materialist might well be a Buddhist or a Christian, as long as these were understood properly.

Büchner even conceded that he could speak of his own religion. He identified it from two angles, first as the monistic belief in the supremacy of nature. Every event in the world has happened, is happening, and will happen in the future according to eternal and unchangeable laws of nature, without the possibility of personal intervention.¹⁷ Secondly, Büchner spoke of his religion as Feuerbachian humanism. In this context man was exempted from the world of cause and effect,¹⁸ and the material, spiritual, and moral betterment of society and the individual became "the new religion destined to replace the old, the religion of the future, the religion of love for mankind."¹⁹ Alexander Büchner properly characterized his older brother's dual nature when he referred to him as "the ideological materialist in whom a Christian love of humanity flowed together so wondrously with an inflexible acceptance of naked facts."²⁰

Of the three, Vogt came closest to opposing religion as such, but even he did not take the final step. While he did not in any way support traditional

¹⁴Jacob Moleschott, *Der Kreislauf des Lebens: Physiologische Antworten auf Liebig's "Chemische Briefe"* (2nd ed.; Mainz, 1855), p. 450. Cf. also Albert Lévy, *La philosophie de Feuerbach et son influence sur la littérature allemande* (Paris, 1904), pp. 406, 409.

¹⁵"Dem Weisen geziemt es diese Abhängigkeit zu erkennen, und es ist ächte Frömmigkeit, das Gefühl des Zusammenhanges mit dem grossen Ganzen freudig zu hegen." Jacob Moleschott, *Die Lehre der Nahrungsmittel: Für das Volk* (Erlangen, 1850), p. 256. The English translation distorted Moleschott's words to read: "It is true piety heartily to feel this connection with the mighty Creator of all." *The Chemistry of Food and Diet*, trans. E. Bronner, pp. 305–394 in Vol. VIII of *Orr's Circle of the Sciences*, ed. J. S. Bushmann (London, 1856), p. 394.

¹⁶*Last Words on Materialism*, trans. Joseph McCabe (London, 1901), pp. 77–87.

¹⁷*Fremdes und Eigenes aus dem geistigen Leben der Gegenwart* (Leipzig, 1890), pp. 141–142.

¹⁸*Ibid.* Büchner lifts man above nature only when it suits his purpose; e.g., when he wishes to argue that man is morally responsible. Much of the time he chooses to emphasize that one cannot divorce man from nature. This, e.g., is the thrust of his *Der Mensch und seine Stellung in der Natur in der Vergangenheit, Gegenwart und Zukunft* (Leipzig, 1870); *Liebe und Liebesleben in der Thierwelt* (Berlin, 1879); and *Aus dem Geistesleben der Thiere* (Berlin, 1879).

¹⁹*Das künftige Leben und die Moderne Wissenschaft* (Leipzig, 1889), p. 140. Büchner closed his discussion here with a quotation from Feuerbach: "Menschenliebe ist die einzig wahre Gottesliebe" (p. 141). Cf. also Büchner's *Der Fortschritt in Natur und Geschichte im Lichte der Darwin'sche Theorie* (Stuttgart, 1884), p. 37; and *Über religiöse und wissenschaftliche Weltanschauung* (Leipzig, 1887), p. 72.

²⁰Alexander Büchner, *Das "tolle" Jahr: Vor, während, und nach 1848* (Giessen, 1900), p. 374.

Christianity, Vogt did develop a moral position similar to that Feuerbach had put forth in *Das Wesen des Christentums*. His favorite practice was to challenge those who feared moral collapse in Germany because of the rising prestige of materialism. Vogt was convinced that all the ethical values worth keeping could be guaranteed through materialism. What the religious zealot viewed as a sinful wretch worthy of punishment the materialist recognized as a fellow human being with deficiencies in material makeup. The pious, said Vogt, were concerned for a moral order based on the unequal value of men, where some were elevated and others suppressed. The materialist looked rather for a social order based on the equal valuation of all men, where all were able to enjoy a maximum of good fortune. "Our moral and aesthetic disposition . . . is just as pleased with these fundamentals as it is offended by the fundamentals of the moral world order of our opponents."²¹

The same science, continued Vogt, which had proven that human existence was not immortal also had demonstrated that man was a social being who could exist only in and with society. In place of vengeance the materialist cherished the nurturing of species identity (*Gattungsgefühl*), hoping to foster the notion that all men are equal and have equal rights to the enjoyment of life.²² It was not that Vogt claimed no religion, but that he placed his faith for the future in a new religion.

Marx and Engels, in contradistinction to the scientific materialists, went further than Feuerbach. Merely to be an atheist was not sufficient, for as Marx himself had declared, "atheism is at the outset still far from being communism."²³ Feuerbach's atheistic religion of love gave rise in the 1840s to the "true socialism" of Moses Hess *et al.*, a movement from which Marx quickly felt obligated to disassociate himself.²⁴ A decade later Marx might well have pointed to Vogt, Moleschott, and Büchner as living proof that not all atheists were sympathetic to his cause. The criticisms which Marx leveled against Feuerbach's treatment of religion could also be directed against the scientific materialists' understanding of religion.

