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KARL MARX

DOCTORAL DISSERTATION

TRANSLATION AND COMMENTARY

MICHAEL GEORGE

2012

THE DIFFERENCE BETWEEN THE
DEMOCRITEAN AND EPICUREAN
PHILOSOPHY OF NATURE

KARL MARX

TRANSLATED BY

MICHAEL GEORGE

ACKNOWLEDGEMENTS

With thanks to Tamsin Drury, who was kind enough to lend me an elderly, but perfectly functioning, MacBook when my own computer departed for higher things. I must thank the staff of the John Ryland's Library of the University of Manchester for their unfailing assistance and understanding while tracking down books, texts, and articles. I cannot, however, say the same for the University of Manchester, who refused the award of an Honorary Fellowship to assist in the completion of this work.

Michael George
Manchester
2012

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TION.

TRANSLATOR'S PREFACE

Why retranslate Marx now? Surely he is a dead theorist well past his 'sell by date'. Perhaps so, and then again, perhaps not. Marx, and Marxism, are now free from the stifling hand of the Russians and while many who would still describe themselves as adherents to his philosophy continue to fight long forgotten battles, the history of Marxism in the 20th century is irrelevant to anyone wishing to know what Marx really said, why he said it, and whether it was worth the saying.

Those who take the trouble to look at Marx will be surprised to find a very different thinker from the one with which the 20th century was familiar. They will not find the Marx of Pol Pot's murderous genocide in Cambodia, nor the Marx of Kim Jong Un's North Korean dynastic rule, nor the Marx of Joseph Stalin's paranoia, nor even that of V. I. Lenin's supposed 'Vanguard Party' or Leon Trotsky's presumed 'Dictatorship of the Proletariat'. Perhaps the greatest misfortune that can befall any great thinker is to have 'followers'!

Marx has suffered too long at the hands of detractors and adherents alike to allow his work to pass out of currency – if that is to be its fate – without providing the good German doctor with an opportunity to set the record straight. He, of course, cannot do so, but we can, and it is incumbent on us to recognise that nothing so unbecomes a great theorist as having his ideas dismissed out of hand by those who will not first take the trouble to understand him.

In 1841, the year in which this work was composed, Marx had not yet formulated the theory of history for which he would become famous, nor had he adopted the political ideology that was to become the guiding passion of his life.¹ He was simply a newly promoted doctor of his subject, namely, of philosophy, and, as this thesis indicates, a rather good philosopher at that. Marx was a young man seeking his way in the world and seeking to find his voice. Sadly, previous translations of Marx's writings cannot be said to have done justice to what he actually wrote. His doctoral dissertation, packed as it is with significance, has been ignored for too long. The first translation of the early writing, that undertaken by Clemens Palme-Dutt in the 1930s, was tinged with the political overtones of a crass Stalinism desirous of justifying its totalitarian policies. A subsequent translation by Thomas O'Malley in the 1970s failed nearly as badly to appreciate the philosophical language in which Marx was writing. In what follows, I hope to have remedied at least some of these defects and to have rendered Marx's German – albeit his often convoluted German – in a way that is sympathetic to the language in which it was writing. While I have sought to make the language of Marx intelligible, I make no apology for having kept as close as possible to the structure of the

¹ Marx was not to develop his *material theory of history* for at least another two or three years.

original German text – as close, that is, as the constraints of translation into another language permit.

Marx was a well educated Rhinelander of the early 19th century whose use of the German language was characterised by the linguistic foibles of the 18th century. Unlike Engels, who knew enough English to appreciate that a sentence is supposed to express one coherent idea, Marx's style of writing contains all the defects of his predecessors in the German Enlightenment. Like Kant and Hegel before him, Marx seems to have viewed the sentence as a portmanteau capable of accepting whatever thought occurred to him during its composition. The longest sentence with which I have had to deal in these early writings was of 24 lines, and no modern reader, or academic for that matter, would willingly plough through a sentence of that length. Circumstances have consequently obliged me to restructure some parts of Marx's manuscript, but in so doing I have sought to remain faithful not merely to what Marx said but to the 'flavour' of how he said it; I have done so irrespective of whether, to the eye of the modern reader, the resultant translation may, at times, seem archaic.

While many know of Marx's indebtedness to Hegel, few, I suspect, will be ready for his evident indebtedness to another great mentor, Aristotle. In what follows I shall seek to demonstrate that Marx imbibed more than Hegel along with his beer at Berlin University. By the time he left the Royal Frederick Wilhelm University, Marx had received a grounding in philosophy as thorough as any to be expected from the German educational system of his day or later. In light of this, I have sought to present Marx's language in keeping with the philosophical usage of the period. I have done so from more than stylistic considerations, if Marxism is to be understood in its fullest complexity, such a policy is requisite. Those who wish to reduce a writer to their own level – either from a lack of acumen or for ulterior political motives – first seek to make what is complex, 'simple'. Clarity, of course, is to be valued, but clarity is not a synonym for 'simplicity'. Make Marx 'simple' and you reducing him to little more than the proponent of a deterministic system, one 'guaranteed' to lead to a future society ruled, no doubt, by the very same 'interpreters' who can not be bothered to understand him in the first place.

While I do not presume to speak for Marx, I can hardly imagine that he would be any more welcoming of what the Russians did to his philosophy in the 20th century than Christ would welcome what the Christian churches have done to his doctrine over the past 2,000 years.

But we must return to the subject at hand. A question arose as to why Marx chose the University of Jena as opposed to Berlin for the submission of the thesis? The calumny has been raised against Marx that the thesis was 'pedestrian' and that Marx chose Jena as an 'easy' university from which to secure a degree. Nothing could be further from the truth. The critics who stoop to such charges do so for reasons of political ideology. Their calumnies are without foundation and can readily be rebuffed.

Those inclined to regard all philosophers as ‘pedantic hair-splitters’ will find ample evidence in Marx’s doctorate conducive to their prejudice, for Marx’s thesis was written on a suitably obscure subject, namely, an examination of late Greek atomistic thought represented by its two principal exponents: Democritus and Epicurus. The language is as dense as a German tract in philosophy is supposed to be, and, just as certainly, the erudition and the scholarship are beyond question.

The two Greek philosophers chosen – Democritus and Epicurus – constitute the corpus of what has come down to us in respect of Greek ‘atomistic theory’. Because of the esoteric nature of the subject, and because Marx made no concessions to the layman – you would not expect him to do so in a doctoral thesis – the tract has largely been ignored by subsequent scholars. The language of the thesis is dark and is likely to be impenetrable to anyone untrained in philosophy. (Most Marxist political theorists never studied philosophy and, unsurprisingly, have made little of Marx’s thesis.) Even so, the thesis is far from being a pedestrian piece of work. In it Marx outlines his reasons for preferring the view of Epicurus to those of Democritus and, as we shall see, the reasons which Marx develops in censure of Democritus and in praise of Epicurus serve to indicate not only that Marx was an astute and well educated philosopher, but that he already had in mind – albeit in nascent form – a very deep theoretical dispute with the prevailing wisdom of the German Enlightenment.

The German text is taken from the *Marx/Engels Gesamtausgabe, Volume 1, Parts 1 and 2*, Dietz Verlag, Berlin, 1975 (MEGA). The notes accompanying the texts are a) by Marx himself, b) my own, and c) those from Volume 1 of *Marx Engels Collected Works* edited by Dirk J. and Sally R. Struik (MECW). Deletions and marginal notes made by Marx have been added where relevant, though I have not made a slavish attempt to include every minor adjustment made by Marx. Where possible, I have followed Marx’s system of paragraphs, even where this has, on occasion, led to rather long, unbroken sections. I have done so in the interest of assisting readers to locate the relevant text in the original German. Marx prepared relatively few of his writings for publication during his life time; in consequence, no coherent system of reference for the various texts has ever been instituted. I have not thought fit here to institute such a system unilaterally. The pagination in the MEGA edition of Marx’s works has been included, between vertical lines, as a basic guide. Even so, readers wishing to relate the translation to the original German will have to be prepared, as before, to ‘muddle through’. These sections heading are from the German edition of the texts.

Résumé of Marx's Argument

It is perhaps useful as a guide to the perplexed to provide a basic statement as to Marx's intentions in writing his doctoral thesis – though I make no apology for including terms which may be unfamiliar to anyone without a background in philosophy. That Marx wished to secure the degree of *Doktor* in order to teach at the Bonn campus of the Frederick Wilhelm University is quite evident, what is less evident is the argument of his thesis – in other words, the 'thesis' itself – for it is this which is truly significant.

I believe that Marx recognised a kindred spirit in Epicurus, for Epicurus was not, as history has portrayed him, simply the obedient servant of Democritus – for whom we may read Hegel. On the contrary, Epicurus – at least according to Marx's thesis – went beyond his mentor and established a dual relationship to the atom. For Democritus, the atom was merely a *material* 'element' – *stoicheion* – one which is arranged into composite bodies in accordance with *rational*, or *ideal*, 'principles' – *arche* – that have their origin outside of the material realm itself. But then, where are we to find these 'rational principles'? This is the dilemma of Democritus. Are they 'in heaven' or are they 'in hell'? Are they to be found outside of the material real, in the *heavens*, or inside the material realm, in the *world*? Are these organising 'principles' – *arche* – and the 'elements' – *stoicheion* – they organises separate or united? If, with Democritus, we hold these 'principles' to be separate from the 'elements' they organise, then we must look to the heavens – to Plato's abiding Forms and to the realm of the gods – to locate their source. If, on the contrary, these 'principles' are united with, and form a part of, the material realm, we must seek them in what is active within the material realm itself, namely, in the nature of man. This, of course, fits well enough with Kant and Hegel, but Marx's point of difficulty is subtler than this.

During his period at Berlin, Marx would have discovered that by the late 1830s the dominant interpretation of Hegel was that being propounded by the political 'right'. It was an interpretation which was essentially theological in nature and which treated the various categories of understanding elucidated by Hegel in his *Science of Logic* not as categories of *human* understanding but rather as categories of *divine* understanding. Consequently, for these 'right-wing' Hegelians as they became known, the *principles* governing nature are not *human* but *divine*.

If this is the view taken of Hegel, then the *Science of Logic* becomes a metaphysic – or an *a priori* plan of the universe – rather than a system of human logical thought. But even if the Hegelian 'left' wished to challenge this dominant view, and by so doing restore the connection between the 'principles', or categories of thought, and human understanding, a problem remains. The problem is an old one, and while in his doctoral thesis Marx was to perceive its significance, he was not to arrive at a definitive resolution of what he was to call the 'riddle of history' until a few years later.

The problem is this: let us a) begin with *sensations (aesthete)* as a source of all our empirical knowledge of the world, let us then b) seek to *understand (dianoia)* the nature of these sensations by subsuming them under universal judgements, then let us c) seek to determine a *rational ordering (noesis)* for these universal judgements by associating them, logically, in accordance with Aristotle system of syllogistic logic; finally, having done all of this, we arrive at d) the realm of warranted *rational beliefs (pistis)* about the nature of the world. Now in are in the position to produced 'theories' about the way the world *is* and the way the world *works*. These 'theories' extend to and embrace every *facet* of the world, they extend from 'how to cook your dinner', to 'how the cosmos was formed', and comprise everything in between.

But though we now have a world of *rational*, or *ideal*, 'theories', how do we complete the circle of knowledge? That is, how do we return once again to the *material* world of *sensations* in order to validate our theories against their source and ultimate origin? This was the *hiatus* which remained in the supposed 'circle of knowledge' that had come down from the Greeks and which predominated during this German Enlightenment. Marx was eventually to bridge this gap between 'theory' and the 'world' – between the *ideal* and the *material*, or between *idealism* and *realism* – by means of human *sensuous practice*. At its most basic, the answer is simple enough: 'suck it and see'. If you have a 'theory' about how to cook a meal, go ahead and cook the meal according to the dictates of the theory and see if what is produced is edible. This is the basis – and arguably the only basis – of all empirical science, namely, the method of experimentation. It was also to become the basis of Marx's method of 'scientific socialism'. The pathway to this goal – a goal which, ultimately, will unite the *material* world with man's *idealised* understanding – begins with Marx's *Doctoral Dissertation*; it is a pathway which will be traced out in detail in this and subsequent translations of Marx's writings.

SECTION ONE

DOCTORAL DISSERTATION

THE DIFFERENCE BETWEEN THE DEMOCRITEAN AND EPICUREAN PHILOSOPHY OF NATURE²

KARL MARX

Dedication

Preface

PART ONE

THE DIFFERENCE BETWEEN THE DEMOCRITEAN AND EPICUREAN PHILOSOPHY OF NATURE IN GENERAL

1. The Subject of the Treatise
2. Judgement about the Relationship between Democritean and Epicurean Physics
3. Difficulties Relating to the Identity of the Democritean and Epicurean Philosophy of Nature
4. General Difference in Principle between the Democritean and Epicurean Philosophy of Nature. [MISSING]
5. Result. [MISSING]

² Throughout, the translation of notes and quotes in Greek and Latin have been taken from the Loeb Library of classical texts.

PART TWO

ON THE DIFFERENCE BETWEEN DEMOCRITEAN AND EPICUREAN PHYSICS IN DETAIL

- Chapter 1:* The Declination of the Atom from the Straight Line
- Chapter 2:* The Qualities of the Atom
- Chapter 3:* *Atomoi archai*³ and *Atoma stoicheia*⁴
- Chapter 4:* Time
- Chapter 5:* The Meteors

³ Indivisible principles. [Translator]

⁴ Indivisible elements. [Translator]

THE DIFFERENCE BETWEEN THE DEMOCRITEAN AND EPICUREAN PHILOSOPHY OF NATURE⁵

[DEDICATION]

[III] To his dear fatherly friend,
Geheimer Regierungsrat⁶
Herrn Ludwig von Westphalen,
at Trier,
[a] dedication of these lines
as a token of the filial love
of the author

[IV] You will forgive me, my *dear fatherly friend*, if to *your* beloved name I dedicate an insignificant brochure. I am too impatient to await another opportunity of giving *you* a small proof of my love.

May everyone who doubts the Idea be as fortunate as I to admire an old man with the strength of youth, who greets every forward step of the times with the enthusiasm and prudence of truth, and with all profound conviction [and] sun-bright idealism, who alone knows the true word, for which all spirits (*Geister*) of the world appear,⁷ [who] never recoiled before the deep shadows of retrograde spectres, [or] before the often dark clouds of the times, but rather, with divine energy and confident manly gaze, consistently sees, through all veils, the empyreum that burns in the heart of the world. *You, my fatherly friend*, were always constantly a living *argumentum ad oculos*⁸ to me that idealism is no delusion but a truth.

I need not pray for your physical well-being. The mind (*Geist*) is the great magic-proficient (*zauberkundige*)⁹ physician to whom you have entrusted yourself.

⁵ MEGA 1/1 pp. 5-87

⁶ Confidential Government Advisor or Privy Councillor. [Translator]

⁷ This make Baron Ludwig von Westphalen sounds like a Freemason, which, given his social rank, he probably was. [Translator]

⁸ 'visible proof'. [Translator]

⁹ *Geist* can be translated as 'spirit' or as 'mind'. Though I translated it above as 'spirit', I have translated it here as 'mind, the contexts being different. The word *zauberkundige* (someone competent in magic) is reminiscent of Mozart's *Die Zauberflöte* (The Magic Flute) and, in all probability, is Masonic in undertone. [Translator]

[V] PREFACE

The form of this treatise would have been, on the one hand, more strictly scientific, on the other hand, in many of its arguments, less pedantic, if its primary purpose had not been a doctoral dissertation. Still, I am constrained by external circumstances to send it to the press in this form. Moreover, I believe that I have resolved in it an as yet unresolved problem in the history of Greek philosophy.

Experts know that in regard to the objective of this treatise, no where does there exist a reliable preliminary study. What Cicero and Plutarch have babbled has been babbled since [down] to the present day. Gassendi, who freed Epicurus from the interdict that the Fathers of the Church, and the whole Middle Ages – the period of realised unreason – had laid upon him, offers, in his expositions, only one interesting moment.¹⁰ He seeks to accommodate his Catholic conscience to his pagan knowledge, and Epicurus to the Church, which is certainly a forlorn effort. It is as if one would throw a Christian nun's habit over the serene rosy body of the Greek Lais. On the contrary, Gassendi learnt [more] of the Epicurean philosophy than he could teach us about Epicurus's philosophy.

The¹¹ treatise is to be considered only as a preliminary to a larger work in which I will expound the cycle of Epicurean, Stoic and Sceptic philosophy depicting it in the context of the whole of Greek speculation.¹² The defects in this treatise, in form and the like, will be rectified then.

Certainly, *Hegel* has correctly determined the universal [aspect] of the above-mentioned system in its totality. Alone, regarding the admirable, great, and bold plan of his History of Philosophy, [VII] from which the history of philosophy can, generally speaking (*überhaupt*), be dated, it was, on the one hand, impossible [for him] to go into detail, and, on the other, the giant thinker was hindered in his view of them – by what, *par excellence*, he called speculative thought – from recognising in these systems the great significance they had for the history of Greek philosophy and for the Greek mind in general. These systems are the key to the true history of Greek philosophy. Concerning their connection with Greek life, there is to be found a deeper intimation in the writings of my friend Köppen, *Friedrich der Grosse und seine Widersacher*.¹³

¹⁰ Marx refers to the book by Petri Gassendi, *Animadversiones in decimum librum Diogenis Laertii, qui est De Vita, Moribus, Placitisque Epicuri*, Ludguni, 1649. [Dirk J. and Sally R. Struik – MECW]

¹¹ 'The' corrected by Marx from 'this'. [Dirk J. and Sally R. Struik – MECW]

¹² Marx never realised his plan to write a larger work on the Epicurean, Stoic, and Sceptic philosophies. [Dirk J. and Sally R. Struik – MECW]

¹³ This refers to the following passage from the book by Karl Friedrich Köppen, *Friedrich der Grosse und seine Widersacher*, Leipzig, 1840: '*Epikureismus, Stoikismus und Skepsis und die Nervenmuskel und Eingeweidesysteme des antiken Organismus, deren unmittelbare, natürliche Einheit die Schönheit und Sittlichkeit*

If an appendix has been added to a critique of Plutarch's polemic against Epicurus' theology, it is for this reason: this polemic is nothing singular, but rather represents an *espèce*,¹⁴ in that it most strikingly presents in itself the relation of the theologising intellect to philosophy.

The critique leaves untouched, ||VIII| among other things, the falsity of Plutarch's standpoint when he brings philosophy before the forum of religion. Concerning this it is sufficient to cite, in place of all argument, a passage from David Hume:

... 'Tis certainly a kind of indignity to philosophy, whose *Sovereign Authority* ought everywhere to be acknowledged, to oblige her, on every occasion, to make apologies for her conclusions which may be offended at her. *This puts one in mind of a king arraign'd for high treason against his subjects.*¹⁵

Philosophy, so long as a drop of blood pulses in its world-subduing, absolutely free heart, will strike its adversaries with the Epicurean cry:

Not the man who denies the gods worshipped by the multitude, but he who affirms of the gods what the multitude believes about them, is truly impious.¹⁶

[IX] Philosophy conceals it not. The confession of Prometheus:

In simple words, I hate the pack of gods,¹⁷

is its own confession, its own dictum (*Spruch*) against all heavenly and earthly gods who do not acknowledge human self-consciousness as the highest divinity. There shall be no other besides him.

des Altertums bedingte, und die beim Absterben desselben auseinanderfielen' (S. 39) ('Epicureanism, Stoicism, and Scepticism are the nerve, muscles, and intestinal system of the antique organism whose immediate, natural unity conditioned the beauty and morality of antiquity, and which disintegrated with the decay of the latter'). Köppen dedicated his book to Karl Marx. [Dirk J. and Sally R. Struik – MECW]

¹⁴ Species. [Dirk J. and Sally R. Struik – MECW]

¹⁵ Marx quotes David Hume's *A Treatise of Human Nature* from the German translation: *David Hume über die menschliche Natur aus Englischen nebst kritischen Versuchen zur Beurteilung dieses Werks von Ludwig Heinrich Jakob, 1. Bd., Über den menschlichen Verstand*, Halle, 1790, S. 485. [Dirk J. and Sally R. Struik – MECW]

¹⁶ Marx quotes from a letter by Epicurus to Menoeceus; see *Diogenes Laertii de clarorum philosophorum vitis, dogmatibus et apophthegmatibus libri decem* (X, 123). [Dirk J. and Sally R. Struik – MECW]

¹⁷ Aeschylus, *Prometheus Bound*. [Dirk J. and Sally R. Struik – MECW]

To the poor March hares who rejoice over the apparently worsened civil position of philosophy, it retorts again what Prometheus [said] to the servant of the gods, Hermes:

Be sure of this, I would not change my state
of evil fortune for your servitude.
Better to be the servant of this rock
than to be faithful boy to Father Zeus.¹⁸

Prometheus is the most eminent saint and martyr in the philosophical calendar.