Further, the exposure of the anthropomorphic foundation of Christianity, as Feuerbach had carried it out in *Das Wesen des Christentums*, also was not enough by itself. In the fourth of his famous Theses on Feuerbach, written in 1845, Marx spelled out the difficulty:

Feuerbach departs from the fact of religious self-alienation, from the doubling of the world into a religious, imagined world and a real one. His work consists of decomposing the religious world into its secular bases. He overlooks the fact that after completing this task, the main thing still remains to be done.²⁵

²¹ *Köhlerglaube und Wissenschaft* (4th ed.; Giessen, 1855), p. 123.

²² *Ibid.*, p. 122. Vogt believed with Moleschott: "Jede Frucht der Wissenschaft entwickelt die sittliche Kraft der Menschen." Cf. Moleschott, *Zur Feier der Wissenschaft* (Giessen, 1887), pp. 99–100.

²³ From the third Paris manuscript, as translated in T. B. Bottomore, ed. and trans., *Karl Marx: Early Writings* (New York: McGraw-Hill, 1964), p. 156.

²⁴ David McLellan, *Karl Marx: His Life and Thought* (New York: Harper & Row, 1973), pp. 158, 167, 179; and *The Young Hegelians*, pp. 91, 159.

²⁵ Karl Marx and Friedrich Engels, *Werke*, ed. Institut für Marxismus Leninismus beim ZK der SED (Berlin, 1957–1968), Vol. III, p. 534. Marx first addressed the matter of Feuerbach's inadequate treatment of religion in an article for the *Deutsch-französische Jahrbücher* in 1844. A translation of this article can be found in Bottomore, *Marx: Early Writings*, pp. 43 ff., and in R. Niebuhr, ed., *Marx and Engels on Religion* (New York: Schocken, 1969), pp. 41 ff. This article has been cited by McLellan as the most detailed passage on religion Marx ever wrote. For McLellan's analysis of the article, see *Karl Marx*, pp. 87–89.

Feuerbach had reduced religion to its anthropomorphic basis. The scientific materialists were convinced that a reduction of this sort was the correct way to explain the existence of traditional religion. Marx too had inherited from Feuerbach a reductionistic approach; specifically, he adopted the idea of a basis on which proper explanations should rest.²⁶ His complaint against the Feuerbachian understanding of religion was that its basis did not include human sensuous activity. Because of this, said Marx, Feuerbach's conclusions did not escape the very deficiencies he had exposed in religion. Thesis four continues:

The fact, namely, that this secular foundation distinguishes itself from itself and becomes fixed as an independent realm in the clouds is explained only by the self-mutilation and by the self-contradictory nature of this secular basis. This foundation must, therefore, first be understood in its contradiction and then be revolutionized in practice by setting aside the contradiction. For example, after the earthly family is discovered to be the secret of the holy family, the former must then be criticized theoretically and revolutionized in practice.²⁷

By incorporating a central place for action into his very understanding of religion, Marx helped to create an analytical framework in which the line between religion and politics was blurred. The significance of religion could not be evaluated from a purely intellectual point of view according to Marx. Religion was also social and political, and it had to be examined along with other social and political phenomena.

V

The question of the efficacy of political as opposed to social reform provided another line of demarcation between Marx and other would-be radicals. Feuerbach, for example, believed that men could determine their own future if they made politics into a new religion. Marx, who had gone beyond Feuerbach in the sphere of religion, once again took more drastic measures than had the Bruckberg theologian.

Early in 1843, while still under Feuerbach's spell, Marx complained about Feuerbach's lack of emphasis on practice: "The only point that I do not like about Feuerbach's aphorisms is that he talks too much about nature and too little about politics."²⁸ In his philosophical work of 1842 Feuerbach had called for politics to replace religion,²⁹ but in spite of this, Marx was correct about the thrust of Feuerbach's writings.

Meanwhile Marx was developing a position which indicated that he was *not* satisfied with merely a political emphasis. In his review of Bruno Bauer's thoughts on the Jewish question, Marx argued that political emancipation was not enough. Political emancipation from religion did not free men from religious conceptions, as the example of North America demonstrated.³⁰ A year later in his break with Arnold Ruge, Marx stated succinctly that although one must work by way of politics, political emancipation was only a means and not an end.

²⁶ McLellan, *The Young Hegelians*, p. 112.

²⁷ Marx and Engels, *Werke*, Vol. III, p. 534.

²⁸ Letter to Ruge, March 1843. Quoted in McLellan, *The Young Hegelians*, p. 113.

²⁹ "Die Notwendigkeit einer Reform der Philosophie," in W. Bolin and F. Jodl, eds., *Sämtliche Werke*, reprint of 2nd ed., 13 vols. in 12 (Stuttgart: Fromman Verlag, 1959-1964), Vol. II, p. 219.

³⁰ Bruno Bauer, "Die Judenfrage," in Bottomore, *Marx: Early Writings*, pp. 9-10.

Revolution in general—the overthrow of existing power and dissolution of previous relationships—is a political act. Socialism cannot be realized without a revolution. But when its organizing activity begins, when its particular aims are formulated, when its soul comes forward, then socialism casts aside its political cloak.³¹

Marx acknowledged that political activity was a means to a larger goal, but only insofar as it brought society nearer to human emancipation, including emancipation from the political state. At the end of 1844 Marx turned to economics, and in 1845 he and Engels wrote *Die Deutsche Ideologie*, with its critique of Feuerbach and its statement of the materialistic conception of history. The importance of political endeavor dwindled in the minds of Marx and Engels as they became convinced on other grounds of the inevitability of the social revolution the future would bring.

The scientific materialists were here followers of Feuerbach and not of Marx. They revered political activity and political emancipation as the major solution to man's lack of freedom. Although Vogt and the young Büchner were participants in the revolutionary activity of 1848, it did take long for their differences with genuine revolutionaries to show themselves. Of the three under study, Vogt came closest to Marx. His case will serve to illuminate the fundamentally different political perspectives of the German communists and the scientific materialists.

In the 1840s while Marx and Engels were gradually working their way through Feuerbach to the materialist conception of history, Karl Vogt was also in the midst of an important period of his life. In 1844, one year after Marx, Vogt arrived in Paris. For the next three years Vogt lived among and helped to constitute the large international community of malcontents who had come to Paris from all over Europe.

In Paris Vogt immediately established lasting friendships with Mikhail Bakunin and Georg Herwegh, the latter of whom had recently broken with Marx. Both of these men joined Vogt on a month-long scientific research excursion to the Breton and Norman coasts of France in the summer of 1845. Herwegh accompanied Vogt again in the winter of 1846–1847 to Nice on a similar zoological venture. When Alexander Herzen arrived in Paris from Russia in 1847, Vogt formed what proved to be a life-long friendship with him, thus bringing him into close contact with two of the outstanding Russian radicals of the period. Vogt associated with the Russian and German exiles in Paris, who in turn had most in common among the French with the untypical Frenchman Pierre-Joseph Proudhon.

From Paris it was back to Hesse, where Vogt had accepted a call to the newly created post in zoology at Giessen. As a Hessian delegate to the National Assembly Vogt gave his best efforts to the political process, only to see them fail. In the Assembly he sat on the left next to Ruge, although eventually he along with Robert Blum and others split the left into two factions in order to distinguish themselves from Ruge, Ludwig Simon, and others more radical than they. While it was true that Vogt supported such liberal measures as the elimination of capital punishment and the cancellation of the ranks of the nobility, he joined with all the others in condemning Marx's man Wilhelm Wolff who, on the floor of the Assembly, assailed the Archduke and his ministers

³¹Quoted in McLellan, *Karl Marx*, p. 102, from an article in *Vorwärts*, July 1844.

as traitors.³² Vogt's devotion to politics here and later in his life shows that where practice was concerned, he was of one mind with Feuerbach.

It should not be surprising, given Vogt's intimate contact with Bakunin, Herzen, and Proudhon, that he gave vent to his bitter disappointment over the fiasco of 1848 by adopting a doctrine of extreme anarchism. In light of his position up to this point, it is misleading to see in his call for the abolition of all forms of government anything but the result of complete disillusionment. It is true that in Frankfurt he had voiced his suspicion even of a constitutional form of representative government. Yet all of his efforts there were carried out in complete accordance with the democratic assumptions on which the National Assembly was founded. It was natural when these assumptions led to total failure for Vogt to fall back on the anarchistic notions of his Paris friends and to defend them from his own vantage point as a scientist.³³

After this low point in his life had passed, Vogt retreated from such an extreme position and, like Moleschott and Büchner, devoted the latter part of his career to public service and more polite educational propaganda. He worked closely with James Fazy in Geneva, associating with the Swiss left. Three times he was elected to the Grand Conseil du Canton de Genève, twice to the Conseil des États Suisses, and once to the Conseil National.

Marx had never been misled by Vogt's apparent radicalism. As early as 1848 he came out against Vogt in an article in the *Neue Rheinische Zeitung* entitled "Der Märzverein."³⁴ Again in March 1849 Marx referred to Vogt as a "rowdy from the university and a misplaced baron of the Reich," and mockingly as "the loyal sentry of the revolution."³⁵ Further evidence of the disgust Marx and Engels felt for Vogt is clear from their correspondence of 1852.

As the decade of the fifties passed, Vogt reversed his Frankfurt position of opposition to the Prussian crown and began to support a *kleindeutsch* solution to German unification, further antagonizing Marx³⁶ and leading to an open conflict between the two. The result was Vogt's denunciation of Marx and the latter's polemical book-length reply, entitled *Herr Vogt*.³⁷ The fundamental political differences between Vogt the reformist and Marx the revolutionary had ultimately led to mutual denunciation.

³² Marx and Engels, *Werke*, Vol. XIV, pp. 464–467.