Berlin, March 1841

¹⁸ (Ibid.) [Dirk J. and Sally R. Struik – MECW]

PART ONE

DIFFERENCE BETWEEN THE DEMOCRITEAN AND EPICUREAN PHILOSOPHY OF NATURE IN GENERAL

I. SUBJECT OF THE TREATISE

Greek philosophy appears to have met what any good tragedy should not meet with, namely, a dull ending¹⁹. With²⁰ Aristotle, the Alexander of Macedon of Greek philosophy, the objective history of philosophy in Greece appears to come to an end, and even the strong, manly Stoics did not succeed²¹ in doing what the Spartans accomplished in their temples, the chaining fast of Athena to Heracles so she could not flee therefrom.

Epicureans, Stoics, and Sceptics are considered as almost improper additions that stand in no relation to the mighty premises of Greek philosophy. Epicurean philosophy, as a syncretic aggregation of democratic physics and Cyrenaic morality, confronts the dogmatism of a Stoicism united with Heraclitean speculation on nature and a Cynical-ethical view of the world, with some Aristotelian logic, and, finally, a Scepticism of the necessity of evil. One, unconsciously, combines this philosophy with the Alexandrine philosophy, wherein it is made into merely a one-sided, tendentious eclecticism. The Alexandrian philosophy is, in the end, viewed as wholly enthusiastic and deranged – a confusion in which, at most, the universality of the intention is to be recognised.

Now, certainly, it is a very trivial truth²² that birth, flowering, and decline are the eternal circle within which everything human is enclosed, and through which it must pass. So it should not be surprising if Greek philosophy, after reaching its zenith in Aristotle, then withered. Of itself, the death of the hero is akin to the setting of the sun, not to the bursting of an inflated frog.

And then: birth, flowering, and decline are quite general, quite vague ideas into which, certainly, everything can be conscripted (*einrangiert*) but by means of which nothing is to be grasped. Decay is itself prefigured in the living; its form may, as such, be grasped in its specific particularity, as the form of life.

¹⁹ After 'ending', Marx erased 'an incoherent finale'. [Dirk J. and Sally R. Struik – MECW]

²⁰ Corrected by Marx from: 'After'. [Dirk J. and Sally R. Struik – MECW]

²¹ The sentence: 'With Aristotle ... succeed' was originally: 'With Aristotle, Greek philosophy's Alexander of Macedon, *the owl of Minerva seems to lower its wings*, and even the manly-strong Stoics seem not to have succeeded ...'. [Dirk J. and Sally R. Struik – MECW]

²² Corrected by Marx from: 'not to be denied'. [Dirk J. and Sally R. Struik – MECW]

Finally, if we proclaim a view of history, are Epicureanism, Stoicism, and Scepticism particular appearances? Are they not the prototypes of the Roman mind, the form in which Greece wandered to Rome? Are they not so full of character, intensity, and eternal essence, that the modern world must concede to them full intellectual citizenship?

I stress this only in order to call to memory the historical importance of these systems. Here, however, we are not considering their universal significance for culture in general, but are considering them in connect with the oldest Greek philosophy. Finally, possessed of this relationship, must it not at least be an inducement to see Greek philosophy as comprising two different groups of eclectic systems, one the cycle of Epicurean, Stoic, and Sceptic philosophy, the other collected under the name of Alexandrine speculation? Furthermore, is it not a phenomenon worth of note that, following Platonism and Aristotelianism, both philosophies all encompassing in their span, there appear new systems that do not lean upon these rich intellectual forms, but rather look back farther and have recourse to the simplest schools – to earlier physics in respect of the philosophers of nature, [and], with regard to ethics, to the Socratic school? Furthermore, upon what basis did the systems that followed after Aristotle light upon, as it were, foundations ready made in the past, why Democritus became conjoined to the Cyrenaics, and Heraclitus to the Cynics? Is it an accident that in the Epicureans, Stoics, and Sceptics, all the moments of Self-consciousness are represented in their entirety, only with every moment [expressed] as a particular existence? That these systems, taken together, constitute the entire construct of self-consciousness? Finally, the character, with which Greek philosophy mythically begins in the seven wise men, is, as it were, itself their middle point, embodied in Socrates as its *demiurge*; I mean the character of the wise man – the *sophos* – is it accidental that he is asserted in these systems as the actuality of true science?

It appears to me, that, while the earlier systems are more significant and interesting in respect of their content, the post-Aristotelian ones, and primarily the cycle of the Epicurean, Stoic, and Sceptic schools, are more significant and interesting for the subjective form, [for] the character of Greek philosophy. Yet, it is precisely the subjective form, the spiritual carrier of the philosophical systems that has, until now, been almost entirely ignored in favour of their metaphysical characteristics.

I shall reserve for a more detailed consideration the presentation of the Epicurean, Stoic, and Sceptic philosophies in their totality,²³ and in their complete relationship to earlier and later Greek speculation.

Here it is sufficient to develop this relationship by example as it were, and then only in one respect, namely, in their connection to earlier speculation.

As such an example, I choose the relationship between the Epicurean and the Democritean philosophies of nature. I do not believe that it is the most

²³ Marx erased after 'totality' the word '*gleichsam*', 'so to say', or 'as it were'.
[Dirk J. and Sally R. Struik – MECW]

convenient point of contact. Indeed, on the one side, it is an old and entrenched prejudice to identify Democritean and Epicurean physics, so that Epicurus' modifications are seen only as arbitrary quirks. On the other side, I am obliged to go into an apparent microscopic examination so far as details are concerned.

Yet precisely because this preconception is as old as the history of philosophy, [and] because the differences are so hidden that they can, as it were, only be discovered with a microscope, it will be all the more vital if an essential difference, in the least detail, can be established, despite the interdependence of Democritean and Epicurean physics. What can be demonstrated in the least, it is still easier to confirm when these relations are considered in greater dimensions, while, conversely, if the result is confirmed in the particular, all general considerations of the doubtful are left behind.

II. JUDGEMENT ABOUT THE RELATIONSHIP BETWEEN DEMOCRITEAN AND EPICUREAN PHYSICS

How my view relates, in general, to earlier views will become obvious if we briefly scrutinise the judgement of the ancients about the relation between Democritean and Epicurean physics.

Posidonius the Stoic, Nicolaus, and Sotion reproach Epicurus for having presented the Democritean doctrine of atoms and Aristippus's teaching on pleasure, as his own.²⁴ *Cotta*, the Academician, asks with Cicero: 'What is there in the physics of Epicurus that does not belong to Democritus? He changes some details, but mostly he repeats Democritus'.²⁵ *Cicero* himself says:

In physics, in which Epicurus is the most pretentious, he is a perfect stranger. Most of it belongs to Democritus; where he diverges from Democritus, where he wishes to improve [on him], he spoils and impairs.²⁶

²⁴ Diogenes Laertius, X, 4. They are followed by Posidonius the Stoic and his school, and Nicolaus and Sotion ... [allege that] he (Epicurus) put forward as his own the doctrines of Democritus about atoms and of Aristippus about pleasure. [Marx – in Greek]

²⁵ Cicero: *On the Nature of the Gods*, I, 26. What is there in Epicurus' natural philosophy that does not come from Democritus? Since even if he introduced some alterations ... yet most of his system is the same... [Marx – in Latin]

²⁶ Ibid. *On the Highest Goods and Evils*, I, 6. Thus where Epicurus alters the doctrines of Democritus, he alters them for the worse; while for those ideas which he adopts, the credit belongs entirely to Democritus...

Ibid. ... the subject of Natural Philosophy, which is Epicurus' particular boast. Here, in the first place, he is entirely second-hand. His doctrines are those of Democritus, with a very few modifications. And as for the latter, where he

Though from many quarters Epicurus is decried for aspersions against Democritus, Leonteus, on the contrary, according to Plutarch, affirms that Epicurus honoured Democritus, because the latter adhered to the true doctrine before him, [and] because Democritus had discovered the principles of nature sooner.²⁷ In the essay *De placitis philosophorum Epicurus* [Epicurus] is named as one who philosophises in the manner of Democritus.²⁸ Plutarch, in his *Colotes*, goes further: comparing Epicurus with the line of Democritus, Empedocles, Parmenides, Plato, Socrates, Stilpo, the Cyrenaics and the Academicians, he seeks to prove that 'Epicurus, from the whole of Greek philosophy, appropriated the false and did not understand the true'.²⁹ Likewise, the treatise *De eo, quod secundum Epicurum non beats vivi possit* is full of hostile insinuations of a similar kind.

This unfavourable view on the part of the more ancient authors we still find (*bleibt*) in the Fathers of the Church. In the note, I quote only one passage from Clement of Alexandria,³⁰ a Father of the Church, who deserves prominent mention with regard to Epicurus because he interprets the warning of the apostle Paul against philosophy in general as a warning against Epicurean philosophy, as one which did not once spin fantasies concerning providence and the like.³¹ How general was the inclination to accuse Epicurus of plagiarism is indicated conspicuously by Sextus Empiricus, who wishes to turn a few wholly inappropriate passages from Homer and Epicharmus into principal sources of Epicurean philosophy.³²

attempts to improve upon his original, in my opinion he only succeeds in making things worse... . Epicurus for his part, where he follows Democritus, does not generally blunder. [Marx – in Latin]

²⁷ Plutarch, *Reply to Colotes* (ed. by Xylander), p. 1108. Leonteus ... writes ... that Democritus was honoured by Epicurus for having reached the correct approach to knowledge before him ... because Democritus had first hit upon the first principles of natural philosophy. Comp. Ibid. 1111. [Marx – in Greek]

²⁸ (Ibid.) *On the Sentiments of the Philosophers*, T. V., p. 235, ed. Tauchnitz. Epicurus, the son of Neocles, from Athens, who philosophised according to Democritus... . [Marx – in Greek]

²⁹ Ibid. Reply to Colotes, p. 1111, 1112, 1114, 1115, 1117, 1119, 1120 sq. [Marx]

³⁰ Clement of Alexandria, *The Miscellanies*, VI, p. 629 ed. Cologne edition [2]. Epicurus also has pilfered his leading dogmas from Democritus. [Marx – in Greek]

³¹ Ibid. p. 295 [I, 11]. 'Beware lest any man despoil you through philosophy and vain deceit, after the tradition of men, after the elements of the world and not after Christ' [Col. ii, 8] branding not all philosophy, but the Epicurean, which Paul mentions in the Acts of the Apostles [Acts xvii, 181], which abolishes providence ... and whatever other philosophy honours the elements, but places not over them the efficient cause, nor apprehends the Creator. [Marx – in Greek]

³² Sextus Empiricus, *Against the Professors*, (Geneva edition) [I, p. 273]. Epicurus has been detected as guilty of having filched the best of his dogmas from the

That recent writers, on the whole, make Epicurus, as a philosopher of nature, a mere plagiarist of Democritus is well known. This judgement is represented here, in general, by an observation from Leibniz:

Of this great man (Democritus) we scarcely know anything other than what Epicurus borrowed from him, and Epicurus was not always capable of taking the best.³³

If, as Cicero says, Epicurus debased the Democritean doctrine, at least the will remained to improve on him, and [also] an eye for defects in this doctrine. Plutarch ascribes inconsistency to Epicurus³⁴ and a predisposition toward the inferior, as well as suspecting his intentions. [While] Leibniz questions even his skill in making excerpts [from Democritus].

All, however, can agree that Epicurus borrowed his physics from Democritus.

III. DIFFICULTIES RELATING TO THE IDENTITY OF THE DEMOCRITEAN AND EPICUREAN PHILOSOPHY OF NATURE

Historical testimony apart, there is much that speaks for the identity of Democritean and Epicurean physics. The principles – atoms and the void –

poets. For he has been shown to have taken his definition of the intensity of pleasures – that it is ‘the removal of everything painful’ – from this one verse: ‘When they had now put aside all longing for drinking and eating.’ [Homer, *Iliad*, I, p. 469]

And as to death, that ‘it is nothing to us’, Epicharmus had already pointed this out to him when he said,

‘To die or to be dead concerns me not.’

So, too, he stole the notion that dead bodies have no feeling from Homer, where he writes,

‘This dumb day that he beats with abuse in his violent fury.’ [Ibid. XXIV, p. 54]

³³ Letter of Leibniz to Ms Des Maizeaux, containing [some] clarifications... [Opera omnia,] ed. L. Dutens, Vol. 2, p. 66[-67]. [Marx – in French]

³⁴ Plutarch, *Reply to Colotes*, p. 1111. Democritus is therefore to be censured not for admitting the consequences that flow from his principles, but for setting up principles that lead to these consequences... If ‘does not say’ means ‘does not admit it is so’, he is following his familiar practice; thus he (Epicurus) does away with providence but says he has left us with piety; he chooses friends for the pleasure he gets, but says that he assumes the greatest pains on their behalf; and he says that while he posits an infinite universe he does not eliminate ‘up’ and ‘down’. [Marx – in Greek]

The translation of Latin and Greek texts follows, when possible, that of the Loeb Classical Library. The translation differs in details from the text in the dissertation, which is the English translation of Marx's text, and therefore also of Marx's German translation of the Latin and Greek texts. [Ed]

are indisputably the same. Only in isolated cases does it appear that caprice holds sway, that is, differences [that are] inessential.

However, there remains a curious and insoluble riddle. Two philosophers teach exactly the same science, in exactly the same way, but – how inconsequent!³⁵ – they stand diametrically opposed in all that concerns truth, certainty, the application of this science, and the relationship between thought and reality in general. I say, they stand diametrically opposed, and I will now seek to prove it.

A) The judgement of Democritus *concerning the truth and certainty of human knowledge* appears hard to ascertain. Contradictory passages are found, or rather, it is not the passages, but Democritus' views that contradict themselves. When Trendelenburg asserts, in his commentary to Aristotelian psychology, that only later authors – but not Aristotle – knew of such contradictions, he is factually incorrect. In Aristotle's *Psychology*³⁶ it is declared: 'Democritus posits soul and mind (*Verstand*) as one and the same, because the phenomenon is the truth.'³⁷ In the *Metaphysics* on the contrary: 'Democritus asserts nothing to be true, or it [i.e., truth] is hidden from us.'³⁸ Are these passages from Aristotle not contradictory? If the phenomenon is the truth, how can the truth be hidden? Concealment only begins where phenomenon and truth separate.³⁹ *Diogenes Laertius*, however, reports that Democritus counted as a Sceptic. He is quoted as saying: 'In truth we know noth-

³⁵ Marx here wrote 'inconsequent' in English, meaning, literally, 'illogical'. [Translator]

³⁶ Corrected by Marx from 'Physiology'. [Dirk J. and Sally R. Struik – MECW]

³⁷ Aristotle, *De Anima*, 1, p. 8 (ed., Trendelenburg) [2, p. 404 (Homer, *Iliad* I, p. 469), pp. 27-291. Democritus roundly identifies soul and mind, for he identifies what appears with what is true. [Marx – in Greek]

³⁸ Ibid. *Metaphysics*, IV, 5 [p. 1009, (Homer *Iliad* XXIV, p. 54) 11-181. And this is why Democritus, at any rate, says that either there is no truth or to us at least it is not evident. And in general it is because they [i.e., these thinkers] suppose knowledge to be sensation, and this to be a physical alteration, [and it is for this reason] that they say that what appears to our senses must be true; for it is for these reasons that both Empedocles and Democritus and, one may almost say, all the others have fallen victims to opinions of this sort. For Empedocles says that when men change their condition they change their knowledge. [Marx – in Greek]
By the way, the contradiction is expressed in this passage from the *Metaphysics* itself. [Marx – in Greek]

³⁹ This sentence and the one before were inserted by Marx. [Dirk J. and Sally R. Struik – MECW] This is a remarkable observation by Marx. Concealment of the truth begins where the truth separates from phenomena! In other words, pure *idealism* blinds us to the truth by separating us from the phenomenal basis of the world, or, what is the same thing, by separating us from any *sensuous practice* in regard to the world! As will be noted below, Marx is already alter to the dangers inherent in separating *reason* and *sensation*. [Translator]

ing, for truth lies at the bottom of a deep well.⁴⁰ We find similar in *Sextus Empiricus*.⁴¹

This sceptical, uncertain, and internally self-contradictory view from Democritus is only further developed in *the way in which the relationship between the atoms and the sensuous appearance of the world is determined*.

On one side, sensuous appearance does not belong to the atoms themselves. It is not *objective appearance* (*Erscheinung*), but rather *subjective seeming* (*Schein*). 'The *true* principles are the atoms and the void, *everything else is opinion, seeming*'.⁴² 'Only according to my opinion is it cold, only according [to my opinion] is it warm, in truth [there are] only the atoms and the void.'⁴³ In truth, the One, does not come out of many atoms but rather, 'through the combination of atoms the One *seems* (*scheint*) to come to be'.⁴⁴ The principles are therefore only perceived through reason, they are inaccessible to the sensing eye owing to their smallness. For this reason they are even called *ideas*.⁴⁵ The sensuous appearance is, on the other side, the only true object, and the *aisthesis is the phronesis*,⁴⁶ the truth, however, is the changing, the unstable, the phenomenon. That the phenomenon is the truth is contradictory.⁴⁷ Now the one, now the other side is made the subjective and the objective. Thereby the contradiction appears to be held apart, wherein it becomes divided into two worlds. In this way Democritus makes sensuous actuality into subjective seeming; but the antinomy, banned from the world of objects,

⁴⁰ Diogenes Laertius, IX, 72. Furthermore, they find Xenophanes, Zeno of Elea, and Democritus to be sceptics... . Democritus [says:] 'Of a truth we know nothing, for truth is in a well.' [Marx – in Greek]

⁴¹ Comp. Ritter, *History of Ancient Philosophy*, Part I, pp. 579 seqq. [2nd improved edition, 1836, pp. 619 seqq.] [Marx – in German]

⁴² Diogenes Laertius. IX,[43–]44. His (Democritus') opinions are these: The first principles of the universe are atoms and empty space; everything else is merely thought to exist. [Marx – in Greek]

⁴³ Ibid. IX, 72. Democritus rejects qualities, saying: 'Opinion says hot or cold, but the reality is atoms and empty space'. [Marx – in Greek]

⁴⁴ Simplicius, *Scholia to Aristotle* (collected by Brandis), p. 488. ... yet he (Democritus) does not really allow one being to be formed out of them, for it is quite foolish, he says, that two or more become one.

p. 514. [...] and therefore they (Democritus and Leucippus) said that neither the one becomes many nor do the many become the truly inseparable one but through the combination of atoms each thing appears to become a unity. [Marx – in Greek]

⁴⁵ Plutarch, *Reply to Colotes*, p. 1111. The atoms, which he (Democritus) calls '*ideas*'. [Marx – in Greek]

⁴⁶ *Aisthesis* – sensuous perception, *phronesis* – reason, or that which is rational. [Dirk J. and Sally R. Struik – MECW] In other words, the sensuous perception of an object is founded upon our reason rather than our reason being founded on sensuous perception.

⁴⁷ Comp. Aristotle, I. c. [Marx]

exists now in his own self-consciousness, in which the concept of the atom and sensuous intuition meet as enemies.⁴⁸

Democritus does not escape the antinomy. This is still not the place to clarify it. It is enough that its existence cannot be denied.⁴⁹

Let us listen in comparison to Epicurus.

The wise, he says, maintains a *dogmatic, not a sceptical* position.⁵⁰ Yes, precisely this is his superiority over all [others] that he knows with conviction.⁵¹ 'All senses are heralds of the true.'⁵² '*Nothing can refute sensuous perception*'; neither can like refute like, because of their equal validity, nor can unlike [refute] unlike, for they do not judged in respect of the same, nor [is] the concept [true], because the concept is dependent on sensuous perception,⁵³ as it says in the *Canon*. But while Democritus turns the *sensuous world* into *subjective seeming*, *Epicurus* turns it into *objective appearance*. And Epicurus differs quite consciously, for he claims to share *the same principles* but not, however, to make sensuous qualities *only opinions*.⁵⁴

⁴⁸ Again, *sense* and *reason* are opposed, *sense* is the untrue, while *reason* – the concept – is the truth. [Translator]

⁴⁹ Marx is clearly aware of the full significance of what he is saying. Henceforth, the 'clarification' of which he speaks, will form the background to many of his early writings. [Translator]

⁵⁰ Diogenes Laertius, X, 121. He [the wise man] will be a dogmatist but not a mere sceptic. [Marx – in Greek]

⁵¹ Plutarch, *Reply to Colotes*, p. 1117. For it is one of Epicurus' tenets that none but the sage is unalterably convinced of anything. [Marx – in Greek]

⁵² Cicero, *On the Nature of the Gods*, I, 25 [70]. He (Epicurus) therefore said that all *the senses* give a true report.

Comp. Ibid. *On the Highest Goods and Evils*, I, 7.