³³ This is found in his book *Untersuchungen über die Thierstaaten* (Frankfurt am Main, 1851), esp. pp. 28–31, 153–154. Vogt had also referred to natural science to defend and support his stance at Frankfurt. Cf. Gregory, *Scientific Materialism*, pp. 70, 193–196.

³⁴ Marx and Engels, *Werke*, Vol. XIV, p. 46. Cf. also p. 772, n. 377. It must be said that Marx too was supporting liberal measures at this time. Cf. McLellan's comments on the *Neue Rheinische Zeitung* in *Karl Marx*, pp. 201–202.

³⁵ Marx and Engels, *Werke*, Vol. XIV, pp. 463, 415. This most likely was a result of Vogt's proposals of 1849 in his booklet *Die Aufgabe der Opposition unserer Zeit*. See Wilhelm Vogt, *La vie d'un homme*, p. 78.

³⁶ For Vogt's mockery of the *kleindeutsch* position at Frankfurt, see Herman Misteli, *Carl Vogt: Seine Entwicklung vom angehenden naturwissenschaftlichen Materialisten zum idealen Politiker der Paulskirche, 1817–1849* (Zürich: Leemann & Co., 1938), p. 129, n. 1. For Marx's position on German unification, see his letter to Engels concerning Lassalle's 1859 *Der italienische Krieg und die Aufgabe Preussens* and Vogt's *Studien zur gegenwärtigen Lage Europas* (Geneva, 1859) in Marx and Engels, *Werke*, Vol. XXIX, p. 432; also Vol. XXX, p. 463. For an excellent treatment of Marx's views on German unification, see George Lichtheim, *Marxism: An Historical and Critical Study* (2nd ed.; New York: Praeger, 1965), pp. 65–75.

³⁷ For the story of this encounter see Franz Mehring, *Karl Marx* (Ann Arbor: University of Michigan Press, 1969), pp. 285–297; and Gregory, *Scientific Materialism*, pp. 200–204.

VI

On the philosophical front there were also differences between scientific and dialectical materialism, for Vogt, Moleschott, and Büchner did not mean by materialism what Marx and Engels did. In addition to the general tenets of materialism given above, the scientific materialists tacked on the reductionistic assertion that “whatever properties or forms of behavior particular objects exhibit are ultimately explicable by means of general laws which apply equally to all of the manifestations of matter,” a position Mandelbaum unfortunately defines as “strict materialism.”³⁸ As was noted above regarding atheism, reductionism so understood is not logically demanded by materialism. It is frequently a compatible addendum, but it is misleading to identify it as “strict materialism.”

Vogt, Moleschott, and Büchner clearly implied that the laws to be sought were laws of physics; in fact, they assumed that the general laws were already known and were to be found within the canon of Newtonian mechanics. The appeal to classical mechanics was intended to lend credibility to metaphysical claims about the material nature of reality, and it led, in Vogt’s case, to the bold assertion that “Thought stands in the same relation to the brain as gall does to the liver, or urine to the kidneys.”³⁹ Because Vogt’s statement came in one of the first of the materialistic works of the era, the *Physiologische Briefe* of 1847, it quickly became the slogan used to identify all materialists.

Vogt seemed to be saying here and elsewhere in his works that all was matter in motion.⁴⁰ As was to be expected, he was accused of promulgating a strict mechanical materialism and determinism. When he did not deny such charges—indeed, when he went on to imply that physiology must be reduced to chemistry and physics⁴¹—one could but assume that he had intended to preach determinism. But Vogt was not trying to represent a well-worked-out defense of philosophical determinism at all. He was first and foremost a polemicist, and as such he did not bother his head about epistemological difficulties. What delighted him most was the angry reaction of clerics to his extreme pronouncements.

Strict mechanical materialism, it was assumed by the reading public of the day, was the position of all the new materialists, especially those connected with natural science. There are in fact many passages in the writings of Moleschott and Büchner in which matter was assigned the predominant role over mind. Moleschott, for example, went so far as to explain whole national traits on the basis of diet, while Büchner at one point declared that Isaac Newton’s interest in biblical prophecy was a result of an atrophied brain due to old age.

Büchner and Moleschott, however, were more concerned to be philosophically respectable than was Vogt. In the *Kraft und Stoff* of 1855 Büchner included a chapter entitled “Der Gedanke” to clarify his own position *vis-à-vis* Vogt’s. Vogt had erred, Büchner claimed, when he characterized thought as a secretion of the brain. Thought was nonmaterial; it was a force—“The same force that

³⁸ Mandelbaum, *History, Man and Reason*, p. 22.

³⁹ *Physiologische Briefe für Gebildete aller Stände*, 3 parts (Stuttgart, 1845–1847), p. 206.

⁴⁰ *Ibid.*, p. 485; *Köhlerglaube und Wissenschaft*, pp. 118–120.