(Plutarch,) *On the Sentiments of the Philosophers*, IV, p. 287 [81. Epicurus holds that every impression and every phantasy is true. [Marx – in Latin and Greek]

⁵³ Diogenes Laertius, X, 31. Now in The Canon Epicurus affirms that our sensations and preconceptions and our feelings are the standards of truth... 32. Nor is there anything which can refute sensations or convict them of error: one sensation cannot convict another and kindred sensation, for they are equally valid; nor can one sensation refute another which is not kindred but heterogeneous, for the objects which the two senses judge are not the same; nor again can reason refute them, for reason is wholly dependent on sensation. [Marx – in Greek]

⁵⁴ Plutarch, *Reply to Colotes*, I, p. 1110-1111. He [Colotes] says that Democritus' words 'colour is by convention, sweet by convention, a compound by convention', and so the rest, 'what is real are the void and the atoms', are an attack on the senses... I cannot deny the truth of this, but I can affirm that this view is as inseparable from Epicurus' theories as shape and weight are by their own assertion inseparable from the atom. For what does Democritus say? That entities infinite in number, indivisible and indestructible, destitute moreover of quality, and incapable of modification, move scattered about in the void; that when they draw near one another or collide or become entangled the resulting aggregate appears in the one case to be water, in others fire, a plant, or a man, but that everything really is the indivisible 'forms', as he calls them [or: atoms, 'ideas', as he calls

As sensuous perception was the criterion for Epicurus, objective appearances corresponds to it: so we can only regard as correct the conclusion over which Cicero shrugs his shoulders:

The sun appears large to Democritus, because he is a man of science well versed in geometry; to Epicurus it was about two feet wide (*Größe*), because he judged it *to be* as large as it *seems*.⁵⁵

B) *This difference in the theoretical judgements* of Democritus and Epicurus about the certainty of science, and the truth of its objects, as it *manifests itself in the disparate scientific energy and practice* of these men.

Democritus, for whom the principle does not carry over into the appearance [and so] remains without reality and existence, has opposed the *world of sensuous perception* to the real world [that is] full of content. This world is subjective seeming, and for that reason alone torn free from the principle, left in its own independent reality; at the same time, as a unique real object it has, *as such*, value and significance. Democritus will consequently be driven into *empirical observation*. Dissatisfied with philosophy, he throws himself into the arms of *positive knowledge*. We have already seen that Cicero calls him a *vir eruditus*.⁵⁶ He is versed in physics, ethics, mathematics, in the encyclopaedic disciplines, in every art.⁵⁷ The catalogue of [his] books by Diogenes Laertius alone bears witness to his learning.⁵⁸ And as it is characteristic of erudition to develop in breadth, and to collect, and to search outside itself, so we see Democritus wandering through *half the world* in order to acquire experiences, knowledge, and observations.

them], and nothing else. For there is no generation from the non-existent, and again nothing can be generated from the existent, as the atoms are too solid to be affected and changed. From this it follows that there is no colour, since it would have to come from things colourless, and no natural entity or mind, since they would have to come from things without qualities Democritus is therefore to be censured, not for admitting the consequences that flow from his principles, but for setting up principles that lead to these consequences Epicurus claims to lay down the same first principles, but nevertheless does not say that 'colour is by convention', and so with the qualities [sweet, bitter] and the rest. [Marx – in Greek]

⁵⁵ Cicero, *On the Highest Goods and Evils*, 1, 6. Democritus, being an educated man and well versed in geometry, thinks the sun is of vast size; Epicurus considers it perhaps two feet in diameter, for he pronounces it *to be* exactly as large as it appears. Comp. (Plutarch,) *On the Sentiments of the Philosophers*, II, p. 265. [Marx – in Latin]

⁵⁶ A man of science. [Dirk J. and Sally R. Struik – MECW]

⁵⁷ Diogenes Laertius, IX, 37. [And truly Democritus] had trained himself both in physics and in ethics, nay more, in mathematics and the routine subjects of education, and was quite an expert in the arts. [Marx – in Greek]

⁵⁸ Comp. Diogenes Laertius, [IX.] § 46[-49]. [Marx]

‘I’, he prides himself, ‘have, among all of my contemporaries, wandered through the greater part of the earth, to search for the remotest things. And I have seen most climates and lands, and I have heard the most learned men, and in linear composition with demonstration no one surpassed me, not even the so-called Arsipidonaps of the Egyptians’.⁵⁹

Demetrius in the *Homonymois*⁶⁰ and Antisthenes in the *Diadochais*⁶¹ recount that Democritus travelled to Egypt, to the priests, in order to learn geometry, and to the Chaldeans in Persia, and that he reached the Red Sea. Some maintain that he also met the gymnosophists⁶² in India and set foot in Ethiopia.⁶³ It is, on the one hand, the lust for knowledge that leaves him no rest; but it is at the same time *dissatisfaction with true*, i.e., *philosophical knowledge*, that drives him into distant lands. The knowledge that he held [to be] true is without content, the knowledge that gives him content is without truth. It may be a fable, but a true fable, this anecdote of the ancients, for it portrays the contradiction in his being. Democritus blinded himself so that the *sensuous light of the eye* would not darken the *sharpness of intellect*.⁶⁴ This is the same man who, as Cicero says, wandered through half the world,⁶⁵ but had not found what he sought.

An opposite figure appears to us in Epicurus.

⁵⁹ Eusebius, *Preparation for the Gospel*, X, p. 472. And somewhere he (Democritus) says proudly about himself: “I have wandered through a larger part of the earth than any of my contemporaries, investigating the remotest things, and I have seen most climates and lands, and I have heard the most learned men, and in linear composition with demonstration no one surpassed me, not even the so-called Arsipidonaps of the Egyptians, whose guest I was when already turning eighty.” For he went as far as Babylon and Persia and Egypt, where he also studied with the Egyptian priests. {MARX – in Greek, and in German in the text]

⁶⁰ *Men of the Same Name*. [Dirk J. and Sally R. Struik – MECW]

⁶¹ *Successions of Philosophers*. [Dirk J. and Sally R. Struik – MECW]

⁶² Gymnosophists – Greek name for Indian sages. [Dirk J. and Sally R. Struik – MECW]

⁶³ Diogenes Laertius, IX, 35. According to Demetrius in his book on *Men of the Same Name* and Antisthenes in his *Successions of Philosophers* he (Democritus) travelled into Egypt to learn geometry from the priests, and he also went into Persia to visit the Chaldaeans as well as to the Red Sea. Some say that he associated with the gymnosophists in India and went to Aethiopia. [Marx – in Greek]

⁶⁴ Cicero, *Tusculan Disputations*, V, 39. When Democritus lost his sight... . And this man believed that the sight of the eyes was an obstacle to the piercing vision of the soul, and whilst others often failed to see what lay at their feet, he ranged freely into the infinite without finding any boundary that brought him to a halt.

Id, *On the Highest Goods and Evils*, V, 27 [87]. It is related of Democritus that he deprived himself of eyesight; and it is certain that [he did so] in order that his mind *should be distracted as little as possible* from reflection. [Marx – in Latin]

⁶⁵ ‘Half the world’ corrected from ‘the whole of infinity’. [Dirk J. and Sally R. Struik – MECW]

Epicurus is *satisfied* and *blissful* in *philosophy*. ‘You must’, he says, ‘serve philosophy so that true freedom will be your lot. He who has subordinated himself and given himself up to philosophy does not need to wait, he is emancipated at once. For the service of philosophy is itself freedom.’⁶⁶ ‘Let no one when young’, he teaches, ‘hesitate to philosophise, nor, when grey, allow himself to depart from philosophy’. For no one can come too early or too late to secure the health of his soul. Who, however, says either that it is not the age for philosophy or that it has passed by, he resembles the man who maintains that it is not the hour for happiness or [that is] has passed away’.⁶⁷ While Democritus, dissatisfied with philosophy, throws himself into the arms of empirical knowledge, *Epicurus disdains positive science*, because they contribute nothing to *true perfection*.⁶⁸ He becomes known as an *enemy of science*, a disdainer of grammar.⁶⁹ He is even accused of ignorance. ‘But’, says an Epicurean in Cicero, ‘it was not Epicurus who was without erudition, but the same unlearned who believe that what is shameful for a boy not to know, ought still to be recited by the grey.’⁷⁰

While Democritus seeks to learn from *Egyptian priests*, *Persian Chaldeans* and *Indian gymnosophists*, *Epicurus prides* himself on having had no teacher,

⁶⁶ Luc. Ann. Seneca, *Works*, II, p. 24, Amsterdam, 1672, Epistle VIII. I am still conning Epicurus ... If you would enjoy real freedom, you must be the slave of Philosophy. The man who submits and surrenders himself to her is not kept waiting; he is emancipated on the spot. For the very service of Philosophy is freedom. [Marx – in Latin]

⁶⁷ Diogenes Laertius, X, 122. Let no one be slow to seek wisdom when he is young nor weary in the search thereof when he is grown old. For no age is too early or too late for the health of the soul. And to say that the season for studying philosophy has not yet come, or that it is past and gone, is like saying that the season for happiness is not yet or that it is now no more. Therefore, both old and young ought to seek wisdom, the former in order that, as age comes over him, he may be young in good things because of the grace of what has been, and the latter in order that, while he is young, he may at the same time be old, because he has no fear of the things which are to come. Comp. Clement of Alexandria, IV, p. 501. [Marx – in Greek]

⁶⁸ Sextus Empiricus, *Against the Professors*, I, p. 1. The case against the mathematicians [or: Professors of Arts and Sciences] has been set forth in a general way, it would seem, both by Epicurus and by the School of Pyrrho, although the stand-points they adopt are different. Epicurus took the ground that the subjects taught are of no help in perfecting wisdom...

⁶⁹ Ibid. p. 11 [I, 491. And amongst them we must place Epicurus, although he seems to be bitterly hostile to the Professors of Arts and Sciences. Ibid. p. 54 [I, 2721. ... those accusers of grammar, Pyrrho, and Epicurus... . Comp. Plutarch, That Epicurus Actually *Makes* a Pleasant *Life* Impossible, 1094. [Marx – in Greek and Latin]

⁷⁰ Cicero, *On the Highest Goods and Evils*, I, 21 [721] No! Epicurus was not uneducated: the real ignoramuses are those who ask us to go on studying till old age the subjects that we ought to be ashamed not to have learnt in boyhood.

on being an *autodidact*.⁷¹ There are some people, he says, according to Seneca, who struggle after truth without assistance. Among these people he has himself traced out his path. And it is they, the *autodidactic*, whom he praises most. The others, to his mind, are of the second rank.⁷² While it is Democritus who is driven into all parts of the world, Epicurus leaves his garden in Athens scarcely two or three times and travels to Ionia, not to engage in research, but to visit friends.⁷³ While, finally, Democritus,⁷⁴ who abandons hope of [gaining] knowledge, blinds himself, Epicurus, feeling the hour of his death approaching, calls, in a warm bath, for pure wine and recommends that his friends be true to philosophy.⁷⁵

C) The differences outlined are not to be attributed to the accidental individuality of the two philosophers; they are two opposing orientations which they [themselves] personify. We [now] see, as differences of practical energy, what above is expressed as a difference of theoretical consciousness.

We consider finally the *form of reflection* which *delineates the relationship of thought to being [in] their mutual presentation*.⁷⁶ In the universal relation the philosopher establishes between the world and thought, the one [related] to the other, the philosopher merely objectifies the relation of his [own] particular consciousness to the real world.

⁷¹ Diogenes Laertius, X, 13. Apollodorus in his Chronology tells us that our philosopher (i.e., Epicurus) was a pupil of Nausiphanes and Praxiphanes; but in his letter to Eurydicus, Epicurus himself denies it and says that he was self-taught.

Cicero, *On the Nature of the Gods*, I, 26 [72]. For he (Epicurus) boasted that he had never had a teacher. This I for my part could well believe, even if he did not proclaim it... [Marx – in Greek]

⁷² Seneca, *Epistle* 52, p. [176-]177. Epicurus remarks that certain men have worked their way to the truth without any one's assistance, carving out their own passage. And he gives special praise to these, for their impulse has come from within, and they have forged to the front by themselves. Again, he says, there are others who need outside help, who will not proceed unless someone leads the way, but who will follow faithfully. Of these, he says, Metrodorus was one; this type of man is also excellent, but belongs to the second grade. [Marx – in Latin]

⁷³ Diogenes Laertius, X, 10. He spent all his life in Greece, notwithstanding the calamities which had befallen her in that age; when he did once or twice take a trip to Ionia, it was to visit his friends there. Friends indeed came to him from all parts and lived with him in his garden. This is stated by Apollodorus, who also says that he purchased the garden for eighty minae. [Marx – in Greek]

⁷⁴ Before 'Democritus' Marx erased 'the widely travelled'. [Dirk J. and Sally R. Struik – MECW]

⁷⁵ Ibid. X, 15, 16. Hermippus relates that he entered a bronze bath of lukewarm water and asked for unmixed wine, which he swallowed, and then, having bidden his friends remember his doctrines, breathed his last. [Marx – in Greek]

⁷⁶ Marx's delineation of the real relationship between *thought* and *being* will form the basis of all that is to come!

Now Democritus employs as his reflexive form of the actual [world] the [idea of] necessity.⁷⁷ Aristotle says of him that he traces everything back to necessity.⁷⁸ Diogenes Laertius reports that the vortex of atoms, the origin of everything, is the Democritean [idea of] necessity.⁷⁹ More satisfactory explanations are given by the author of *De placitis philosophorum*.

Necessity, according to Democritus, is fate and law, providence and the creator of the world. But the substance of this necessity is the antitype, and the movement and impact of matter.⁸⁰

A similar passage is to be found in the physical eclogue⁸¹ of Stobaeus⁸² and in the sixth book of the *Praeparatio evangelica* of Eusebius.⁸³ In the ethical eclogue of Stobaeus the following sentence of Democritus is preserved⁸⁴ – it is almost exactly repeated in the 14th book of Eusebius,⁸⁵ namely, human be-

⁷⁷ Cicero, *On Fate*, 10 [22, 23]. Epicurus [thinks] that the necessity of fate can be avoided... . Democritus preferred to accept the view that all events are caused by necessity.

Id., *On the Nature of the Gods*, I, 25 [69]. He [Epicurus] therefore invented a device to escape from determinism (the point had apparently escaped the notice of Democritus)... .

Eusebius, *Preparation for the Gospel*, I, p. 23 seqq. Democritus of Abdera [assumed] ... that all, the past as well as the present and the future, has been determined always, since time immemorial, by necessity. [Marx – all in Latin]

⁷⁸ Aristotle, *On the Generation of Animals*, V, 8 [7 Sgb, 2-3]. Democritus ... reduces to *necessity* all the operations of Nature. [Marx – in Greek]

⁷⁹ Diogenes Laertius, IX, 45. All things happen by virtue of necessity, the vortex being the cause of the creation of all things, and this he (Democritus) calls *necessity*. [Marx – in Greek]

⁸⁰ (Plutarch) *On the Sentiments of the Philosophers*, I p. 252, Parmenides and Democritus [say] that there is nothing in the world but what is necessary, and that this same necessity is otherwise called fate, right, providence and the creator of the world. [Marx – in Greek]

⁸¹ Selections. [Translator]

⁸² Stobaeus, *Physical Selections*, I, 8. Parmenides and Democritus [say] that everything occurs by *necessity*, this being *fate*, justice, providence [and the architect of the world]. Leudppus [says] that everything [occurs] by necessity, this being fate. For he says ... nothing originates without cause, but everything because of a cause and of *necessity*. [Marx – in Greek]

⁸³ Eusebius, *Preparation for the Gospel*, VI, p. 257. ... fate, that ... for the others (i.e., Democritus) depends on these small bodies, which are carried downward and then ascend again, that conglomerate and again dissipate, that run away from each other and then come together again by *necessity*. [Marx – in Greek]

⁸⁴ Stobaeus, *Ethical Selections*, II [p. 198]. Men like to create for themselves the illusion of chance – an excuse for their own perplexity; since chance is incompatible with sound thinking. [Marx – in Greek]

⁸⁵ Eusebius, *Preparation for the Gospel*, XIV, p. 782. ... and he (i.e., Democritus) has made chance the master and ruler of the universal and divine, and has claimed that everything happens through chance. At the same time he keeps it away from human life and has decried as stupid those who proclaim it. Indeed, at the

ings like to create the illusion of chance – a manifestation of their own perplexity, because *chance conflicts with sound (starken) thinking*. Even so, *Simplicius* points out a passage in Democritus in which Aristotle speaks of the ancient doctrine that transcends (*aufhebt*) chance.⁸⁶

The contrast [is] with Epicurus:

Necessity, introduced⁸⁷ by some as the absolute ruler, *does not exist*, but rather some things are *accidental*, others depend on our *chosen will (Willkür)*.⁸⁸ Necessity cannot be persuaded, but chance is unstable. It would be better to follow the myth about the gods than to be a slave to the *heimarine*⁸⁹ of the physicists. For the former leaves hope for mercy if we do honour to the gods, while the latter is inexorable necessity. But it is *chance*, which must be accepted, *not God*, as the multitude believe.⁹⁰

It is a misfortune to live in necessity, but to live in necessity is not a necessity. On all sides many short and easy paths to freedom

beginning of his teachings he says: ‘Men like to create for themselves the illusion of chance – an excuse for their own folly; since it is natural that sound thinking is incompatible with chance; and they have said that this worst enemy of thinking rules; or rather, they accept chance instead of thinking by totally removing and abolishing sound thinking. For they do not appreciate thinking as blissful, but chance as the most reasonable.’ [Marx – in Greek]

⁸⁶ Simplicius, 1. c., p. 351. The expression ‘like the ardent doctrine that removes chance’ seems to refer to Democritus... [Marx – in Greek]

⁸⁷ ‘Introduced’ (*eingeführt*) corrected by Marx from ‘played up’ (*aufgeführt*). [Dirk J. and Sally R. Struik – MECW]

⁸⁸ *Willkür* is Kant’s ‘will of choice’ – i.e., a free, unconditioned, and unconstrained will. Most translations of Marx, and particularly those by Palme-Dutt, renders *Willkür* as ‘arbitrariness’ or ‘caprice’. This is to ascribe a pejorative undertone that the word that is lacking in philosophical discourse. Certainly, a ‘will’ which is ‘unconditioned’ must be ‘arbitrary’ and ‘capricious’ because its resolution is one which has not been forced by any prior determining reason, circumstance, or cause. If, on one occasion, I chose to eat chocolate ice-cream rather than vanilla ice-cream – having an equal liking for both – my choice is indeed ‘arbitrary’, or a matter of ‘chance’, but it is also ‘free’, and it is this sense of a ‘free choice’ which is fundamental here.

⁸⁹ What has been decreed, destiny. [Dirk J. and Sally R. Struik – MECW]

⁹⁰ Diogenes Laertius, X, 133, 134. ... Destiny, which some introduce as Sovereign over all things, he laughs to scorn, affirming rather that some things happen of necessity, others by chance, others through our own agency. For he sees that necessity destroys responsibility and that chance or fortune is inconstant; whereas our own actions are free, and it is to them that praise and blame naturally attach. It were better, indeed, to accept the legends of the gods than to bow beneath the yoke of destiny which the natural philosophers have imposed. The one holds out some faint hope that we may escape if we honour the gods, while the necessity of the naturalists is deaf to all entreaties. But he holds to chance, not to a god, as the world in general (*hoi polloi*) does ... [Marx – in Greek]

are open. Let us therefore thank God that no man can be kept in life. It is permitted to subdue necessity itself.⁹¹

The Epicurean Velleius in Cicero says something similar about Stoic philosophy:

What are we to think of a philosophy in which, as to ignorant old women, everything seems to occur through fate? ... by Epicurus we have been redeemed, set free.⁹²

So Epicurus *denies* even the *disjunctive judgement* so as not to be obliged to acknowledge necessity.⁹³

True, it is maintained that Democritus also applied the concept of chance, but of the two passages to be found about this in Simplicius⁹⁴ the one renders the other suspect, because it shows clearly that it was not Democritus who used the category of chance, but Simplicius who ascribed it to him as a consequence. For he says: Democritus specifies no universal ground for the creation of the world. He *appears* therefore to make chance the ground (of creation). Here, however, we are concerned not with a *determining of the content*, but rather with the *form*, that Democritus has applied to *consciousness*. Similarly in regard to the account by Eusebius that Democritus had made chance the master of the universe (*Allgemeinen*) and the divine, and [that he] held here that everything occurs through chance, while he kept

⁹¹ Seneca, *Epistle* XII, p. 42. 'It is wrong to live under necessity; but no man is constrained to live under necessity... On all sides lie many short and simple paths to freedom; and let us thank God that no man can be kept in life. We may spurn the very constraints that hold us.' Epicurus ... uttered these words...

⁹² Cicero, *On the Nature of the Gods*, I, 20 [55-56]. But what value can be assigned to a philosophy (i.e., the Stoic) which thinks that everything happens by fate? It is a belief for old women, and ignorant old women at that... But Epicurus has set us free [from superstitious terrors] and delivered us out of captivity... [Cicero wrote 3 books on the nature of the gods from the perspective of the Epicureans, Stoics, and Academicians respectively, finally accepting the Stoic position. In his book *De Fato* he discussed the problem of Free Will and decides against Stoic fatalism. Oxford Classical Dictionary.]

⁹³ Ibid. I, 25 [70]. He (i.e., Epicurus) does the same in his battle with the logicians. Their accepted doctrine is that in every disjunctive proposition of the form '*so-and-so either is or is not*', one of the two alternatives must be true. Epicurus took alarm; if such a proposition as '*Epicurus either will or will not be alive tomorrow*' were granted, one or the other alternative would be *necessary*. Accordingly he denied the *necessity* of a disjunctive proposition altogether. [Marx – in Latin]

⁹⁴ Simplicius, I. c., p. 351. But also Democritus states, where he brings it up, that the different kinds must separate themselves from the totality, but not how and because of what reason, and seems to let them originate automatically and by chance.