⁴¹ “Die Physiologie des Menschen,” *Die Gegenwart*, 1850, 4: 646–648.

digests by means of the stomach thinks by means of the brain.”⁴² Force, as a property of matter, was not identical to matter simply because it was determined largely by matter. The proper way to think of the soul, according to Büchner, was as an expression of a force associated with life, which force was conditioned (*bedingt*) by the characteristic construction of the brain matter.⁴³

Throughout Büchner’s writings he was careful to distinguish between matter and nonmaterial properties of matter. Although the nonmaterial manifestations of matter were conditioned by matter, Büchner was not willing to say that they were completely determined by matter. Men did have a modicum of free will.⁴⁴ Büchner was aware of the attempts on the part of some to view force as the basic entity, with matter as a property of force. At one point he even admitted that from a logical point of view, this was as much a possibility as his materialistic position.

Moleschott, too, qualified the many implications of strict determinism and reductionism in his works. Although he had been one of the first to call for physiology to adopt the methods of physics and chemistry, he denied that the reduction could be complete.⁴⁵ In *Die Lehre der Nahrungsmittel* of 1850 he circumvented deliberately the contradiction between the call to ethical responsibility and deterministic worldview. While he pointed repeatedly to the material basis of mental phenomena, noting that this material basis was subject to general laws, he nevertheless urged men to work for change by cooperating with natural law.

The philosophical significance of materialism is the one issue in which Marx and Engels appear at first glance to have been closer to Feuerbach than were the scientific materialists. Both Feuerbach and Marx had been reared under Hegel’s influence, while only Moleschott of the scientific materialists possessed any appreciation of Hegel. Hence Feuerbach’s critique of Hegel, to which Marx was so indebted, was not anti-Hegelian in the same way that Vogt and Büchner were anti-Hegelian. The latter two denounced Hegel as a speculative idealist who was uninterested in facts. Feuerbach also criticized Hegel for not taking the empirical world seriously, but he had no intention of focusing on facts to the neglect of the world of the ideal.

Why, then, was Feuerbach considered a materialist at all? The major reason is to be found in his critique of Hegel. In his classic piece of 1839 Feuerbach argued that consciousness does not determine being as Hegel taught, but that existence precedes thought. From this he concluded that there could be no distinction between theology, which he thought had only a subjective origin, and Hegelian idealism. For Feuerbach there was nothing objective about either

⁴²“Dieselbe Kraft, die durch den Magen verdaut, denkt durch das Gehirn.” *Kraft und Stoff: Empirisch-naturphilosophische Studien. In allgemein verständlicher Darstellung* (Frankfurt am Main, 1855), p. 137.

⁴³*Ibid.*

⁴⁴For Büchner’s position on the freedom of the will, see *Kraft und Stoff* (5th ed.; 1858), pp. 239–246; *Physiologische Bilder*, 2 vols. (Leipzig, 1861, 1875), Vol. II, p. 167n, and p. 394; *Aus Natur und Wissenschaft*, 2 vols. (3rd ed.; Leipzig, 1874, 1884), Vol. II, pp. 121–122; *Die Macht der Vererbung und ihr Einfluss auf der moralischen und geistigen Fortschritt der Menschheit* (Leipzig, 1882), pp. 75–80.

⁴⁵*Natur und Heilkunde* (Giessen, 1865), p. 48; *Pathologie und Physiologie* (Giessen, 1866), p. 38. On the uniqueness of physiology and the internal relationship among the sciences, see Moleschott’s *Die Einheit des Lebens* (Giessen, 1864), pp. 11–16, and *Zur Feier der Wissenschaft*, pp. 4–15.

theology or Hegel, in spite of the fact that many Hegelians had come to distinguish themselves from the followers of Schiller on the grounds that they alone were concerned with the real world.⁴⁶

It was understandably difficult for Feuerbach to live with the logical difficulty inherent in the thinking of Vogt, Moleschott, and Büchner—the contradiction between mechanical determinism and human responsibility. Feuerbach, however, did not attack the matter head on, but remained forever ambivalent about the relationship between idealism and materialism. On some occasions he sounded like Hegel himself, while on others he confessed openly that he was a materialist.⁴⁷ Most of the time his materialism was at best imprecise, as it was in his first widely read book, *Das Wesen des Christentums*.

The ambiguity with which Feuerbach viewed materialism was, according to Marx's biographer, one of the major contributions he bequeathed to Marx.⁴⁸ As early as in his dissertation Marx recorded his opposition to mechanistic determinism by arguing that Epicurus was to be preferred over Democritus because the former had recognized the autonomy of the human spirit and had emphasized the freedom of individual self-consciousness.⁴⁹ In his 1843 critique of Hegel, Marx characterized crass materialism in what was for him depreciatory terms. Crass materialism was "the materialism of passive obedience, of faith in authority, of the mechanism of fixedly formal activity, fixed principles, views, and traditions."⁵⁰ This bias against mechanism has caused one scholar to argue that Marx's materialism differed from that of the scientific materialists because it was not deterministic.⁵¹

On the other hand, the thrust of the materialist conception of history, with which Marx and Engels are identified, seems to argue that man is conditioned and determined by his surroundings.

The way in which men produce their means of subsistence depends first of all on the nature of the actual means they find in existence and have to reproduce. . . . As individuals express their life, so they are. What they are, therefore, coincides with their production, both with *what* they produce and how they produce. The nature of individuals thus depends on the material conditions determining their production.⁵²

If it was difficult for Feuerbach to live with the contradiction between materialism and idealism, it was impossible for Marx and Engels. Marx was

⁴⁶This, e.g., was the position of the Russians who turned from Schiller to Hegel. Cf. Martin Malia, *Alexander Herzen and the Birth of Russian Socialism* (Cambridge, Mass.: Harvard University Press, 1961), pp. 218–256; and E. H. Carr, *Michael Bakunin* (New York: Vintage Books, 1961), pp. 63–65, 72–74.

⁴⁷Feuerbach's highly favorable review of Moleschott's *Die Lehre der Nahrungsmittel* in 1850 has led some to conclude that he completely forsook his Hegelian unbringing and capitulated to the side of the scientific materialists. For a discussion of the literature against and in favor of this view, see Gregory, *Scientific Materialism*, p. 234, n. 60.

⁴⁸McLellan, *The Young Hegelians*, p. 112. Others have noted the leeway in Marx's thinking about materialism. Cf. Loren Graham, *Science and Philosophy in the Soviet Union* (New York: Knopf, 1972), p. 28.

⁴⁹McLellan, *Karl Marx*, pp. 37–38.

⁵⁰"Critique of Hegel's Philosophy of the State," pp. 151–202 in *Writings of the Young Marx on Philosophy and Society*, ed. Loyd D. Easton and Kurt H. Guddat (Garden City, N.Y.: Doubleday, 1967), p. 186.

⁵¹Graham, *Science and Philosophy*, p. 27. Graham makes a similar claim for Engels (p. 38).

⁵²*The German Ideology* (1846), ed. R. Pascal (New York: International Publishers, 1967), p. 7.

too rigorous a thinker to avoid the difficulty. He could never be satisfied merely to polemicize against the prevailing idealistic philosophy by means of materialistic determinism, as was done in scientific materialism. As for Engels, there are those who claim that his perception of the basic problem was not as profound as that of Marx, a charge we shall return to below. It is clear, however, that Engels also thought it necessary to denounce Vogt, Moleschott, and Büchner and to distinguish his doctrine from theirs. Both Marx and Engels demanded a resolution to the problem. They viewed scientific materialism as an intellectually shoddy system of thought, and they considered scientific materialists mere popularizers and sensationalists. What here has been called scientific materialism Marx and Engels dubbed *Vulgärmaterialismus*.

If Marx and Engels are distinguished from the others by their resolution of the difficulty, what is the nature of their resolution? Ironically, they established their uniqueness here by returning to Hegel. Hegel's system contained historical determinism based on the dialectical processes that gave birth to Absolute Spirit. But Hegelian historical determinism rejected all authority external to the individual, a deficiency which Feuerbach had exposed so clearly. The solution, which Marx and Engels found in the materialist conception of history, was dialectical materialism.

Vogt, Moleschott, and Büchner held that the general laws governing matter were eternal and unchanging, that all the diverse forms of organized matter were explicable in terms of one set of basic laws. Nature was "out there," and to comprehend nature one had to discover the pre-existing laws governing matter. They believed that if this was done, the natural processes we observe would be explained in terms of these laws.

Marx viewed the epistemological assumptions of the scientific materialists, in which facts immediately present themselves, as the product of capitalistic relations of production.⁵³ According to Marx, it is necessary to reject a simple subject-object dichotomy along with the epistemological framework upon which it is based. This much Marx had learned from Hegel, who taught him that the categories of thought were not static, as they are in what Herbert Marcuse calls "positive philosophy,"⁵⁴ but constantly subject to negation. This meant that reality and consciousness were ultimately bound up with one another and could not be separated from one another. But Marx then followed Feuerbach in criticizing Hegel for concluding that "consciousness determines being." For Marx, as for Feuerbach, there is a natural substratum which serves as a necessary condition for the activity of the human consciousness.⁵⁵ Thus Marx seemed to be a materialist, though according to Mandelbaum the position thus far enunciated is not an adequate characterization of materialism *per se*.⁵⁶ Up to this point Marx has simply disagreed with the epistemological categories of the scientific materialists and has revealed a basic sympathy for their respect for the primacy of matter.

It is with Marx's move beyond Feuerbach, as enunciated in the famous Theses, that his disagreement with the scientific materialists becomes complete. Here

⁵³Georg Lukács, *History and Class Consciousness*, trans. R. Livingstone (Cambridge, Mass.: MIT Press, 1971), p. 7.

⁵⁴Herbert Marcuse, *Reason and Revolution* (Boston: Beacon Press, 1960), pp. 325-327.

⁵⁵Bottomore, *Marx: Early Writings*, p. 123.

⁵⁶Mandelbaum, *History, Man and Reason*, p. 24.