Ibid. p. 351. ... and since this man (i.e., Democritus) has apparently applied chance in the creation of the world... [Marx – in Greek]

chance distant from human life and empirical nature, and had called its supporters foolish.⁹⁵

In part, we can see in here only a naked manufacturing of consequences by the Christian bishop *Dionysius*, and in part, [a desire] where the origins of the universe (*Allgemeine*) and the divine [are concerned] to exclude chance from the Democritean concept of necessity.

This much is historically certain: *Democritus* makes use of *necessity*, *Epicurus* of *chance*. And each rejects the opposing view with polemical irritation.

The principal consequence of this difference appears in the explanation of individual physical phenomena.

Necessity appears in finite nature as *relative necessity*, as *determinateness*. Relative necessity can only be deduced from *real possibility* that is,⁹⁶ it is a circle of conditions, reasons (*Ursachen*), grounds, etc., through which all necessity is mediated. Real possibility is the explication of relative necessity. And we find it employed by Democritus. We cite a few passages from Simplicius.

If somebody is thirsty and drinks and feels better, Democritus will not assign chance as the cause, but thirst. Because, even though he appears to use chance in regard to the creation of the world, in the particular, nothing [cannot] be the cause but must lead back to another [prior] cause. So, for example, digging is the cause of finding treasure, or growth the cause of the olive tree.⁹⁷

The enthusiasm and seriousness with which Democritus introduces this manner of explanation into the observation of nature, the importance he ascribes to ascertain of causes, are naïvely⁹⁸ expressed in his confession:

I would rather discover a new aetiology than acquire the Persian crown.⁹⁹

⁹⁵ Comp. Eusebius, l. c., XIV, p. 781[-782]. ... and this [said] one (i.e., Democritus), who had sought vainly and without reason for a cause, since he started from an empty principle and a faulty hypothesis, and has taken as the greatest wisdom the understanding of unreasonable [and foolish] happenings, without seeing the root and general necessity of things... [Marx – in Greek]

⁹⁶ After 'is' Marx erased *gleichsam*, 'as it were'. [Dirk J. and Sally R. Struik – MECW]

⁹⁷ Simplicius, l. c., p. 351. ... indeed, when somebody is thirsty, he drinks cold water and feels fine again; but Democritus will probably not accept chance as the cause, but the thirst.

Ibid, p. 351. ... for, even though he (Democritus) seems to use chance in regard to the creation of the world, yet he maintains that in individual cases chance is not the cause of anything, but refers us back to other causes. For instance: the cause of treasure trove is the digging or the planting of the olive tree... .

Comp. ibid, p. 351. ... but in individual cases, he (Democritus) says, [chance] is not the cause. [Marx – in Greek]

⁹⁸ After 'naïvely' Marx erased 'also'. [Dirk J. and Sally R. Struik – MECW]

Epicurus stands, once again, directly opposed to Democritus. Chance is an actuality that only has the value of possibility. *Abstract possibility*, however, is the direct *antipode of real [possibility]*. The latter is constrained within sharp boundaries, as is the intellect (*Verstand*); the former is unconstrained, like imagination (*Phantasie*). Real possibility seeks to ground objects in necessity and reality; abstract [possibility] is not concerned with the object it seeks to explain, but rather [its concern is] with the subject that explains. For the subject, the object need only be possible, conceivable. The abstractly possible does not stand in the way of the thinking subject, it is no boundary to that subject, [there is] no kernel (*Stein*) of resistance (*Anstoß*).¹⁰⁰ If this object is now also [to be considered] possible, [then] thinking is [un]concerned whether its attention [*Interesse*] extends, or does not [extend], to the object as object.¹⁰¹

Epicurus therefore proceeds with a boundless nonchalance in the explanation of particular physical phenomena.

Light will [be shed upon] this by the letter to Pythocles, which we will consider later. Here it suffices to attend to Epicurus' relation to the opinions of earlier physicists. Where the author of *De Placitis philosophorum* and Stobaeus quote the differing views of the philosophers concerning the substance of the stars, the size and shape of the sun, and similar matters, it is always said of Epicurus: he rejects none of these opinions, *all could* be right, he adheres to the *possible*.¹⁰² Yes, Epicurus *polemicalises* against even rational determination and the therefore one-sided explanatory method of real possibility.

As *Seneca* says in his *Quaestiones naturales*: Epicurus maintains that all these causes could be [possible], and attempts, in consequence, still more alternate explanations. He *blames* those who maintain that any one of these

⁹⁹ Eusebius, l. c., XIV, p. 781. Indeed, Democritus himself is supposed to have said that he would rather discover a new causal explanation than acquire the Persian crown. [Marx – in Greek]

¹⁰⁰ Marx is here using a term, *Anstoß*, that was popularised by Fichte and that replaced for him 'the given' of Kant's 'thing in itself'. Without such a 'given' thought finds no 'resistance' to its flights of fancy. That this is Marx's meaning is confirmed by the sentence that follows.

¹⁰¹ The negative here added in respect of 'concerned' is implied by what Marx has already said. It is possible that its omission was due to a lapse on the part of the amanuensis who prepared the 'fair hand' copy of Marx's thesis before its submission.

¹⁰² (Plutarch) *On the Sentiments of the Philosophers*, II, p. 261 [13]. Epicurus rejects none of these opinions, [Marx added here: 'that is, opinions of the philosophers on the substance of the stars'.] [for he keeps to] what is possible.

Ibid. II, p. 265 [21]. Epicurus says again that all the foregoing is possible.

Ibid. [II, 22] Epicurus believes that all the foregoing is possible.

Stobaeus, *Physical Selections*, I, p. 54. Epicurus rejects none of these opinions, for he keeps to what is possible. [Marx – in Greek]

determinations are bound to occur, because it is rash to judge apodictically about what only follows from conjectures.¹⁰³

One sees there is no interest present to enquire into the real ground of objects. All that is of concern is merely the tranquillity of the explaining subjects. Because all possibilities are admitted as possible, which corresponds to the character of abstract possibility, frequently *the chance of being* is merely transposed into the *chance of thought*. The one rule that Epicurus prescribes, namely, that 'explanation should *not* be permitted to *contradict* sensuous perception', is self-evident; because abstract possibility consists precisely in being free from contradiction, which consequently is to be avoided.¹⁰⁴ Finally, Epicurus confesses that his method of explanation only has in view the *ataraxy*¹⁰⁵ of self-consciousness, not knowledge of nature in and for itself.¹⁰⁶

As everything here relates in a contrary way to Democritus, no further clarifying statement is needed.

We see that both men stand opposed, step by step. The one is a sceptic, the other a dogmatist; the one considers the sensuous world to be subjective appearance, the other to be objective phenomena (*Erscheinung*). The one who considers the sensuous world to be subjective appearance applies himself to empirical natural science and to positive knowledge, and represents the unrest of experimenting, of learning about all, and of observation that ranges over the far and the wide. The other, who considers the phenomenal world to be real, scorns the empirical; the serenity of thought, satisfied in itself, the self-sufficiency that obtains its knowledge *ex principio interno*,¹⁰⁷ are embodied in him. But the contradiction goes still farther. The *sceptic* and *empiricist*, who holds sensuous nature to be subjective appearance, considers it from the point of view of *necessity*, and seeks to explain and to grasp the real existence of things. On the other hand, the *philosopher* and *dogmatist*,

¹⁰³ Seneca, *Questions of Nature*, VI, 20, [5,] p. 802. Epicurus asserts that all the foregoing may be causes, but he tries to introduce some additional ones. He criticises other authors for affirming too positively that some particular one of the causes is responsible, as it is difficult to pronounce anything as certain in matters in which conjecture must be resorted to. [Marx – in Latin]

¹⁰⁴ Comp. Part II, Chapter 5.

Diogenes Laertius, X, 88. However, we must observe each fact as presented, and further separate from it all the facts presented along with it, the occurrence of which from various causes is not contradicted by facts within our experience... . All these alternatives are possible; they are contradicted by none of the facts... . [Marx – in Greek]

¹⁰⁵ *Ataraxy*, in ancient Greek ethics, tranquillity. In Epicurean ethics – the ideal of life. The state of the sage who has attained inner freedom through knowledge of nature and deliverance from fear of death. [Dirk J. and Sally R. Struik – MECW]

¹⁰⁶ Diogenes Laertius, X, 80. We must not suppose that our treatment of these matters fails of accuracy, so far as it is needful to ensure our tranquillity (*ataraxy*) and happiness. [Marx – in Greek]

¹⁰⁷ From an inner principle. [Dirk J. and Sally R. Struik – MECW]

who considers phenomena to be real, sees everywhere only chance, and his method of explanation tends rather to go beyond (*aufzuheben*) all objective reality of nature. A certain absurdity seems to lie in these contradictions.

Scarcely, however, can one suppose that these men, who contradict one another in everything, will adhere to one and the same doctrine. And yet they appear to be chained one to another.

The task of the next section is to grasp their relation in general.¹⁰⁸

[Here there is a lacuna in the manuscript. Sections 4 and 5 are lost. What Marx had to say about the 'general' relationship between Democritus and Epicurus is unknown.]

¹⁰⁸ The manuscripts of the 'General Difference in Principle Between the Democritean and Epicurean Philosophy of Nature' and 'Result' have not been found. [Dirk J. and Sally R. Struik – MECW]

PART TWO

ON THE DIFFERENCE BETWEEN DEMOCRITEAN AND EPICUREAN PHYSICS IN DETAIL

CHAPTER ONE

THE DECLINATION OF THE ATOM FROM THE STRAIGHT LINE

Epicurus admits a *threefold* motion of the atoms in the void.¹⁰⁹ One motion is the *fall in a straight line*, the second originates in the atom's *deviation from the straight line*, and the third is established through the *repulsion of the many atoms*. Both Democritus and Epicurus accept the first and the third motion. The *declination of the atom* from the straight line differentiates the one from the other.¹¹⁰

Concerning this motion of declination,¹¹¹ it has often been a joke. Above all, *Cicero* is inexhaustible when he alludes to this theme. So he enjoins, among other things:

Epicurus maintains that the atoms are thrust downwards in a straight line by their weight; this motion is the natural motion of bodies. But then it occurred to him that if all [atoms] are driven downwards, no atom could meet another. Epicurus therefore takes refuge in a lie. He said that the atom makes a very slight change of direction, which, however, is entirely impossible. From this arose complexities, combinations, and the adhesions of atoms with each another, and out of this came the world, all parts of the world, and what is in it. Despite this childish fiction, he never once achieves what he desires.¹¹²

¹⁰⁹ Stobaeus, *Physical Selections*, 1, p. 33. Epicurus says ... that the atoms move sometimes vertically downwards, at other times by deviating from a straight line, but the motion upward is due to collision and recoil.

Comp. Cicero, *On the Highest Goods and Evils*, I, 6 (Plutarch,) *On the Sentiments of the Philosophers*, p. 249 [I, 12]. Stobaeus, l.c., p. 40. [Marx – in Greek]

¹¹⁰ Cicero, *On the Nature of the Gods*, 1, 26 [73]. What is there in Epicurus' natural philosophy that does not come from Democritus? Since even if he introduced some alterations, for instance the *swerve of the atoms* of which I spoke just now ... [Marx – in Greek]

¹¹¹ Corrected by Marx from 'last motion'. [Dirk J. and Sally R. Struik – MECW]

¹¹² Cicero, *On the Highest Goods and Evils*, I, 6 [18-19]. He (Epicurus) believes that these same indivisible solid bodies are borne by their own weight perpendicularly

We find another version in the first book of Cicero's treatise *On the Nature of the Gods*:

Since Epicurus saw that, if the atoms travelled downwards by their own weight, nothing will stand within our control, because their motion would be determined and necessary, he invented a means to escape this necessity, one that had escaped the notice of Democritus. He says that the atom, though thrust downwards by its weight and gravity, makes a slight change of direction. To assert this is more disgraceful than to be unable to defend what he desires.¹¹³

Pierre Bayle expresses a similar opinion:

Before him, (i.e., Epicurus), only the motion of weight and that of reflection were conceded to the atom... . Epicurus supposed that even in the midst of the void the atoms can decline from the straight line, and from this, he said, arose freedom... . It must be noted, in passing, that this was not the only motive that led him to invent this motion of declination. He also used it to explain the meeting of atoms; for he saw clearly that by supposing they fall with equal speed downwards along straight lines, he would never be able to explain how they could meet, and that therefore the creation of the world would have been impossible. It was necessary, then, that they should deviate from the straight line.¹¹⁴

For the present I leave the validity of these reflections unconsidered. This much everyone will observe in passing, that the most recent critic of Epicurus, *Schaubach*, has misunderstood Cicero when he says:

downward, which he holds is the natural motion of all bodies; but thereupon this *clever fellow*, encountering the difficulty that if they all travelled downwards in a straight line, and, as I said, perpendicularly, no one atom would ever be able to overtake any other atom, accordingly introduced an idea of his own invention: he said that the atom makes a very tiny swerve – the smallest divergence possible; and so are produced entanglements and combinations and cohesions of atoms with atoms, which result in the creation of the world and all its parts, and of all that is in them. [Marx – in Latin]

¹¹³ Cicero, *On the Nature of the Gods*, I, 25 [69-70]. Epicurus saw that if the atoms travelled downwards by their own weight, we should have no freedom of the will, since the motion of the atoms would be determined by necessity. He therefore invented a device to escape from determinism (the point had apparently escaped the notice of Democritus): he said that the atom while travelling vertically downward by the force of gravity makes a very slight swerve to one side. This defence discredits him more than if he had had to abandon his original position. Comp. Cicero, *On Fate*, 10 [22-23]. [Marx – in Latin]

¹¹⁴ Bayle, *Dictionnaire historique et critique* (Historical and Critical Dictionary), article on Epicurus. [Marx – quoted in French]

The atoms are all driven by gravity downwards in parallel, on account of physical causes, but through a prevailing repulsion come [to have] another motion; according to Cicero (*De nature deorum*, I, 25 [p. 69]) an oblique motion, [derived] from accidental causes, and indeed from eternity.¹¹⁵

In the first place, in the passage quoted, Cicero does not make repulsion the reason for the oblique direction, but rather the oblique direction the reason for repulsion. In the second place, he does not speak of accidental causes, but rather criticises [the fact] that no causes are mentioned, for in and of itself it would be contradictory to assume [both] repulsion and, at the same time, accidental causes as the ground of the oblique direction. At best repulsion could be an accidental cause of repulsion, but not an accidental cause of the oblique direction.

It is unnecessary to make one oddity in Cicero's and Bayle's reflections obvious – in order not to bring it to the fore immediately – namely, they foist upon Epicurus motives in which one annuls (*aufhebt*) the other. Epicurus is supposed to have assumed a declination of the atoms in order to explain repulsion at one time and freedom at another. If atoms do *not* meet without declination, then declination, as an explanation of freedom, is superfluous; for the opposite of freedom begins, as we see in Lucretius,¹¹⁶ with the deterministic and forced co-meeting of atoms. If atoms meet *without* declination, then this [declination] is superfluous for the founding of repulsion. I maintain that this contradiction arises when the grounds for the declination of atoms from the straight line are understood so superficially and incoherently as they are in Cicero and Bayle. We shall find, on the whole, a more profound exposition in Lucretius, the only one of all the ancients who grasped Epicurean physics.

We now shall consider the declination itself.

Just as the point is transcended and preserved (*aufgehoben*) in the line, so is every falling body transcended and preserved in the straight line it describes. Its specific quality is not relevant (*ankommt*) at all. A falling apple describes a perpendicular line, as does a piece of iron. Every body, in so far as we are construing the motion of a fall, is nothing other than a moving point, and indeed a point devoid of independence, which, in a determinate form of being – the straight line it subscribes – abandons (*aufgibt*) its individuality (*Einzelheit*). Aristotle remarked, with justification, against the Pythagoreans: 'You say that the motion of the line is the surface, that of the point, the line; so the

¹¹⁵ Schaubach, *Über Epikur's astronomische Begriffe*, (On Epicurus' Astronomical Concepts), in *Archiv für Philologie und Pädagogie*, by Seebode, Vol., V, H. 4, [1839], p. 549. [Marx]

¹¹⁶ Lucretius, *On the Nature of Things*, 11, 251 ff. Again, if all movement is always interconnected, the new rising from the old in a determinate order ... what is the source of the free will? [Marx – in Latin]

motions of the monads will also be lines.¹¹⁷ The consequence of this for monads, as well as for atoms – as they are in constant motion¹¹⁸ – would be that neither monads nor atoms exist, but rather disappear in the straight line; because the solidity of the atom is not in consideration (*vorhanden*) in so far as the atom is merely grasped as falling in a straight line.¹¹⁹

Above all, if the void is posited as a spatial void, then the atom is the *immediate negation of abstract space*, hence a *spatial point*. The solidity, the intensity, which it maintains against the externality of space in general, can only be added by means of a principle that negates ‘space’ in its entire domain, a principle such as ‘time’ is in actual nature. Moreover, if this itself is not admitted, the atom, in so far as its motion is a straight line, is determined purely by space, and is prescribed [thereby] a relative presence (*Dasein*), and a purely material existence. But, we have seen, one moment in the concept of the atom is its Form, [that is to say] negation of all relativity, of all relation to another determinate being.¹²⁰ We have, at the same time, noted that Epicurus objectifies for himself both moments which, though they are quite contradictory, are nevertheless inherent in the concept of the atom.

How then can Epicurus only actualise the pure form-determination of the atom, the concept of pure individuality, that negates every other determinate existence (*Dasein*)?¹²¹

¹¹⁷ Aristotle, *On the Soul*, I, 4 16-17 [409, 1-5]. How are we to imagine a unit [monad] being moved? By what agency? What sort of movement can be attributed to what is without parts or internal differences? If the unit is both originative of movement and itself capable of being moved, it must contain differences. Further, since they *say* a moving line *generates* a surface and a moving point a line, the movements *of the psychic* units must *be* lines. [Marx – in Greek]

¹¹⁸ Diogenes Laertius, X, 43. The atoms are in continual motion. Simplicius, l.c., p. 424. ... the followers of Epicurus ... [taught] eternal motion. [Marx – in Greek]

¹¹⁹ This is rather obscure, but what Marx is referring to is the *quality* of an atom, which quality is its solidity, and the *quality* of a monad, which quality is its aspatiality as a point; both qualities are irrelevant if both are deemed to fall in a straight line anyway. The ‘falling’ is something independent of the specific, or species, difference between the two. However different they may be in species, an atom and a monad are deemed, *a priori*, to fall in a straight line, that is to say, they do so ‘by definition’, so their ‘falling’ has nothing to do with what they are in themselves.

¹²⁰ A thing may be defined ‘relatively’ – which is to say, ‘materially’ – by reference to something else, or ‘intrinsically’ – which is to say, ‘formally’ – by reference to its inner nature. If we ask why the former definition is ‘material’ it is because we are not concerned with ‘what a thing is’, but rather with the fact ‘that it is’, i.e., with its material existence as a *thing*.

¹²¹ To define something in terms of its ‘form’ is to determine it as an instance of some *kind* of thing. That a thing is of *kind* X negates every other determinate existence, for the thing now has an identity in its own right, as opposed to an existence determined by its relation to other things.

Since it is moving in the domain of immediate being, so all determinations are immediate. Therefore, the opposing determinations will be opposed as immediate actualities.¹²²

The *relative* existence to which the atom is opposed, the *determinate being that it has to negate*, is *the straight line*. The immediate negation of this motion is *another motion*, which, itself spatially conceived, is the *declination from the straight line*.¹²³

Atoms are purely self-sufficient bodies, or rather bodies conceived in absolute self-sufficiency, like the heavenly bodies. Hence, like the heavenly bodies, they move not in straight lines but in oblique lines. *The motion of falling is the motion of non-self-sufficiency*.¹²⁴

If, therefore, Epicurus represents the materiality of the atom by its motion along a straight line, he has realised its form-determination in the declination from the straight line, and these opposing determinations are presented as immediately opposed motions.¹²⁵

Lucretius is therefore right when he maintains that: the declination breaks the *fati foedera*,¹²⁶ and, as he applies this directly to consciousness,¹²⁷ it can

¹²² The atoms moves in space, which 'space' is the immediate realm of its determination or existence. The realm of 'space' is opposed to the atom as an immediate actuality: as a that medium in which the atom exists directly, and so without any form of mediation. If I swim in water, the actuality of the water around me is the immediate environment determining the nature of my existence at that moment, which is to say, as a swimmer.

¹²³ An atom is a 'solid lump', and this is its 'intrinsic determination'. If the atom is to *resist* a 'relative determination', namely, a 'thing which moves in a straight line', then it must decline from this straight line. Only by so doing does the atom gain an *individuality* in its own right. This is so precisely because this declination is an event which is *not* induced by any external forces, rather the declination is a consequence of the atom's own nature, or what it is as an *individual*.

¹²⁴ The action of 'falling in a straight line' has been imposed upon the atom, and, as such, constitutes an external factor in its definition. Such external elements in the definition of a thing are a denial of its 'self-sufficiency', or its intrinsic, individual, separateness from other things.

¹²⁵ This short sentence is the crux of Marx's doctoral thesis: in so far as Epicurus allows the atom to deviate from a fall in straight line, the material and the formal, or the *material* and the *ideal*, determinations of the atom are opposed. The atom does not blindly: 'obey the law of nature', it acts for itself as an individual and, in so doing, proves itself to be an entity not bound by its external nature – similarly, man can act outside the *fate* imposed upon him by his material circumstances and in doing so change his society – if necessary, by revolution.

¹²⁶ *Lucretius, On the Nature of Things*, 11, 251, 253-255. ... if the atoms never swerve so as to originate some new movement that will snap the bonds of fate (*fati foedera*) the everlasting sequence of cause and effect... [Marx – in Latin]

¹²⁷ *Ibid.* II, 279-280. ... there is within the human breast something that can fight against this force and resist it. [Marx – in Latin]

be said of the atom that the declination is the something in the breast that is able to fight against and resist [fate].¹²⁸

When Cicero reproaches Epicurus that:

he does not once attain the goal for which he invented this; if all atoms declined, none of them would ever combine, or some would deviate, others would be driven straight ahead by their motion. So it would be necessary, as it were, to give atoms determinate situation beforehand: which were to move straight ahead and which obliquely.¹²⁹

This objection has the justification that the two moments which are inherent in the concept of the atom are represented as immediately different motions that must be allotted to different individuals – an inconsistency, but a consistent one, since the domain of the atom is immediacy.¹³⁰

Epicurus feels this inherent contradiction very much. In consequence, he endeavours to present the declination as occurring as *imperceptible* as possible; it takes place:

in an uncertain time, in an uncertain place,¹³¹

it occurs in the least possible space.¹³²

Further, *Cicero*¹³³ and, according to Plutarch, several ancient authors,¹³⁴ rebuke Epicurus for saying that the declination of the atom occurs *without*

¹²⁸ An atom is 'fated' to fall, but by its declination from the straight line it breaks free from the 'bonds' of this fate, and expresses its own 'freedom'.

¹²⁹ Cicero, *On the Highest Goods and Evils*, I, 6 [19-20]. ... yet he does not attain the object for the sake of which this fiction was devised. For, if all the atoms swerve, none will ever come to cohere together; or if some swerve while others travel in a straight line, by their own natural tendency, in the first place this will be tantamount to assigning to the atoms their different spheres of action, some to travel straight and some sideways... [Marx – in Latin]

¹³⁰ Cicero is concerned that both the 'two moments inherent in the concept of the atom', which is to say, their 'falling' and their 'declination', must be pre-determined if there is to be any 'combining' of atoms. This would invalidate the 'freedom' of the atom to change its motion 'at will' as each would be given a prior 'determinate situation'. Because both motions concern the atom 'in its immediacy' which is to say, without reference to anything else, they presents us with two contradictory 'aspects' in relation to the atom: a) an externally imposed 'falling', and b) an internally determined 'declination'. We therefore have two opposed definitions of the same thing, first, as 'under compulsion', and second, as 'free to wander'.

¹³¹ (Lucretius, *De rerum nature*, II, 294) Lucretius, l.c., 293. [Marx – quoted in Latin]

¹³² Cicero, *On Fate*, 10 [22]. ... when the atom swerves sideways a minimal space, termed [by Epicurus] *elachiston* (the smallest). [Marx – in Latin]

cause, and nothing more shameful, says Cicero, can happen to a physicist.¹³⁵ But, in the first place, a physical cause such as Cicero wants would throw the declination of the atom back into the realm of determinism, out of which it is precisely to be lifted. *And then, the atom is by no means complete before it has been submitted to the determination of declination.* To enquire about the cause of this determination means to enquire about the cause that makes the atom a principle – clearly a meaningless enquiry to anyone for whom the atom is the cause of everything, [and] consequently, itself without cause.

When, finally, Bayle,¹³⁶ supported by the authority of Augustine,¹³⁷ who states that Democritus ascribed to the atom a spiritual principle – an authority who, in contrast to Aristotle and the other ancients, is without importance – reproaches Epicurus for having revealed the declination [of the atom] instead of this spiritual principle. But, on the contrary, merely a word would have been gained with this ‘soul of the atom’, whereas the declination presents the actual soul of the atom, the concept of abstract individuality.¹³⁸

Before we consider the consequence of the declination of the atom from the straight line, it is of the highest importance to bring forward a most important moment that, so far, has been entirely overlooked.

The declination of the atom from the straight line is, namely, not a particular determination which appears accidentally in Epicurean physics. The law it expresses runs through the whole of Epicurean philosophy in such a way, it

¹³³ Ibid. Also, he is compelled to profess in reality, if not quite explicitly, that this swerve takes place without cause... [Marx – in Latin]

¹³⁴ Plutarch, *On the Creation of the Soul*, VI (VI, p. 8, stereotyped edition). For they do not agree with Epicurus that the atom swerves somewhat, since he introduces a motion without cause out of the non-being. [Marx – in Greek]

¹³⁵ Cicero, *On the Highest Goods and Evils*, I, 6 [191]. The swerving is itself an arbitrary fiction (for Epicurus says *the atoms swerve* without a cause, *yet this* is a capital offence in a natural philosopher, to speak of something taking place uncaused). Then also he gratuitously deprives the atoms of what he himself declared to be the natural motion of all heavy bodies, namely, movement in a straight line downwards... [Marx – in Latin]

¹³⁶ Bayle, l.c. [Marx]

¹³⁷ Augustine, *Epistle* 56. [Marx]

¹³⁸ The term Abstract Individuality is Hegelian and refers to: ‘the individuality which arises as a result of the ‘abstraction’ of any individual from its context’. This ‘abstraction’ is a necessary ‘logical moment’ in the development of any individual. A child must first learn to dissociate itself from the world and from other individuals (e.g. from its parents) before it is able to recognise itself as an individual and, in due course, return again to associate itself once more as part of the collective whole of mankind and his society. The failure to dissociate oneself in this way as an individual will inexorably lead to a failure to achieve a freely willed integration into human society. A bee, for example, constitutes a *part* of a collective (or greater whole) but never raises itself to the level of a self-willing *moment* of that collective. (Translator)

goes without saying, that the determination of its appearance depends upon the domain in which it is applied.

Abstract individuality can make its concept – its form-determination, the pure being-for-itself, the independence from immediate existence (*Dasein*), the being transcendent (*Aufgehoben-sein*) over all relativity – effective only by *abstracting from the determinate being (Dasein) that it confronts*; for, in order truly to overcome what it confronts, abstract individuality had to idealise it, for only the universal divorces (*vermag*).¹³⁹

As the atom frees itself from its relative existence, [which is] the straight line, by abstracting from it, by swerving away from it, so it reveals (*ausbeugt*) the entire Epicurean philosophy as a swerving away from determinate being wherever the concept of abstract individuality, self-sufficiency, and negation of all relation to an other, must be described (*dargestellt*) in its existence.

The purpose of this action is [to be found] therefore in abstraction, [and] the swerving away from pain and confusion, in *ataraxy*.¹⁴⁰ So, good is the flight from evil,¹⁴¹ so, pleasure is the swerving away from suffering.¹⁴²

Finally, where abstract individuality appears in its highest freedom and independence, in its totality, there follows, as a consequence, the way in which it turns aside from determinate being, [from] *all being*, and *then, the gods turn away from the world*, and trouble themselves no more about it and live outside of it.¹⁴³

¹³⁹ Despite its inelegance, ‘divorce’ is the only English word adequate to conveying Marx’s meaning. The attainment of Abstract Individuality is, and must be, conceptual in nature. Things can be abstract from their circumstances ‘in thought’ – i.e., *ideally* – but cannot be detached from their *material* context. The child cannot detach itself from the family as a *material* entity, but it must do so *ideal* – as a separate consciousness – if it is to become an individual. Only when something is understood *ideally*, i.e., as a universal concept, is it truly considered ‘in its own right’. Consequently, the ‘universal’ serves to ‘divorce’ the ‘thing’ from its ‘context’ and, in so doing, grant that thing a distinct ‘individuality’. (Note, *Magen* is an alternative German word for ‘marriage’, deriving from the Greek *metabolis*.) [Translator]

¹⁴⁰ Diogenes Laertius, X, 128. For the end of all our actions is to be free from pain and fear. [Marx – in Greek]

¹⁴¹ Plutarch, *That Epicure Actually Makes a Pleasant Life Impossible*, 1091. Epicurus too makes a similar statement to the effect that the Good is a thing that arises out of your very escape from evil... [Marx – in Greek]

¹⁴² Clement of Alexandria, *The Miscellanies*, II, p. 415 [21]. ... Epicurus also says that the removal of pain is pleasure... [Marx – in Greek]

¹⁴³ Seneca, *On Benefits*, IV [4, 11] p. 699. Yes, and therefore God does not give benefits, but, free from all care and unconcerned about us, he turns his back on the world... and benefits no more concern him than injuries... [Marx – in Latin]

These gods of Epicurus have often been mocked, gods who, like human beings, dwell in the *intermundia*¹⁴⁴ of the actual world, [who have] no body, but rather a quasi-body, no blood, but rather quasi-blood,¹⁴⁵ and [who] are content to abide in blissful peace, [they] hear no supplications, [they] are unconcerned about us and [about] the world, [and who] are honoured on account of their beauty, their majesty, and their superior nature, and not for any gain.

And yet these gods are no fiction of Epicurus. They did exist. *They are the plastic gods of Greek art.*¹⁴⁶ Cicero, the Roman, rightly scoffs¹⁴⁷ at them, but Plutarch, the Greek, has forgotten the whole Greek outlook when he claims that, though this doctrine of the gods does away with fear and superstition, it produces no joy or favour in the gods, but instead bestows on us the [same] relation to them that we have to the Hyrcanian fish,¹⁴⁸ from which we expect neither harm nor advantage.¹⁴⁹ Theoretical calm is one of the chief characteristics of the Greek gods. As Aristotle says:

¹⁴⁴ The spaces between the worlds. (literally: inter-worlds). [Dirk J. and Sally R. Struik – MECW]

¹⁴⁵ Cicero, *On the Nature of the Gods*, 1, 24 [681] ... you gave us the formula just now – God has not body but a semblance of body, not blood but a kind of blood. [Marx – in Latin]

¹⁴⁶ Characterising here the gods of Epicurus, Marx, obviously, had in mind the remark by Johann Joachim Winckelmann in his book *Geschichte der Kunst des Altelluim*, 2 Teile, Dresden, 1767: 'The beauty of the deities in their virile age consists in the combination of the strength of mature years and the joyfulness of youth, and this consists here in the lack of nerves and sinews, which are less apparent in the flowering of the years. But in this lies also an expression of divine self-containment which is not in need of the parts of our body which serve for its nourishment; and this illuminates Epicurus' opinion concerning the shape of the gods to which he gives a body, which looks like a body, and blood, but which looks like blood, something which Cicero considers obscure and inconceivable'. [Dirk J. and Sally R. Struik – MECW]

¹⁴⁷ *ibid.*, 1, 38 [112, 115-116]. Well then, what meat and drink, what harmonies of music and flowers of various colours, what delights of touch and smell will you assign to the gods, so as to keep them steeped in pleasure... ? Why, what reason have you for maintaining that men owe worship to the gods, if the gods not only pay no regard to men, but care for nothing and do nothing at all? 'But deity possesses an excellence and pre-eminence which must of its own nature attract the worship of the wise.' Now how can there be any excellence in a being so engrossed in the delights of his own pleasure that he always has been, is, and will continue to be entirely idle and inactive? [Marx – in Latin]

¹⁴⁸ Hyrcanian Sea – ancient name of the Caspian Sea. [Dirk J. and Sally R. Struik – MECW] [Fabled for producing exotic fish and serpents. Translator]

¹⁴⁹ Plutarch, *That Epicurus Actually Makes a Pleasant Life Impossible*, p. [1100-]1101. ... their theory ... does remove a certain superstitious fear; but it allows no joy and delight to come to us from the gods. Instead, it puts us in the same State of mind with regard to the gods, of neither being neither alarmed nor rejoicing that we have regarding the Hyrcanian fish. We expect nothing from them either good or evil. [Marx – in Greek]

What is best has no need of action, for it is its own end.¹⁵⁰

We now consider the *consequence* that follows immediately from the declination of the atom. In it is expressed the atom's negation of all motion and relation by which it is determined as a particular determinate being by another being. This is presented in such a way that the atom abstracts from the opposing determined being and withdraws itself from it. What is contained herein, namely, *its negation of all relation to another*, must become *actually positively established*. This can only be done if *the determinate being to which it relates itself is none other than itself*, hence likewise *an atom*, and, therefore [that] it itself is immediately determined [as] *many atoms*. *The repulsion of the many atoms is therefore the necessary actuality of the lex atomi*,¹⁵¹ as Lucretius calls the declination. Because here every determination is posited as a particular being, repulsion is added as a third motion to the former ones. Lucretius is therefore right when he says that, if the atoms did not tend to decline, neither their repulsion nor their meeting would occur, and the world would never have been created.¹⁵² For atoms are *their own sole object and can only be related to themselves*, so, spatially speaking, they can only meet when every relative existence of these atoms by [means of] which they relate to others is negated.¹⁵³ And this relative existence is, as we have seen, their original motion, that of falling in a straight line. Hence they meet only by declination from the straight line. It has nothing to do with mere material dispersal.¹⁵⁴

¹⁵⁰ Aristotle, *On the Heavens*, II, 12 [292 4-6]. ... while the perfectly conditioned has no need of action, since it is itself the end... [Marx – in Greek]

¹⁵¹ The law of the atom. [Dirk J. and Sally R. Struik – MECW]

¹⁵² Lucretius, *On the Nature of Things*, 11, 221, 223-224. If it were not for this swerve, everything would fall downwards like rain-drops through the abyss of space. No collision would take place and no impact of atom on atom would be created anything. created. Thus nature would never have been created. [Marx – in Latin]

¹⁵³ This may seem obscure, but it is perfectly intelligible. The atom abstracts itself from things *like itself* – i.e., from other atoms – and only by this 'repulsion', this separation, does it become an *individual* capable of uniting again with its own kind, but this time freely and not by compulsion. For: *the atom*, read: *man*, for: *its negation of all relation to another*, read: *withdrawal from dependency on bourgeois employers*, and for: *the world would never have been created*, read: *no new form of society could ever come about*. These parallels are quite evident, and quite sound, even if, at this stage in Marx's thinking, they have not been developed. [Translator]

¹⁵⁴ Ibid. II, 284-292. So also in the atoms ... besides weight and impact there must be a third cause of movement, the source of this inborn power of ours... But the fact that the mind itself has no internal necessity to determine its every act and compel it to suffer in helpless passivity – this is due to the slight swerve of the atoms... [Marx – in Latin]

And in truth: the immediately existent individuality is only realised conceptually, in as far as it relates to something else which actually is itself, if the other confronting it is also in the form of [an] immediate existence. Thus man ceases to be a product of nature only when the other being to which he relates himself is not a different existence but is itself an individual human being, even if it is not yet mind. But for man, as man, to become his own real object, he must have crushed within himself his determinate existence (*Dasein*), the power of desire and of mere nature. *Repulsion is the first form of self-consciousness*, it corresponds therefore to the self-consciousness that grasps itself as [an] immediate-existent, as [an] abstract-individuality.¹⁵⁵

The concept of the atom is therefore actualised in repulsion, in as much as it is abstract form, but no less also the opposite, in as much as it is abstract matter; for that to which it relates itself are certainly atoms, but *other* atoms. *When I relate myself to myself as to an immediate-other, then my relationship is a material one.* This is the most extreme externality that can be conceived. In the repulsion of the atoms the materiality is the same [as itself], which are synthetically united in the fall in a straight line, and [in] the form-determination that was established in the declination.

Democritus, in contrast to Epicurus, transforms into an enforced motion, into an act of blind necessity, that which, to Epicurus, is the actualisation of the concept of the atom. We have already seen above that Democritus considers the vortex (*dine*), which results from the mutual repulsion and collision of atoms, to be the substance of necessity. He therefore grasps in *repulsion* only the material side, their dispersal, their change, and not the ideal side, in which all relation to others is negated and motion is posited as self-determination. This can clearly be seen from the fact that he conceives, quite sensuously, one and the same body divided through empty space into many parts, like gold broken into pieces.¹⁵⁶ Thus he scarcely grasps the One as the concept of the atom.¹⁵⁷

Aristotle rightly polemicises against him:

¹⁵⁵ This again is Hegel. The advance to universality is a) a step back and b) a step forward. It is a step back from a world which conditions us and determines our behaviour, it is a step forward to the possibility of being a free, rational actor. To become a free-willing entity, each man must raise himself above his appetites and desires. Those who remain venal, who are forever seeking more material things for the sake of possession, never attain to a true mastery over themselves.

¹⁵⁶ Aristotle, *On the Heavens*, I, 7 [276^a11]. If the whole is not continuous, but exists, as Democritus and Leucippus think, in the form of parts separated by void, there must necessarily be one movement of all the multitude. ... but their nature is one, like many pieces of gold separated from one another. [Marx – in Greek]

¹⁵⁷ The *One* is the self-sustaining, self-defining, self-dependent. It is *man* who, in Marx's later philosophy, both individually and collectively, defines, sustains, and depends upon himself, eschewing all dependency on the gods and on masters.

Hence Leucippus and Democritus, who assert that the primary bodies always moved in the void and in the infinite, should say what kind of motion this is, and what is the motion natural to them. For if each of the elements is forcibly moved by the other, then it is still necessary that each should have also a natural motion, outside which is the enforced one. And this first motion must not be enforced but natural. Otherwise the procedure goes on to infinity.¹⁵⁸

The Epicurean declination of the atom has therefore changed the whole inner structure of the realm of atoms, because through it, the determination of form is validated and the contradiction which lies in the concept of the atom is actualised. Epicurus was, consequently, the first to grasp the essence of the repulsion, even if only in a sensuous form (*Gestalt*), while Democritus only knew its material existence.

Hence we find more concrete forms of the repulsion applied by Epicurus. In the political domain it is the *covenant*,¹⁵⁹ in the social domain, friendship, which is praised as the highest [good].¹⁶⁰

¹⁵⁸ Ibid. III, 2 [300, 9-17]. Hence Leucippus and Democritus, who say that the primary bodies are in perpetual movement in the void or infinite, may be asked to explain the manner of their motion and the kind of movement which is natural to them. For if the various elements are constrained by one another to move as they do, each must still have a natural movement which the constrained contravenes, and the prime mover must cause motion not by constraint but naturally. If there is no ultimate natural cause of movement and each preceding term in the series is always moved by constraint, we shall have an infinite process. [Marx – in Greek] [In Aristotle's quote, for: *natural*, read: *free*. Translator]

¹⁵⁹ Diogenes Laertius, X, 150. Those animals which are incapable of making covenants with one another, to the end that they may neither inflict nor suffer harm, are *without either justice or injustice*. And those tribes which either could not or would not form mutual covenants to the same end are in like case. There never was an absolute justice, but only an agreement made in reciprocal intercourse, in whatever localities, now and again, from time to time, providing against the infliction or suffering of harm. [Marx – in Greek]

¹⁶⁰ This paragraph was added by Marx in the manuscript. [Dirk J. and Sally R. Struik – MECW]

CHAPTER TWO

THE QUALITIES OF THE ATOM

It contradicts the concept of the atom that it should have properties, because, as Epicurus says, every property is changeable but atoms do not change.¹⁶¹ Nevertheless, is it not at least a *necessary consequence* to attribute properties to atoms? Indeed, the many atoms of repulsion, separated by sensuous space, must necessarily be *immediately different from one another and from their pure essence*, i.e., they must possess qualities.

In the following analysis I therefore take no account of the assertion made by *Schneider* and *Nürnbergger* that 'Epicurus attributed no qualities to the atoms – paragraphs 44 and 54 of the *Letter to Herodotus* in Diogenes Laertius have been interpolated'. If this were actually so, how would one refute the evidence of Lucretius, Plutarch, and indeed of all other authors who speak of Epicurus? Moreover, Diogenes Laertius mentions the qualities of the atom not in two, but in ten paragraphs: Nos. 42, 43, 44, 54, 55, 56, 57, 58, 59 and 61. The ground these critics give for their contention – 'they did not know how to reconcile the qualities of the atom with its concept' – is very shallow.¹⁶² *Spinoza* says that ignorance is no argument.¹⁶³ If one was to strike out the passages in the ancients that he does not understand, how quickly would we have a *tabula rasa*!¹⁶⁴

Through the qualities the atom obtains [as] an existent, it contradicts its concept; it becomes as *externalised a determinated being* [that is] *different from its essence*. It is this contradiction that forms the main interests of Epicurus. As soon as he posits a property, and so draws [out] the consequence of the material nature of the atom, he counterpoints at once the time determinations that annul this property in its own sphere and thereby validates [again] the concept of the atom. *He therefore determines all properties in such a way that they contradict themselves*. Democritus, however, no-

¹⁶¹ Diogenes Laertius, X, 54 For every quality changes, but the atoms do not change. Lucretius, *On the Nature of Things*, II, 861-863. They must be kept far apart from the atoms, if we wish to provide the universe with imperishable foundations on which it may rest secure... [Marx – in Greek and Latin]

¹⁶² The reference is probably to the commentaries by Johann Baptist Carl Nürnbergger and Johann Gottlob Schneider on the following editions: Diogenes Laertius. *De vitis, dogmatibus et aethegmatibus liber decimus graece et latine separation editus...* a Carolo Nürnbergger Norimbergo, 1791 (the second edition appeared in 1808) and *Epicuri physica et meteorologica duabus epistolis eiusdem compmhenia. Graeca ad fidem librorum sciiptorum et editorum emandavit atque interpretatus est.* Jo. Gottl. Schneider, Lipsiae, 1813. [Dirk J. and Sally R. Struik – MECW]

¹⁶³ Spinoza, *Ethics*, Part I, Prop. 36, Appendix. [Dirk J. and Sally R. Struik – MECW]

¹⁶⁴ A blank tablet or slate. [Translator]

where considers the properties in relation (*Bezug*) to the atom itself, nor does he objectify the inherent contradiction between [its] concept and existence. Rather, his entire interest lies in representing qualities in relation to the concrete nature that will be constituted out of them. To him they are merely hypotheses to explain the apparent plurality. Consequently, the concept of the atom has nothing to do with them.