Marx attacks Feuerbach's conception of the substratum from which thought emerges. Feuerbach, like the scientific materialists, views the substratum as an object of perception, as if the categories of thought were only to be matched to reality. But, as Georg Lukács points out, "the conscious subject is not defined here as in Kant, where 'subject' is defined as that which can never be an object. The 'subject' here is not a detached spectator of the process."⁵⁷ The subject is itself bound up with the natural substratum. Therefore the actions of the subject are themselves part of the substratum. "Getting acquainted with reality constitutes shaping and changing it. Epistemology ceases to be a merely reflective theory of cognition, and becomes the vehicle for shaping and moulding reality."⁵⁸

Marx's dialectic involves more than detached cognition of reality; it includes the activity of the subject as well. Since the subject helps to make reality what it is, any explanation of reality must be an historical explanation. Marx's linking of epistemology and history leads to an historicization of epistemology itself.⁵⁹ Marx's approach, therefore, is far removed from mechanism or reductionism, although he admitted that dialectical epistemology was impossible in capitalistic society. Alienation preserves the dichotomy between subject and object, thereby distorting true cognition. That Marx's historical approach to epistemology did not change over the course of his lifetime has been demonstrated clearly by Shlomo Avineri.⁶⁰

It is difficult to know how completely Engels agreed with Marx in his understanding of nature. Some have argued that their views on the philosophy of natural science are virtually inseparable.⁶¹ Like Marx, Engels emphasizes the necessity of historical perspective when explaining reality. On the other hand, it has been pointed out that Engels' claim that nature *itself* is dialectical removes the subject from performing the active role of changing reality.⁶² But the active role of the subject comprises the essence of Marx's dialectic. If dialectical laws are "efforts to describe the most general uniformities in the processes of change that occur in nature,"⁶³ then, like mechanical laws, they await discovery by man and are subject to all the argumentation and revision surrounding the enunciation of any scientific law. Engels, in considering nature apart from the knowing subject, commits the same error as the scientific materialists. Thus Mandelbaum's argument that the real difference between Engels and the scientific materialists is to be found in the disparity of their views of the goals of scientific understanding loses some of its strength. Perhaps it lies after all solely in Engels' critique of the science of mechanics as the foundation for scientific explanation.⁶⁴

The fundamental contrast between dialectical and scientific materialism can be summarized in the rejection by Vogt, Moleschott, and Büchner of the idea

⁵⁷ Lukács, *History and Class Consciousness*, p. 21.

⁵⁸ Shlomo Avineri, *The Social and Political Thought of Karl Marx* (Cambridge: Cambridge University Press, 1968), p. 68.

⁵⁹ *Ibid.*, p. 75.

⁶⁰ *Ibid.*, pp. 73–74.

⁶¹ David Joravsky, *Soviet Marxism and Natural Science* (New York: Columbia University Press, 1961), pp. 4, 6 f.

⁶² Lukács, *History and Class Consciousness*, pp. 3–4.

⁶³ Graham, *Science and Philosophy*, p. 52.

⁶⁴ Mandelbaum, *History, Man and Reason*, p. 25.

of contradiction in the subject matter of science. To the scientific materialists contradiction implies the imperfection of a theory. To Marx contradictions do not mean that knowledge is imperfect; rather, they are necessary indications of the dynamic nature of knowledge itself.

Indeed, the perception of negations as “contradictions” is for Marx a mark of capitalistic relations of production. In Marxian dialectic there is no contradiction between a scientific explanation of reality and man’s moral responsibility to act. On the contrary, an explanation of reality which does not involve the acting subject at its core is not “scientific.” Existence does precede thought, but thought arises out of the problems of existence. In Marxian terminology, social being, not being, determines consciousness. Marx has attempted to give a human meaning to natural science.

In the end, then, the scientific materialists once again prove to be closer to Feuerbach than do dialectical materialists, although this time the issue is not as clear-cut as in earlier comparisons. Both Feuerbach and the scientific materialists left the contradiction in their thought unresolved, but only in Feuerbach was the ambiguity explicit. It is up to the scholar to see through the polemics of Vogt, Moleschott, and Büchner to the contradiction implicit in scientific materialism.

With this fundamental contrast between scientific and dialectical materialism aside, however, there are two minor differences between the two camps which demonstrate that the relationships among the philosophical positions of the scientific materialists, Feuerbach, and Marx and Engels are not entirely simple. These differences have to do with the manner in which each camp appealed to empiricism, and with the perception of each of natural science. They will provide us with evidence that Marx and Engels *were* in some ways closer to Feuerbach than were Vogt, Moleschott, and Büchner.

Although both dialectical and scientific materialists emphasized that a consideration of empirical reality was necessary to philosophy, the scientific materialists wrote as if it were sufficient. Feuerbach was mistaken by many to have been in agreement with scientific materialism because of his systematic development of *Sinnlichkeit* as the basis of his correction of Hegel. But Feuerbach was adding *Sinnlichkeit* to Hegelian self-consciousness, not substituting for it.⁶⁵ Feuerbach’s defense of empiricism was penned in the jargon of the Hegelian upbringing he never completely left behind. The scientific materialists would never defend empiricism in terms of *Sinnlichkeit*.