In order to prove our assertion it is first necessary to understand the authorities that appear to contradict one another.

In the treatise *De placitis philosophorum* we read:

Epicurus asserts that the atoms have three qualities: size, shape, weight. *Democritus* only assumed two: size and shape. *Epicurus* added weight as the third.¹⁶⁵

The same passage is repeated word for word in the *Praeparatio evangelica* of *Eusebius*.¹⁶⁶

It is confirmed by the testimony of *Simplicius*¹⁶⁷ and *Philoponus*,¹⁶⁸ according to whom, *Democritus* only attributed to the atoms differences in size and shape. Directly contrary stands *Aristotle* who, in the first book of *De generationes et corruptiones*, attributes to the atoms of *Democritus* differences in weight.¹⁶⁹ In another passage (in the first book of *De caelo*) *Aristotle* leaves undecided the question as to whether or not *Democritus* ascribed weight to the atoms, for he says:

So none of the bodies will be absolutely light if they all have weight; but if all have lightness, none will be heavy.¹⁷⁰

¹⁶⁵ [Plutarch], *On the Sentiments of the Philosophers* [I, p. 235-6]. *Epicurus* ... affirms that ... bodies are subject to these three accidents, shape, size, and weight. *Democritus* (acknowledged) but two: size and shape. *Epicurus* added the third, to wit, weight, for he pronounced that it is necessary that bodies receive their motion from that impulsion which springs from weight. Comp. *Sextus Empiricus*, *Against the Professors*, p. 420 [X, 240]. [Marx – in Greek]

¹⁶⁶ *Eusebius*, *Preparation for the Gospel*, XIV, p. 749 [141.] [Marx]

¹⁶⁷ *Simplicius*, l.c., p. 362. ...giving (i.e., *Democritus*) them (i.e., the atoms) the difference with regard to size and shape... [Marx – in Greek]

¹⁶⁸ *Philoponus*, ibid. He (*Democritus*) assigns a unique common nature of the body to all shapes; its parts are the atoms, which differ from each other in size and shape; for they have not only different shape but some of them are bigger, the others smaller. [Marx – in Greek]

¹⁶⁹ *Aristotle*, *On Becoming and Decaying*, 1, 8 [326, 10]. ...and yet he [*Democritus*] says 'the more any indivisible exceeds, the heavier it is'. [Marx – in Greek]

¹⁷⁰ *Aristotle*, *On the Heavens*, 1, 7 [276, 1-2, 4-7]. But each piece must, as we assert, have the same motion... So that if it be weight that all possess, no body is, strictly speaking, light; and if lightness he universal, none is heavy. Moreover, whatever possesses weight or lightness will have its place either at one of the extremes or in the middle region. [Marx – in Greek]

In his *Geschichte der alten Philosophie*, Ritter, basing himself on the authority of Aristotle, rejects the assertions of Plutarch, Eusebius and Stobaeus.¹⁷¹ He does not take into consideration the testimony of Simplicius and Philoponus.

We will see whether these passages are actually so contradictory. In the passage cited, Aristotle does not speak of the qualities of the atom *ex professo*.¹⁷² On the other hand, we read in the seventh book of the *Metaphysics*:

Democritus assumes three differences between atoms. Because the underlying body is one and the same with regard to matter, but it differs in *rhysmos*, meaning shape, in *trope*, meaning position, or in *diathige*, meaning arrangement.¹⁷³

This much follows from this passage.¹⁷⁴ Weight is not mentioned as a property of the Democritean atoms. The dispersed pieces of matter, kept apart in the void, must have special forms, and these are wholly externally perceived in the observation of space. This emerges even more clearly from the following passage of Aristotle:

Leucippus and his companion Democritus hold that the elements are the full and the void... . These are the basis of their being as matter; just as those who assume only one fundamental substance generate all other things by its affections, assuming rarity and density as the principles of qualities – in the same way Leucippus and Democritus also teach that the differences between the atoms are the causes of the other things, for the underlying being differs only by *rhysmos*, *diathige* and *trope*... . That is, A differs from N in shape, AN from NA in arrangement, Z from N in position.¹⁷⁵

¹⁷¹ Ritter, *History of Ancient Philosophy*, I, p. 568, Note 2 [2d improved edition, 1836, p. 602, Note 2]. [Marx – title in German]

¹⁷² Professionally, as a man who knows his field of study. [Dirk J. and Sally R. Struik – MECW]

¹⁷³ Aristotle, *Metaphysics*, VII, (VIII), 2 [1042, 11-141. Democritus seems to think there are three kinds of difference between things [atoms]; the underlying body, the matter, is one and the same, but they differ either in rhythm, i.e. shape, or in turning, i.e. position, or in inter-contact, i.e. in order. [Marx – in Greek]

¹⁷⁴ The following sentence was erased by Marx. 'Democritus does not posit the [different] contradiction between the quality of the atom and its concept.' [Dirk J. and Sally R. Struik – MECW]

¹⁷⁵ Ibid. I, 4 [985b, 4-191]. Leucippus and his associate Democritus say that the full and the empty are the elements, calling the one 'being' and the other 'non-being' – the full and solid being 'being', the empty 'non-being' (whence they say 'being' no more is than 'non-being', because the solid no more 'is' than the empty); and they make these the material causes of things. And as those who make the underlying substance one generate all other things by its modifications, supposing the rare and the dense to be the sources of modifications, in the same way these

It follows from this quotation that Democritus only considers the properties of the atom in relation to the formation of the differences in the world of appearances, and not in relation to the atom itself. It follows further that Democritus does not single out weight as an essential property of the atoms. For him, weight is self-evident, because everything corporeal has weight. In the same way, according to him, even size is not a fundamental quality. Size is an accidental determination which is already given to the atoms, together with shape. Only the diversity of the shapes is of interest to Democritus, since nothing more is contained in shape, position, and arrangement. Size, shape (*Gestalt*), and weight, as they are combined – as is evident with Epicurus – are differences [which] the atom has in itself. Shape (*Gestalt*), position, and arrangement are differences that the atom possesses in relation to something else.¹⁷⁶ Whereas in Democritus we find mere hypothetical determinations to explain the world of appearances, in Epicurus the consequence of the principle itself will be presented. Consequently, we shall discuss his determination of the properties of the atom in detail.

First, atoms have size.¹⁷⁷ On the other hand, size is also negated. That is to say, they do not have *every* size;¹⁷⁸ but rather only some differences in size

philosophers say the differences in the elements are the causes of all other qualities. These differences, they say, are three – shape, and order [arrangement], and position. For they say the real is differentiated only by ‘rhythm’ and ‘inter-contact’ and ‘turning’; and of these rhythm is shape, inter-contact is order [arrangement], and turning is position; for A differs from N in shape, AN from NA in order [arrangement], and Z from, N in position. [Marx – in Greek]

¹⁷⁶ It is at this point that Marx appears to use *Gestalt* in two different senses. In the case of Epicurus, ‘shape’ is *intrinsic* to the nature of the atom, while for Democritus ‘shape’ would appear to be *extrinsic* to the atom. This is an evident contradiction, unless, that is, we adopt the Aristotelian standpoint that for Epicurus ‘shape’ is of the *essence* of the atom, while for Democritus ‘shape’ is an *accidental* attribute of the atom. This would be a relevant difference in the usage of the term. Presuming this to be so, Marx cannot be said to have made this difference as clear as he might have done. In light of this presumption I have chosen to render *Gestalt* as ‘shape’ in both cases. I trust that this consistency will not prove too confusing. With regard therefore to any discussion of the quality of ‘shape’, the reader should always bear in mind what has just been stated above. For a discussion of this point see the relevant section of the commentary. [Translator]

¹⁷⁷ Diogenes Laertius X 44. ...atoms have no quality at all except shape, size and weight. ... further, that they are not of any and every size; at any rate no atom has ever been seen by our senses. [Marx – in Greek]

¹⁷⁸ Ibid. X, 56. But to attribute any and every size to the atoms does not help to explain the differences of quality in things; moreover, in that case atoms would exist large enough to be perceived by us, which is never observed to occur; nor can we conceive how such an occurrence should be possible, i.e., that an atom should become visible. [Marx – in Greek]

must be admitted among them.¹⁷⁹ Indeed, only the negation of the large can be ascribed to them, the small,¹⁸⁰ also not the minimum, for this would be merely a spatial determination, but the infinitely small, which expresses the contradiction.¹⁸¹ *Rosinius*, in his notations on the fragments of Epicurus, translates one passage incorrectly and completely ignores the other, when he says:

In this way Epicurus tried to make plausible the tenuity of the atoms of incredible smallness, by saying, according to Laertius, X, 44, that they have no size.¹⁸²

I shall not concern myself now with the fact that, according to *Eusebius*, Epicurus was the first to ascribe infinite smallness to the atoms,¹⁸³ whereas Democritus likewise supposed atoms of the largest size – *Stobaeus* says, even as large as the world.¹⁸⁴

This, on the one hand, contradicts the testimony of *Aristotle*.¹⁸⁵ On the other hand, Eusebius, or rather the Alexandrian bishop *Dionysius*, from whom we takes excerpts, contradicts himself; for in the same book we read that Democritus assumed indivisible bodies perceptible through reason as the principles of nature.¹⁸⁶ This much at least is clear: Democritus did not bring the contradiction to consciousness; he did not pay attention to it, whereas it was the chief interest of Epicurus.

¹⁷⁹ Ibid. X, 55. Again, you should not suppose that the atoms have any and every size ... but *some* differences of size must be admitted. [Marx – in Greek]

¹⁸⁰ Ibid. X, 59. On the analogy of things within our experience we have declared that the atom has size; and this, small as it is, we have merely reproduced on a larger scale. [Marx – in Greek]

¹⁸¹ comp. Ibid. X, 58. *Stobaeus*, *Physical Selections*, I, p. 27 [Marx]

¹⁸² Epicurus, *Fragments (On Nature, II and XI)*, collected by *Rosinius*, ed. By *Orelli*, p. 26. [Marx – quotation in Latin]

¹⁸³ *Eusebius*, *Preparation for the Gospel*, XIV, p. 773 (Paris ed.). But they differed in that one of them (i.e., Epicurus) assumed that all atoms were infinitely small and could therefore not be perceived, while Democritus assumed that some large atoms existed too. [Marx – in Greek]

¹⁸⁴ *Stobaeus*, *Physical Selections*, I, 17. Democritus even says ... that an atom is possible as large as the world. Comp. (Plutarch,) *On the Sentiments of the philosophers*, I, p. 235 11, 31. [Marx – in Greek]

¹⁸⁵ *Aristotle*, *On Becoming and Decaying*, I, 8 1324 , 301. ... invisible ... owing to their minuteness... . [Marx – in Greek]

¹⁸⁶ *Eusebius*, *Preparation for the Gospel*, XIV, p. 749. Democritus ... [assumed] as the principles of the things indivisible ... bodies perceptible through reason... . Comp. (Plutarch,) *On the Sentiments of the Philosophers*, I, p. 235 [31]. [Marx – in Greek]

The *second* property of the Epicurean atoms is *shape*.¹⁸⁷ But this determination also contradicts the concept of the atom, and its opposite must be assumed. Abstract individuality is abstract-self-identity and consequently is without shape.¹⁸⁸ The differences in the shapes of the atoms are therefore undetermined¹⁸⁹ though they are not absolutely infinite.¹⁹⁰ It is rather by a definite and finite number of shapes that the atoms are differentiated from one another.¹⁹¹ From this it is obvious that there are not as many different shapes as there are atoms,¹⁹² while Democritus posits an infinite number of shapes.¹⁹³ If every atom had a particular shape, there would need to be atoms of infinite *size*¹⁹⁴, for they would have an infinite difference – the difference

¹⁸⁷ Diogenes Laertius, X, 54. Moreover, we must hold that the atoms in fact possess none of the qualities belonging to the world which come under our observation, except shape, weight, and size, and the properties necessarily conjoined with shape. Comp. S. 44. [Marx – in Greek]

¹⁸⁸ A *concept* may contain the idea of ‘shape’ as a part of the definition of a ‘thing’, but a concept does not have a shape, which is to say, it is not itself an *image* of a thing existing in *space*. If it were, it would, of necessity, possess some ‘shape’. [Translator]

¹⁸⁹ Ibid. X, 42. Furthermore, the atoms ... vary indefinitely in their shapes. [Marx – in Greek]

¹⁹⁰ Ibid. X, 42. ... but the variety of shapes, though indefinitely larger, is not absolutely infinite. [Marx – in Greek]

¹⁹¹ Lucretius, *On the Nature of Things*, II, 513-514. ... you must acknowledge a corresponding limit to the different forms of matter.

Eusebius, *Preparation for the Gospel*, XIV, p. 749. Epicurus ... [says] ... that the shapes of the atoms themselves are limited, and not infinite... . Comp. (Plutarch) *On the Sentiments of the Philosophers*, I.c. [Marx – in Latin and Greek]

¹⁹² Diogenes Laertius, X, 42. The like atoms of each shape are absolutely infinite. Lucretius, *On the Nature of Things*, II, 525-528. Since the varieties of form are limited, the number of uniform atoms must be unlimited. Otherwise the totality of matter would be finite, which I have proved in my verses is not so. [Marx – in Greek and Latin]

¹⁹³ Aristotle, *On the Heavens*, III, 4 [303, 3-5, 10-15]. There is, further, another view – that of Leucippus and Democritus of Abdera – the implications of which are also unacceptable... . and further, they say that since the atomic bodies differ in shape, and there is an infinity of shapes, there is an infinity of simple bodies. But they have never explained in detail the shapes of the various elements, except so, far as to allot the sphere to fire. Air, water and the rest..., Philoponus, I.c. They have ... not only entirely different shapes... . [Marx – in Greek]

¹⁹⁴ Lucretius, *On the Nature of Things*, II, 474-484, 491-492, 495-497. ...the number of different forms of atoms is finite. If it were not so, some of the atoms would have to be of infinite magnitude. Within the narrow limits of any single particle, there can be only a limited range of forms... .
... if you wish to vary its form still further ... the arrangement will demand still other parts... . Variation in shape goes with increase in size. You cannot believe,

from all the others – in themselves (*an sich*), like the monads of Leibniz. The assertion of Leibniz that no two things are identical would thereby be inverted, for there are infinitely many atoms of the same shape. Manifestly, this again negates the determination of shape, because a shape that is no longer differentiated from another is not [a] shape.¹⁹⁵

Finally,¹⁹⁶ it is highly important that Epicurus makes the *third* quality *weight*,¹⁹⁷ for, in the centre of gravity, matter possesses the ideal individuality which constitutes a principal determination of the atom. Once, therefore, atoms are transplanted into the realm of the idea (*Vorstellung*) they must also have weight.

But weight also directly contradicts the concept of the atom, because weight is the individuality of matter as an ideal point that lies outside of matter. But the atom is itself this individuality, equally the centre of gravity, presented as an individual existence. Weight therefore exists for Epicurus only as *different weight*, and the atoms are themselves *substantial centres of gravity*, like the heavenly bodies. If this is applied to the concrete, then the obvious result is the fact which old *Brucker* finds so astounding,¹⁹⁸ and of which *Lucretius* assures us,¹⁹⁹ namely, that the earth has no centre towards which everything strives, and has no antipodes. Furthermore, weight belongs only to the atom that is differentiated from the other [atoms], [and is] therefore externalised and endowed with properties: so it is clear that where the atoms are not conceived as many in their differentiation from one another, but rather [as many] only in relation to the void, the determination of weight ceases [to be applicable]. The atoms, different as they may be in mass and shape, move with equal

therefore, that the atoms are distinguished by an infinity of forms... . [Marx – in Latin]

¹⁹⁵ Comp. Note 25. [Marx] [*In the manuscript the following passage was deleted*]: ‘Epicurus therefore has here also objectified the contradiction, while Democritus, only considering the material side, does not show in the further determination any consequence of the principle’. [Dirk J. and Sally R. Struik – MECW] If there was only one ‘shape’, this would not be *a* shape – in other words, ‘any particular shape’ – but only ‘shape in general’. If we cannot differentiate between ‘shapes’ then, strictly speaking, we have no ‘shape’ at all; for if everything were the same ‘shape’ it would be impossible to become aware of ‘shape’ as such. We only know ‘colour’ by virtue of difference between *colours*, we only know ‘shape’ by virtue of differences between *shapes*. This is Hegel and the *Science of Logic*, wherein he seeks to demonstrate that a single ‘quality’ would be unknowable, to have a ‘quality’ at all it is necessary to have more than one – or a ‘quantity’ of them – hence, in turn, the category of *quality* necessitates the category of *quantity*. [Translator]

¹⁹⁶ ‘Finally’, added by Marx. [Dirk J. and Sally R. Struik – MECW]

¹⁹⁷ Diogenes Laertius, X, 44 and 54. [Marx]

¹⁹⁸ Brucker, *Institutions of the History of Philosophy* [Latin, 1747], p. 224. [Marx]

¹⁹⁹ Lucretius, *On the Nature of Things*, I, [1051-1052], Memmius, here you must give up fully the belief that all things strive – as they say – to the middle of the world. [Marx – in Latin]

speed in empty space.²⁰⁰ Epicurus applies weight only in regard to repulsion and compositions. This has led to the assertions²⁰¹ that only the conglomerations of the atoms are endowed with weight, but not the atoms themselves.²⁰²

Gassendi already²⁰³ praises Epicurus because, led purely by reason, he anticipated the experimentally demonstrated fact that all bodies, though very different in weight and bulk (*Last*), have the same velocity when they fall from above to below.²⁰⁴

The consideration of the properties of the atoms has delivered the same result as the consideration of the declination, namely, that Epicurus objectifies the contradiction in the concept of the atom between *essence* and *existence*.²⁰⁵ He thus provided us with the science of atomistics. While, in Democritus there is no realisation of the principle itself to be found. He holds only to the material side and introduces hypotheses [merely] for the benefit of empirical observation.

²⁰⁰ Diogenes Laertius, X, 43. The atoms move with equal speed, since the void makes way for the lightest and heaviest alike through all eternity... . 61. When they are travelling through the void and meet with no resistance, the atoms must move with equal speed. Neither will heavy atoms travel more quickly than small and light ones, so long as nothing meets them, nor will small atoms travel more quickly than large ones, provided they always find a passage suitable to their size; and provided that they meet with no obstruction.

Lucretius, *On the Nature of Things*, II, 235-239. But empty space can offer no resistance to any object in any quarter at any time, so as not to yield free passage as its own nature demands. Therefore, through undisturbed vacuum all bodies must travel at equal speed though impelled by unequal weights. [Marx – in Greek and Latin]

²⁰¹ Marx erased the words: 'that they can be considered as a cause of it and'. [Dirk J. and Sally R. Struik – MECW]

²⁰² Comp. Ch. 3. [Marx]

²⁰³ 'Already', added by Marx. [Dirk J. and Sally R. Struik – MECW]

²⁰⁴ Feuerbach, *History of the Newer Philosophy*. [1833, quote from] Gassendi, 1. c., XXXIII, No. 7. Though Epicurus had perhaps never thought about this experiment, he [still] reached, led by reason, the same opinion about atoms that experiment has recently taught us. This opinion is that all bodies ... though very different in weight and bulk, have the same velocity when they fall from above to below. Thus he was of opinion that all atoms, however much they may differ in size and weight, move with an equal velocity. [Marx – in Latin] [*In the manuscript the following passage was deleted:*] 'We have added to this praise the explanation of the principle of Epicurus'. [Dirk J. and Sally R. Struik – MECW]. Marx is again rushing here, because he has used two words with almost the same meaning: *Gewicht* which means 'weight' and *Last* which can also mean 'weight' or 'burden'. I take it that the difference between them relates to the passage above where 'weight' is complemented by the term 'bulk', and that Marx did not want to cause confusion by using *Umfang* (girth, circumference, bulk) or *Masse* (mass, substance, bulk). For this reason I have adopted 'bulk' as the translation. [Translator]

²⁰⁵ Translator's emphasis.