Marx and Engels also did not concede to the scientific materialists that an emphasis on empiricism was a sufficient basis for philosophy, in spite of their great respect for empirical criterion of truth in natural science.⁶⁶ The ambivalence of Feuerbach, Marx, and Engels in the face of materialism is in this context understandable, for they could not identify with the position popular materialism had come to represent.

Even natural science was understood by Feuerbach, Marx, and Engels in a very different sense from the assumptions of Vogt, Moleschott, and Büchner. The former three invariably spoke of natural science in a broader, more philosophical context than did the latter. In *Das Wesen des Christentums* Feuerbach

⁶⁵Gregory, *Scientific Materialism*, pp. 2–4, 22–25.

⁶⁶Joravsky, *Society Marxism*, pp. 11–13.

referred to himself as a *geistiger Naturforscher*, by which he meant to emphasize that his book contained no *a priori* propositions, no products of speculation.⁶⁷ He admitted, however, that his interests were different from those of Vogt, Moleschott, and Büchner. The latter were concerned with natural history, while he was preoccupied with human history. Chemistry and physiology knew nothing of the soul or God; only human history had introduced such notions.⁶⁸ Here again it was clear that Feuerbach was not a materialist of the same stripe as Vogt, Moleschott, or Büchner. When he claimed that natural science was superior to all abstract sciences,⁶⁹ he was including under natural science philosophical elements with which the scientific materialists would be uncomfortable.

Marx's humanization of natural science was in a sense made possible by Feuerbach, for it came about as a result of Marx's criticism of Feuerbach. Feuerbach's *Philosophie der Zukunft* was the main source for Marx's discussion of nature.⁷⁰ Feuerbach had once referred to anthropology as the crown of the natural sciences. Although he meant something different from Feuerbach, Marx was sympathetic to Feuerbach's emphasis on man. "Natural science will later comprise the science of man just as much as the science of man will embrace natural science: there will be one single science."⁷¹ Sense experience was a crucial aspect of this new science, and sense experience was human. As he was for Feuerbach, man was the necessary focus of attention for Marx.

VII

The differences between scientific and dialectical materialism in religion, politics, and philosophy are visible from the manner in which the proponents of each relate to the thought of their common ancestor, Ludwig Feuerbach. Both follow Feuerbach's lead in criticizing religion, but Marx and Engels went beyond Feuerbach and the scientific materialists by denouncing the notion of religion per se. Vogt, Moleschott, and Büchner were essentially kindred spirits with Feuerbach with regard to religion, while Marx and Engels were far more radical.

In the political sphere much the same distinction between scientific and dialectical materialism holds. Feuerbach and the scientific materialists concentrated their attention on education, propaganda, and popularizing. Action followed, they thought, from the contents of their message. Further, action was in the main restricted to political efforts carried out within the emerging value structure of German liberalism. Martin Malia's characterization of western European radicals as opposed to Russian intransigents fits the scientific materialists to a tee: they "tended to slide into reformism and compromise with the existing order at the first opportunity."⁷²

Marx and Engels, on the other hand, incorporated practice *into* the very

⁶⁷ Ludwig Feuerbach, *Sämtliche Werke*, 10 vols. (Leipzig, 1846–1866), Vol. VII, pp. 9–10, 11.

⁶⁸ In an 1867 letter to a school teacher in Stuttgart. Cf. Bolin and Jodl, *Sämtliche Werke*, Vol. XIII, p. 339.

⁶⁹ *Ibid.*, Vol. II, p. 380.

⁷⁰ McLellan, *Karl Marx*, p. 127.

⁷¹ Quoted in *ibid.*, p. 122. McLellan points out that the main source for Marx's discussion of nature was Feuerbach's *Philosophie der Zukunft* (p. 127).

⁷² Malia, *Alexander Herzen*, p. 222.

content of their message. They were not obligated to take on the political assumptions of the society in which they found themselves: they were open to the possibility of rejecting those assumptions and values in favor of an emerging set of socialistic values. They were, in short, revolutionaries, not reformers.

In philosophy Marx and Engels seem at first glance to side with Feuerbach. All three, for example, harbored a definite ambivalence toward mechanical, deterministic materialism, due no doubt to their common ancestor Hegel. The crucial difference, however, is evident in the insistence of dialectical materialists to resolve the apparent contradiction between mechanical determinism in the world of objects, of which man is one, and human responsibility in the world of subjects, of which man is also one. The world of objects was not permitted to exist in total isolation in Marx's thought. He refused to presume that the objective world was uninfluenced by the knowing subject. The subject-object dichotomy, so fundamental an assumption for the scientific materialists, was rejected in favor of a dialectical philosophy.

Feuerbach and the scientific materialists, because they had not found a place for practice within their philosophical systems, did not concern themselves with the contradiction alluded to above. Feuerbach's Hegelian upbringing left an imprint upon him that showed itself in the ambivalence he exhibited in the face of this contradiction. Vogt, Moleschott, and Büchner, on the other hand, were not primarily philosophers, but polemicists, and that is their significance for nineteenth-century German history.