CHAPTER THREE

*ATOMOI ARCHAI*²⁰⁶ AND *ATOMA STOICHEIA*²⁰⁷

Schaubach asserts, in his previously mentioned treatise on the astronomical concepts of Epicurus, that:

Epicurus, as well as *Aristotle*, made a distinction between *principles* (*Anfänge*)²⁰⁸ (*atomoi archai*, Diogenes Laertius, X, 41) and *elements* (*Elementen*)²⁰⁹ (*atoma stoicheia*, Diogenes Laertius, X, 86). The former are the atoms recognisable only through reason and do not occupy space.²¹⁰ These are called atoms not because they are the smallest bodies, but because they are indivisible in space. According to these conceptions one might think that Epicurus did not attribute any spatial properties to the atom.²¹¹ But in the letter to Herodotus (Diogenes Laertius, X, 44, 54) he gives the atoms not only weight but also size and shape... I therefore count these atoms as belonging to the second species; those that have developed out of the former but can still be regarded as elementary particles of bodies.²¹²

Let us consider the passage that *Schaubach* cites from Diogenes Laertius. It reads: *For instance, such propositions that the All consists of bodies and non-corporeal nature, or that there are indivisible elements and other such statements.*²¹³

Epicurus here teaches Pythocles, to whom he is writing, that the teaching about meteors differs from all other doctrines in physics, for example, that everything is either body or void, that there are indivisible basic elements. It is obvious that there is here no reason to presume a second species of atoms is under discussion.²¹⁴ It may perhaps seem that the disjunction between ‘The

²⁰⁶ ‘indivisible principles’. [Translator]

²⁰⁷ ‘indivisible elements’. [Translator]

²⁰⁸ Literally: ‘origins’ or ‘beginnings’. [Translator]

²⁰⁹ Those things upon which principles (*arche* – *anfänge*) operate. [Translator]

²¹⁰ *Ametocha kenou* [Stobaeus, *Physical Selections*, I, p. 306] does not at all mean ‘do not fill *space*’, but rather ‘have no part of the void’, it is the same as what at another place *Diogenes Laertius* says: ‘though they are without distinction of parts’. In the same way we must explain this expression in (Plutarch,) *On the Sentiments of the Philosophers*, I, p. 236, and Simplicius, p. 405. [Marx – in Greek and German]

²¹¹ This also is a false conclusion. That which cannot be divided in space is not, in consequence, outside of space and without spatial relation. [Marx – in German]

²¹² *Schaubach*, l.c., [p]p. [549-]550. [Marx]

²¹³ Quoted by Marx in Greek.

²¹⁴ *Diogenes Laertius*, X, 44. [Marx] Here Marx erased the sentence: ‘We can equally conclude (justly or unjustly) from the passage ‘for this there is no

All consisting of bodies and non-corporeal bodies' and 'that there are indivisible elements'²¹⁵ posits a difference between *soma*²¹⁶ and *atoma stoicheia*, so that we might say that *soma* imply atoms of the first kind in contrast to the *atoma stoicheia*. But this is quite unthinkable. *Soma* means the *corporeal* in contrast to the *void*, which, for this reason, is called *asomaton*'.²¹⁷ In the term *soma* there are included atoms as well as compound bodies. So, for example, in the letter to Herodotus we read:

The All is body ... if there were not that which we call void, space and non-corporeal nature... . Among bodies some are compound, others the things out of which the compounds are made, and *these* latter are indivisible and unchangeable... . Consequently these first principles are necessarily of indivisible corporeal nature.²¹⁸

Epicurus is speaking, in the passage cited first, of the *corporeal* in general, in contrast to the *void*, and then of the corporeal in particular, the atoms.²¹⁹

Schaubach's reference to Aristotle proves just as little. The difference between *arche* and *stoicheion*,²²⁰ upon which the Stoics, by preference, insist,²²¹ can certainly also be found in Aristotle,²²² but *Schaubach* nonetheless assumes the identity of the two expressions.²²³ *Schaubach* even explicitly teaches that *stoicheion* denotes preferentially the atom.²²⁴ Leucippus and Democritus likewise call *stoicheion*: the *fullness and void*.²²⁵

beginning, the atoms being the cause', that Epicurus has assumed a *third* kind, the *atoma aitia* [atoms as cause]'. [Dirk J. and Sally R. Struik – MECW]

²¹⁵ The two translations from the Greek give by Dirk J. and Sally R. Struik in a footnote in the MECW translation.

²¹⁶ Body, matter. [Dirk J. and Sally R. Struik – MECW]

²¹⁷ Ibid. X, 67. But it is impossible to conceive anything that is incorporeal as self-existent, except empty *space*. [Marx – in Greek]. Non-corporeal, immaterial. [Dirk J. and Sally R. Struik – MECW]

²¹⁸ Ibid. X, 39, 40 and 41. [Marx]

²¹⁹ [In the manuscript the following passage was deleted:] '*Atoma stoicheia* here has no other meaning than *atomoi physeis* [indivisible natures], of which it is said in the last quoted passage that they are *archai* [beginning, first principles]'. [Dirk J. and Sally R. Struik – MECW]

²²⁰ 'Beginning (first principle)' and 'element'. [Dirk J. and Sally R. Struik – MECW]

²²¹ Ibid. VII, [Ch.] 1 [134]. There is a difference, according to them (i.e., the Stoics), between principles and elements; the former being without generation or destruction, whereas the elements are destroyed when all things are resolved into fire. [Marx – in Greek]

²²² Aristotle, *Metaphysics*, IV, 1 and 3. [Marx]

²²³ Comp. 1. c. [Marx]

²²⁴ Ibid. 1. c. 3 [1014 31-34; 1014, 5-6]. Similarly those who speak of the elements of bodies mean the things into which bodies are ultimately divided, while they are no longer divided into other things differing in kind; ... for which reason what is small and simple and indivisible is called an element. [Marx – in Greek]

²²⁵ Ibid. I, 4. [Marx]

In Lucretius, in Epicurus' letters as quoted by Diogenes Laertius, in the *Colotes* of Plutarch,²²⁶ in Sextus Empiricus,²²⁷ properties are ascribed to atoms themselves, and for this reason they were even determined as self-transcending (*sich selbst aufhebend*).

However, if it is thought [to be] an antinomy that bodies, perceptible only by reason (*Vernunft*), should be endowed with spatial qualities, then it is an even greater antinomy that the spatial qualities themselves can only be perceived through the understanding (*Verstand*).²²⁸

Finally, *Schaubach*, in further support of his view, cites the following passage from Stobaeus: 'Epicurus [states] that the primary (bodies) should be simple, those bodies compounded from them, however, should have weight.'²²⁹ To this passage from Stobaeus could be added the following, in which *atoma stoicheia* are mentioned as a particular kind of atom: (Plutarch), *De placit. philosoph.*, I, 246 and 249, and Stob., *Physical Selections*, I, p. 5.²³⁰ For the rest, it is by no means claimed in these passages that the original atoms are without size, shape, and weight. On the contrary, weight alone is mentioned as a distinctive characteristic of the *atomoi archai* and *atoma stoicheia*. We observed already in the preceding chapter that weight is applied only in regard to repulsion and the conglomerations arising therefrom.

With the invention of the *atoma stoicheia* we also gain nothing. It is just as difficult to pass from the *atomoi archai* to the *atoma stoicheia* as it is to ascribe properties directly to [each of] them. Nevertheless, I do not deny such a differentiation entirely. I only deny that there are two different and fixed kinds of atoms. They are rather different determinations of one and the same kind.

²²⁶ Diogenes Laertius, X, 54.

Plutarch, *Reply to Colotes*, p. 1110. ... that this view is as inseparable from Epicurus' theories as shape and weight are by their (i.e., the Epicureans) own assertion inseparable from the atom. [Marx – in Greek]

²²⁷ Sextus Empiricus, *Against the Professors*, p. 420. [Marx]

²²⁸ Eusebius, *Preparation for the Gospel*, XIV, p. 773. ... Epicurus ... [assumed that] they [i.e., the atoms] cannot be perceived... P. 749. ... but they [i.e., the atoms] have their own shape perceivable by reason. [Marx – in Greek]

²²⁹ Quoted by Marx in Greek.

²³⁰ (Plutarch,) *On the Sentiments of the Philosophers*, I, p. 246 [71] The same (Epicurus) asserts that there are four other natural beings which are immortal – of this sort are atoms, the vacuum, the infinite and the similar parts; and these last are – [called] homoeomerias and likewise elements. 12. Epicurus [thinks that] bodies are not to be limited, but the first bodies are simple bodies, and all those composed of them possess weight...

Stobaeus, *Physical Selections*, I, p. 52. Metrodorus, the teacher of Epicurus, [says] ... that the causes, however, are the atoms and elements. On p.5. Epicurus [assumes] ... four substances essentially indestructible: the atoms, the void, the infinite and the similar parts, and these are called homoeomerias and elements. [Marx – in Greek]

Before setting out this difference, I should like to call attention to a procedure typical of Epicurus. He likes to assume the different determinations of a concept to be different independent existences. Just as his principle is the atom, so is the manner of his cognition itself atomistic. In his hands, every moment of the development is at once transformed into a fixed actuality that, as it were, is separated from its relations to other things by empty space; every determination takes the form of isolated individuality.

In the following example this procedure will become clear.

The infinite, *to apeiron*, or the *infinitio*, as Cicero translates it, is occasionally used by Epicurus as a particular nature; and assuredly, in the same passages in which we find the *stoicheia* described as a fixed fundamental substance, we also find the *apeiron* turned into something independent.²³¹

Now, however, according to Epicurus' own definitions, the infinite is neither a particular substance nor something outside of the atoms and the void, but rather an accidental determination of the void. In fact, we find three meanings of *apeiron*.

First, *apeiron* expresses for Epicurus a quality common to the atoms and the void. In this sense, it signifies the infinitude of the All, which is infinite by virtue of the infinite multiplicity of the atoms, as a consequence of the infinite greatness of the void.²³²

Second, *apeiria* is the multiplicity of the atoms, so that not the atom but the infinitely many atoms are placed in opposition to the void.²³³

Finally, if we may draw from Democritus a conclusion about Epicurus, *apeiron* also means exactly the opposite, the unbounded void, which is placed in opposition to the atoms determined in it and bounded by it.²³⁴

In all these meanings – and they are the only ones, even the only possible ones for atomistics – the infinite is a mere determination of atoms and the void. Even so, it is singled out as a particular existence, [and] even set up as a specific nature alongside the principles whose determination it expresses.²³⁵

Even if Epicurus himself fixed the determination by which the atom becomes *stoicheion* as an independent, original kind of atom, what are we

²³¹ Comp. 1. c.

Cicero, *On the Highest Goods and Evils*, I, 6. ...that which he follows the atoms, the void ... infinity itself, that they [i.e., the Epicureans] call *apeiria*. [Marx]

²³² Diogenes Laertius, X, 41. Again, the sum of things is infinite... Moreover, the sum of things is unlimited both by reason of the multitude of the atoms and the tent of the void. [Marx – in Greek]

²³³ Plutarch, *Reply to Colotes*, p. 1114. Now look at the sort of first principles [you people adopt] to account for generation: infinity and the void – the void incapable of action, incapable of being acted upon, bodiless; the infinite disordered, irrational – incapable of formulation, disrupting and confounding itself because of a multiplicity that defies control or limitation. [Marx – in Greek]

²³⁴ Simplicius, 1.c., p. 488. [Marx]

²³⁵ [In the manuscript the following passage was deleted]: 'This example is convincing'. [Dirk J. and Sally R. Struik – MECW]

minded to conclude, given the historical superiority of one source over the other – only that this is not the case. Or are we to allow ourselves to think – as seems more probable – that Metrodorus,²³⁶ the disciple of Epicurus, was the first to change the differentiated determinations into a differentiated existence?²³⁷ [Rather], we must ascribe the independence of [these] separate moments to the subjective mood (*Weise*) of atomistic consciousness. But by bestows different determinations of form on different existences, one does not gained thereby an understanding of their differences.²³⁸

For Democritus the atom only had the significance of a *stoicheion*, a material substrate. The distinction between the atom as *arche* and *stoicheion*, as principle and foundation, belongs to Epicurus. Its importance will be illuminated by what follows.

The contradiction between *existence* and *essence*, between *matter* and *form*, which is inherent in the concept of the atom, emerges in the individual atom itself once it is endowed with qualities.²³⁹ Through quality, the atom is estranged from its concept, but, at the same time, [it] is perfected in its construction. Out of repulsion and its associated coherent conglomerations – the atoms [endowed with] qualities – the world now appears.

By this transition from the world of essence to the world of appearance, the contradiction in the concept of the atom reaches its clearest and most glaring actualisation. For the atom, according to its concept, is the absolute, essential form of nature. *This absolute form has now been degraded to absolute matter, to the formless substrate of the world of appearance.*

The atoms are certainly the substance of nature²⁴⁰ out of which everything arises, [and] into which everything dissolves;²⁴¹ but the constant annihilation

²³⁶ This is not Metrodorus of Lampsacus, the disciple of Epicurus, but Metrodorus of Chios, the disciple of Democritus, named incorrectly by Stobaeus (in the author's note) as the teacher of Epicurus. The same lines may be found in the fifth notebook on Epicurean philosophy (see MECW volume 1, pp. 96 and 486). [Dirk J. and Sally R. Struik – MECW]

²³⁷ (Plutarch,) *On the Sentiments of the Philosophers*, p. 239 [I, 5]. But Metrodorus says ... that the number of worlds is infinite, and this can be seen from the fact that the number of causes is infinite... . But the causes are the atoms or the elements.

Stobaeus, *physical Selections*, I, p. 52. Metrodorus, the teacher of Epicurus, [says] ... that the causes, however, are the atoms and elements. [Marx – in Greek]

²³⁸ This paragraph was badly written by Marx and displays his usual rather compressed manner of composition. It requires a degree of transliteration to render it intelligible. [Translator]

²³⁹ Translator's emphasis.

²⁴⁰ Lucretius, *On the Nature of Things*, 1, 820-821. For the same elements compose sky, sea and lands, rivers and sun, crops, trees and animals... .

Diogenes Laertius, X, 39. Moreover, the sum total of things was always such as it is now, and such it will ever remain. For there is nothing into which it can change. For outside the sum of things there is nothing which could enter into it and bring about the change... . The whole of being consists of bodies... . 41.

of the world of appearance comes to no result. The world builds new appearances; though the atom itself always lies as [its] residual foundation.²⁴² So far as the atom is conceived in accordance with its pure concept, its existence is empty space, annihilated nature; so far as it progresses to actuality, it sinks down to a material basis, which [base], as the bearer of a world of manifold relations, never existing but in forms that are indifferent and external to the atom. This is a necessary consequence, because the atom, supposed as abstractly individual and completeness, cannot manifest itself as the idealised and pervasive power of this manifold.

Abstract individuality is freedom *from* existence (*Dasein*) not freedom *in* existence (*Dasein*).²⁴³ It cannot shine in the light of existence (*Dasein*). This is an element in which this individuality loses its character and becomes material. Consequently, the atom does not enter into the daylight of appearances²⁴⁴ or, when it does enter [into] appearances, it sinks down to the material basis. The atom, as such, only exists in the void. The death of nature has thus become its immortal substance; and rightly Lucretius exclaims:

When death immortal claims his mortal life.²⁴⁵

But the fact that Epicurus grasps the contradiction at this its highest point, and objectifies it and, where it becomes the basis of appearance, differentiates the atom as *stoicheion* from the atom as *arche* as it exists in the void; this constitutes his philosophical difference from Democritus, who only objectivises the one moment. This is the same distinction which, in the world of

These elements are indivisible and unchangeable, and necessarily so, if things are not all to be destroyed and pass into non-existence, but are to be strong enough to endure when the composite bodies are broken up, because they possess a solid nature and are incapable of being anywhere or anyhow dissolved. [Marx – in Latin and Greek]

²⁴¹ Diogenes Laertius, X, 73. ... and all things are again dissolved, some faster, some slower, some through the action of one set of causes, others through the action of others. 74. It is clear, then, that he [Epicurus] also makes the worlds perishable, as their parts are subject to change.

Lucretius, V, 109-1 10. May reason rather than the event itself convince you that the whole world can collapse with one ear-splitting crack!

Ibid. V, 373-375. it follows, then, that the doorway of death is not barred to sky and sun and earth and the sea's unfathomed floods. It lies tremendously open and confronts them with a yawning chasm. [Marx – in Greek and Latin]

²⁴² Simplicius, I.c., p. 425. [Marx]

²⁴³ Translator's emphasis. This is an Hegelian point and one of great significance for Marx. Bourgeois individuality is 'abstract individuality', an individuality that is set against, and opposed to, society. Proletarian individuality is 'concrete individuality', an individuality that is inextricably bound up with life in a society.

²⁴⁴ Lucretius, II, 796. ...and the atoms do not emerge into the light... . [Marx – in Latin]

²⁴⁵ *De verum nature* III, 869. [Dirk J. and Sally R. Struik – MECW]

essence, in the realm of atoms and the void, separates Epicurus from Democritus. However, because only the atom possessed of qualities is the complete one, [and] because the world of appearance can only come forth from the atom that is complete and estranged from its concept, Epicurus expresses this by stating that only the atom with qualities becomes *stoicheion* or that only the *atomon stoicheion* is endowed with qualities.

CHAPTER FOUR

TIME

Because, in the atom, matter, as pure relation to itself, is relieved of all relativity and changeability, it follows immediately that time is shut out from the concept of the atom, the world of essence. For matter is now eternal and independent in so far as, in it, abstraction is made from the temporal moment. In this regard Democritus and Epicurus agree. But they differ with regard to the manner in which time, removed from the world of atoms, is now determined, whither it is transferred.

For Democritus, time has neither significance nor necessity for the system. He explains time in order to transcend it (*aufzuheben*). It is determined as eternal, in order that, as Aristotle²⁴⁶ and Simplicius²⁴⁷ state, the arising and passing away, that is, the temporal, is removed from the atoms. In itself, time offers proof that not everything need have an origin, a moment of beginning.

There is here a deeper significance. The imagining intellect (*Verstand*) that does not grasp the independence of substance, enquires as to its becoming in time. The imagining intellect opposes to substance [the idea] that substance is temporal, thereby making time [something] substantial and so goes beyond (*aufheben*) its concept, because time made absolute is no longer temporal.

However, this solution is unsatisfactory. Time, excluded from the world of essence, is relocated into the self-consciousness of the philosophising subject, but [then] time is not contiguous with the world itself.

It is otherwise with Epicurus. Excluded from the world of essence, for him time becomes *the absolute form of appearance*. Time is determined as *accidens* of the accidents. The accident is the change of substance in general. The accident of the accident is this change reflected in[to] itself, the change as change. This pure form of the world of appearance is now time.²⁴⁸

²⁴⁶ Aristotle, *Physics*, VIII, 1 [251, 15-17]. ...in fact, it is just this that enables Democritus to show that all things cannot have had a becoming; for time, he says, is uncreated. [Marx – in Greek]

²⁴⁷ Simplicius, l.c., p. 426. Democritus was so strongly convinced that time is eternal, that, in order to show that not all things have an origin, he considered it evident that time has no origin. [Marx – in Greek]

²⁴⁸ Lucretius, I, 459, 462-463. Similarly, time by itself does not exist... . It must not be claimed that anyone can sense time by itself apart from the movement of things or their restful immobility.

Ibid. I, 479-482. So you may see that events cannot be said to be by themselves like matter or in the same sense as space. Rather, you should describe them as accidents of matter, or of the place in which things happen.

Sextus Empiricus, *Against the Professors*, p. 420. Here Epicurus calls time accident of accidents (*symptoma symptomaton*).

Stobaeus, *Physical Selections*, I, 8. Epicurus [calls time] an accident, i.e., something that accompanies motions. [Marx – in Latin and Greek]

Compounding is the mere passive form of concrete nature; 'time' is its active (*actuose*) form. If I consider [the nature of] compounding according to its determinate being, then the atom exists beyond it, in the void, in the imagination. If I consider the atom according to its concept, then compounding either does not exist or exists only in the subjective imagination, because compounding is a relation in which the independent, self-enclosed atoms, uninterested in one another, have no relation to each other. 'Time', in contrast – the change of the finite to the extent that change is posited as change – is just as much the actual form that separates appearance from essence, and establishes it as appearance, while leading it back into essence. Compounding expresses merely the materiality of the atoms [and] the nature emerging out of them [when compounded]. 'Time', in contrast, is, in the world of appearances, what the concept of the atom is in the world of essence, namely, the abstraction, destruction, and reduction of all particular beings (*Daseins*) [back] into being-for-self.

From these observations the following consequences can be drawn. *First*, Epicurus makes the contradiction between matter and form the characteristic of the nature of appearance, which, consequently, becomes the counter-image to the nature of essence, the atom. This occurs when 'time' is opposed to 'space', [that is, when] the active form of appearance [is opposed] to the passive form. *Second*, Epicurus was the first to grasp appearance as appearance, that is, as estrangement (*Entfremdung*) from the essence which manifests (*betätigt*) itself in its actualisation as such [as] estrangement. With Democritus, who considers compounding to be the sole form of the nature of appearance, appearance does not exhibit, in its own self, that appearance is different from essence. When appearance is viewed as existence, essence becomes wholly confounded (*confundirt*) with appearance; when viewed as a concept, essence is wholly separated from appearance, so that appearance sinks to [a] subjective semblance. The compounded relates indifferently, and materially, to its essential foundations. Time, on the other hand, is the fire of essence, eternally consuming appearance, and stamping it with dependency and loss of essence. *Finally*, because, according to Epicurus, time is change as change, the reflection of appearance in itself, the nature of appearance is rightly posited as objective, [and] sense perception is rightly made the real criterion of concrete nature, [even] though the atom, its foundation, is only comprehend through reason.²⁴⁹

Because, according to the atomism of Epicurean consciousness, 'time' is the abstract form of sensuous perception, the necessity arises for it [time] to be fixed as a separately existing nature, within nature. The changeability of

²⁴⁹ This whole argument is Hegelian in nature, and, no doubt, from the point of view of the ordinary reader, meaningless mumbo jumbo. I shall, however, seek to explicate its in the commentary which follows because what Marx is saying is of fundamental significance for his later view of the nature of man and, particularly, for his view of human knowledge and man's interaction with the world.

the sensuous world, now [understood] as changeability – the world's change as change, this reflection of appearance into itself, which constitutes the concept of 'time' – has its separate existence in conscious sensuousness. *Human sensuousness is therefore embodied time, the existent reflection of the sensuous world into itself.*²⁵⁰

As this follows immediately from the definition of the concept of 'time' in Epicurus, it consequently permits of an exact proof in the particular. In the letter from Epicurus to Herodotus²⁵¹, 'time' is so defined that it emerges when the sensuously perceived accidents of bodies are thought of as accidentals. Consequently, sensuous perception, reflected into itself, is here the source of 'time' [as a concept] and [of] time itself. Hence, time cannot be defined by analogy, nor can anything else be said about it, but rather [we must] hold fast to the vitality (*Enargie*) itself; for sensuous perception, reflected in[to] itself, is time itself, and there is no going beyond it.

²⁵⁰ This may appear contrary to Kant, for whom 'time' is one of two *a priori* forms of sensory intuition – the other being 'space', but the parallel is close. For Marx, 'time' is *change* in the *sensuous world*. Our *awareness* of 'time' may exist *subjectively* in our conscious but it does so because 'time' is, itself, 'change', and, moreover, 'change' thought of as 'change'. When we think of 'change' itself – as opposed to what *changes* – then 'change' becomes 'time'. Kant held that, ultimately, our understanding of 'time' derives from our inner *subjective* sense of *duration*, and that it is this sense of *duration* which, as 'time', we ascribe to the world whenever we encounters *change*. Marx is close to Kant: for Marx, *time* is synonymous with *change* where 'change' is understood not individually, as an *event*, but universally, as a *process*. The *sensuous world* constantly *changes*, and it is this *constant* change which is reflected back into our *sensuous awareness*. *Human sensuousness* is, therefore, the source of our certainty of 'time' as *objective* 'in the world' and not merely as *subjective* 'in our perception of the world'. See the commentary following.

²⁵¹ Diogenes Laertius, X, 72. There is another thing which we must consider carefully. We must not investigate time as we do the other accidents which we investigate in a subject, namely, by referring them to the preconceptions envisaged in our minds; but we must take into account the plain fact itself, in virtue of which we speak of time as long or short, linking to it in intimate connection this attribute of duration. We need not adopt any fresh terms as preferable, but should employ the usual expression about it. Nor need we predicate anything else of time, as if this something else contained the same essence as is contained in the proper meaning of the word 'time' (for this also is done by some). We must chiefly reflect upon that to which we attach this peculiar character of time, and by which we measure it. 73. No further proof is required: we have only to reflect that we attach the attribute of time to days and nights and their parts, and likewise to feelings of pleasure and pain and to neutral states, to states of movement and states of rest, conceiving a peculiar accident of these to be this very characteristic which we express by the word 'time'. He [i.e., Epicurus] says this both in the second book *On Nature* and in the *Larger Epitome*. [Marx – in Greek]

In contrast, in *Lucretius*, *Sextus Empiricus* and *Stobaeus*,²⁵² the accidents of the accidents, change reflected into itself, is defined as 'time'. Hence, the reflection of the accidentals into sensuous perception and their reflection into themselves are posited as one and the same.

Because of this interdependency between time and sensuousness, the *eidola* (images), which we even find in Democritus, acquire a more consistent status.

The *eidola*²⁵³ are the forms of natural bodies, which, as an over skin, as it were, detach themselves and are carried into appearance.²⁵⁴ These forms of things stream constantly forth from them and penetrate into the senses, and even, thereby, allow the objects to appear. Thus in hearing, nature hears itself, in smelling nature smells itself, in seeing nature sees itself.²⁵⁵ Human

²⁵² Lucretius, *On the Nature of Things*, l.c.

Sextus Empiricus, *Against the Professors*, p. 420 [X, 238, 240, 241, '2441. ... accident of accidents... . For this reason Epicurus compels us to think that an existing body consists of non-existing bodies, since he says that we have to think of the body as a composition of size and shape, resistance and weight... . Hence there must be accidents for time to exist, but for accidents to be present themselves there must be an underlying circumstance. However, if no underlying circumstance exists, then there can be no time... . When this therefore is time, and Epicurus says that accidents are the nature [of time], then time, according to Epicurus, must be its own accident. Comp. Stobaeus, l.c. [Marx – in Greek]

²⁵³ Images. [Dirk J. and Sally R. Struik – MECW]

²⁵⁴ Diogenes Laertius, X, 46. Again, there are outlines or films, which are of the same shape as solid bodies, but of a thinness far exceeding that of any object that we see... . To these films we give the name of 'images' or 'idols'. 48. ... the production of the images is as quick as thought ... though no diminution of the bodies is observed, because other particles take their place. And those given off retain the position and arrangement which their atoms had when they formed part of the solid bodies... .

Lucretius, IV, 30-32... 'images' of things, a sort of outer skin perpetually peeled off the surface of objects and flying about this way and that through the air.

Ibid. IV, 51-52. ... because each particular floating image wears the aspect and form of the object from whose body it has emanated. [Marx – in Greek and Latin]

²⁵⁵ Diogenes Laertius, X, 49. We must also consider that it is by the entrance of something coming from external objects that we see their shapes and think of them. For external things would not stamp on us their own nature ... so well as by the entrance into our eyes or minds, to whichever their size is suitable, of certain films coming from the things themselves, these films or outlines being of the same colour and shape as the external things themselves... . 50. And this again explains why they present the appearance of a single continuous object and retain the mutual interconnection which they had with the object... . 52. Again, hearing takes place when a current passes from the object, whether person or thing, which emits voice or sound or noise, or produces the sensation of hearing in any way whatever. This current is broken up into homogeneous particles, which at the same time preserve a certain mutual connection... . 53. ... Again, we must believe that smelling, like hearing, would produce no sensation, were there not particles

sensuousness is therefore the medium, as a focal point (*Focus*), into which natural processes are reflected and kindled into the light of appearance.

With *Democritus*, this is an inconsistency because appearance is only subjective; in Epicurus it is a necessary consequence, because sensuousness, as the reflection of the world of appearance in itself, is 'embodied time'.²⁵⁶

Finally, the interdependency between sensuousness and time is revealed in such a way *that the temporal character of things and their appearance to the senses are intrinsically posited as One*. For, it is precisely because bodies appear to the senses that they pass away.²⁵⁷ Indeed, the *eidola*, by constantly separating themselves from the bodies, and flowing into the senses, by having their sensuous existence outside of themselves as another nature, [and] by not returning into themselves out of this diremption, dissolve themselves and pass away.

*Consequently: [just] as the atom is nothing other than the natural form of the abstract, individual self-consciousness, so [too] sensuous nature is only the objectified, empirical, individual self-consciousness, and this is the sensuous. The senses are therefore the only criteria in concrete nature, [just] as abstract reason is the only criterion in the world of atoms.*²⁵⁸

conveyed from the object which are of the proper sort for exciting the organ of smelling. [Marx – in Greek]

²⁵⁶ By this means Marx is able to distinguish between the *sensuous subjectivism* of Democritus and the *sensuous objectivism* of Epicurus. A foretaste, perhaps, of Marx's later *sensuous practice* as a means of uniting theory with material reality.

²⁵⁷ Lucretius, *On the Nature of Things*, II, 1145-1146. It is natural, therefore, that everything should perish when it is thinned out... [Marx – in Latin]

²⁵⁸ Marx has now established a clear distinction in terms of Epicurus's philosophy between the atom as an *idea* and the atom as *matter*, or between the atom as Form – *Arche* – and the atom as an Element – *Stoicheion*. Marx's wider task is to bridge the 'gap' between *theory* and *reality*, or between *theory* and *human action*.

CHAPTER FIVE

THE METEORS

As penetrating as *Democritus's* astronomical opinions may be for his [theory] of 'time', there is nothing of philosophical interest to be derived. They go no further than the circle of empirical reflection, [nor] have they a more definite intrinsic connection with the atomic doctrine.

In contrast, *Epicurus's* theory of the celestial bodies and the processes connected with them, or his theory of meteors (in which expression he embraces all of this), stands in opposition not only to the opinion of Democritus but to the opinion of Greek philosophy as a whole. Worship of the celestial bodies is a cult, celebrated by all Greek philosophers. The system of the celestial bodies is the first naïve and nature-determined existence of actual reason (*Vernunft*). The same position is taken by Greek self-consciousness in the realm of the mind (*Geist*). It is the solar system of the mind, Greek philosophers worshipped their own mind in the celestial bodies.

Anaxagoras, who first gave a physical explanation of the heaven and in this way brought it down to earth in a sense different from that of Socrates, answered, when asked for what purpose he was born: *For the observation of the sun, the moon and the heaven.*²⁵⁹ *Xenophanes*, however, looked up at heaven and said: The One is God.²⁶⁰ The religious attitude of the *Pythagoreans*, *Plato* and *Aristotle* to the heavenly-bodies is well known.

Indeed, Epicurus opposes the outlook of the whole Greek people.

As *Aristotle* says:

At times, it often appears that the concept provides evidence for the phenomena and the phenomena for the concept. So all men have an idea of the gods and assign the highest region to the divine, barbarians as well as Hellenes, and, in general, all who believe in the existence of the gods manifestly connect the immortal to the immortal, because otherwise it is impossible. So, if the divine exists – as it actually does – then what we maintain about the substance of the celestial bodies is also correct. But this also corresponds to sensuous perception in so far as human conviction is concerned. For throughout the time that has passed, according to the memories handed down from people to people, nothing seems to have changed, either in heaven as a whole, or in any part of it. Even the name seems to have been handed down from the ancients to the present time, and they assumed that which we also say. For not once, not twice, but an infinite number of times have the same views come down to us. For since the primary body is something different, apart from the earth and the fire and the air and the water,

²⁵⁹ Diogenes Laertius, 11, 3, 10. b [Marx – quoted in Greek]]

²⁶⁰ Aristotle, *Metaphysics*, I, 5 [986, 25]. The One is God. [Marx – in Greek]

they called the highest region 'ether', from *thein aei*²⁶¹, giving it the by-name: eternal time.²⁶²

But the ancients assigned heaven and the highest region to the gods, because it alone is immortal. But the present teaching testifies that it is indestructible, ingenerated and not subject to any mortal ills. In this way our concepts correspond, at the same time, to intimations about God.²⁶³

But that there is one heaven is evident. It is a tradition handed down from our ancestors and the ancients, and surviving in the form of the myths of later generations, that the heavenly bodies are gods and that the divine encompasses all nature. The rest was added in mythical form for the belief of the masses, as useful for the laws and for life. Thus the myths make the gods resemble man and some of the other living creatures, and invent similar things connected with and related to this. If we discard the additions and hold fast only to the first, namely, the belief that the primary substances are gods, then we must consider this as having been divinely revealed, and we must hold that, after all sorts of art and philosophy had, in one way or another, been invented and lost again, these opinions came down to us like relics.²⁶⁴

²⁶¹ To run always. [Dirk J. and Sally R. Struik – MECW]

²⁶² Aristotle, *On the Heavens*, 1, 3 [270b, 4-24]. Our theory seems to confirm experience and to be confirmed by it. For all men have some conception of the nature of gods, and all who believe in the existence of gods at all, whether barbarian or Greek, agree in allotting the highest place to the deity, surely because they suppose that immortal is linked with immortal and regard any other supposition as inconceivable. If then there is, as there certainly is, anything divine, what we have just said about the primary bodily substance was well said. The mere least of human evidence of the senses is enough to convince us of this as certainty. For, in the whole range of time past, so far as our inherited records reach, no change appears to have taken place either in the whole scheme of the outermost heaven or in any of its proper parts. The common name, too, which has been handed down from our distant ancestors, even to our own day, seems to show that they conceived of it in the fashion which we have been expressing. The same ideas, one must believe, recur to men's minds not once or twice but again and again. And so, implying that the primary body is something else beyond earth, fire, air and water, they gave to the highest place a name of its own, *aither*, derived from the fact that it 'runs always' for an eternity of time. [Marx – in Greek]

²⁶³ Ibid. II, 1 [284a, 11-15, 284, 2-5]. The ancients gave the Gods the heaven or upper place., 'as being alone immortal; and our present argument testifies that it is indestructible and ingenerated. Further, it is unaffected by any mortal discomfort ... it is not only more appropriate so to conceive of its eternity, but also on this hypothesis alone are we able to advance a theory consistent with popular divinations of the divine nature. [Marx – in Greek]

²⁶⁴ Aristotle, *Metaphysics*, XI (XII), 8 [1074 31, 38-1074, 3]. Evidently there is but one heaven... . Our forefathers in the most remote ages have handed down to their posterity a tradition, in the form of a myth, that these bodies are gods and that the divine encloses the whole of nature. The rest of the tradition has been added later, in a mythical form, with a view to the persuasion of the multitude and to its legal

Epicurus, on the contrary, [says]:

To all this we must add that the greatest confusion of the human soul arises from the fact that men hold that the heavenly bodies are blessed and indestructible and have conflicting desires and actions, and conceive suspicion according to the myths.²⁶⁵

As to the meteors, we must believe that motion and position and eclipse and rising and setting and related phenomena do not originate in them owing to [the] One [who is] ruling and ordering, or, having ordered, the One who, at the same time, is supposed to possess all bliss and indestructibility. For actions do not accord with bliss, but they occur due to causes most closely related to weakness, fear, and need. Nor is it to be supposed that some fire-like bodies endowed with bliss arbitrarily submit to these motions. If one does not agree with this, then this contradiction itself produces the greatest confusion in men's souls.²⁶⁶

When *Aristotle* reproaches²⁶⁷ the ancients for their belief that heaven required the support of Atlas²⁶⁸ who: 'In the places of the West, stands

and utilitarian expediency; they say these gods are in the form of men or like some of the other animals, and they say other things consequent on and similar to those which we have mentioned. But if one were to separate the first point from these additions and take it alone that they thought the first substances to be gods, one must regard this as an inspired utterance; and reflect that, while probably each art and each science has often been developed as far as possible and has again perished, these opinions, with others, have been preserved until the present like relics of the ancient treasure. [Marx – in Greek]

²⁶⁵ Diogenes Laertius, X, 81. There is yet one more point to seize, namely, that the greatest anxiety of the human mind arises through the belief that the heavenly bodies are blessed and indestructible, and that, at the same time, they have volitions and actions ... inconsistent with this belief ... apprehending some evil because of the myths... . [Marx – in Greek]

²⁶⁶ Ibid. X, 76.. Nay more, we are bound to believe that in the sky revolution, solstices, eclipses, risings and settings, and the like, take place without the ministration or command, either now or in the future, of any being who at the same time enjoys perfect bliss along with immortality. 77. For troubles and anxieties ... do not accord with bliss, but always imply weakness and fear and dependence upon one's neighbours. Nor, again, must we hold that things which are no more than globular masses of fire, being at the same time endowed with bliss, assume these motions at will... . Otherwise such inconsistency will of itself suffice to produce the worst disturbance in our minds. [Marx – in Greek]

²⁶⁷ Corrected by Marx from: 'blamed'. [Dirk J. and Sally R. Struik – MECW]

²⁶⁸ Aristotle, *On the Heavens*, II, 1 [284 ' 18-201. Hence we must not believe the old tale which says that the world needs some Atlas to keep it safe. [Marx – in Greek]

supporting with his shoulders the pillar of heaven and earth',²⁶⁹ Epicurus, on the contrary, rebukes those who believe that man needs heaven. He locates (*findet*) the Atlas, by whom heaven is supported, in human stupidity and superstition. As such, stupidity and superstition are Titans.²⁷⁰

The entire letter of Epicurus to Pythocles deals with the theory of the heavenly bodies, with the exception of the last section, which closes the letter with ethical precepts. And, appropriately,²⁷¹ ethical maxims are appended to the teaching on the meteors. For Epicurus this theory is a matter of conscience. Consequently, our study will be based primarily on this letter to Pythocles. We shall supplement it from the letter to Herodotus, to which Epicurus himself refers in writing to Pythocles.²⁷²

First, it is not to be supposed that any other goal is to be derived from knowledge of the meteors, whether apprehended as a whole or in part, other than *ataraxy*²⁷³ and confidence, just as with the other natural sciences.²⁷⁴ Our life has no need of ideology and empty hypotheses, but rather this: that we should live without confusion. Just as, in general, it is the business of physiology²⁷⁵ to investigate the fundamentals of the most important [things], so too happiness lies in knowledge of the meteors. In and for itself, the theory of setting and rising, of position and eclipse, contains no particular grounds for

²⁶⁹ Aeschylus, *Prometh.*, 348 ff. The quotation was inserted by Marx in Greek in place of the Latin translation, which he struck out. [Dirk J. and Sally R. Struik – MECW]

²⁷⁰ The Titans were the brothers of Cronus who vied with Zeus for domination at the beginning of the Greek heavenly pantheon. The Titans, who were giants, established their headquarters on Mt. Orthys, while Zeus, and the children of Cronus, occupied Mt. Olympus. Those Titans who survived the conflict were imprisoned in Tartarus, chained in the bowels of the earth while Zeus ascended to the sky to bring new ideas into the world. The leader of the Titans was Atlas for whom Zeus reserved the particular punishment of being banished to the west, to the Garden of the Hesperides, where he was obliged for eternity to support the earth and the sky on his shoulders. (See: *Greek Mythology and Religion*, Maria Mavromataki, Haitalis publishers, Athens, 1997, pp. 9-15.)

²⁷¹ 'Appropriately' corrected by Marx from 'not accidentally'. [Dirk J. and Sally R. Struik – MECW]

²⁷² Diogenes Laertius, X, 85. So you (i.e., Pythocles) will do well to take and learn them and get them up quickly along with the short epitome in my letter to Herodotus. [Marx – in Greek]

²⁷³ *ataraxy* – tranquillity. [Translator]

²⁷⁴ Ibid. X, 85. In the first place, remember that, like everything else, knowledge of celestial phenomena, whether taken along with other things or in isolation, as well as of the other sciences, has no other end in view than peace of mind and firm conviction.

Ibid. X, 82. But mental tranquillity means being released from all these troubles and cherishing a continual remembrance of the highest and most important truths. [Marx – in Greek]

²⁷⁵ 'the study of nature'.

happiness; only terror possesses those who see these things without knowing their nature and their principal causes.²⁷⁶ So far, only the *precedence* which the theory of the meteors is supposed to have over other sciences has been denied; and this theory has been placed on the same level as others.

But the theory of the meteors is *also specifically different* in comparison both with the method of ethics and with other physical problems, for example, the existence of indivisible elements and the like, where only one explanation accords with the phenomena. But this is not found in the case of meteors.²⁷⁷ Their origin has no simple cause, and more than one category of essence accords with the phenomena. For physiology cannot be pursued in accordance with empty axioms and laws.²⁷⁸ It is constantly repeated that the meteors are not to be explained *haplos* (simply, absolutely), but rather *poli-achos* (in many ways). This holds also for the rising and setting of the sun and the moon,²⁷⁹ the waxing and waning of the moon,²⁸⁰ the impression of a face on the moon,²⁸¹ the changes of length of day and night,²⁸² and other celestial phenomena.

How then is it to be explained?

Any explanation is sufficient. Only the myth must be removed. [And] it will be removed when, following the phenomena, we draw conclusions from

²⁷⁶ Ibid. X, 87. For our life has no need now of ideologies and false opinions; our one need is untroubled existence.

Ibid. X, 78. Further, we must hold that to arrive at accurate knowledge of the cause of things of most moment is the business of natural science, and that happiness depends on this (viz. on the knowledge of celestial phenomena).

Ibid. X, 79. There is nothing in the knowledge of risings and settings and solstices and eclipses and all kindred subjects that contributes to our happiness; but those who are well informed about such matters and yet are ignorant what the heavenly bodies really are, and what are the most important causes of phenomena, feel quite as much fear as those who have no such special information – nay, perhaps even greater fear. [Marx – in Greek]

²⁷⁷ Ibid. X, 86. We do not seek to wrest by force what is impossible, nor to understand all matters equally well, nor make our treatment always as clear as when we discuss human life or explain the principles of ethics in general ... for instance, that the whole of being consists of bodies and intangible nature, or that the ultimate elements of things are indivisible, or any other proposition which admits only one explanation for the phenomena to be possible. But this is not the case with celestial phenomena. [Marx – in Greek]

²⁷⁸ Ibid. X, 86. These at any rate admit of manifold causes for their occurrence and manifold accounts, none of them contradictory of sensation, of their nature.

For in the study of nature [physiology] we must not conform to empty assumptions and arbitrary laws, but follow the promptings of the facts. [Marx – in Greek]

²⁷⁹ Ibid. X, 92. [Marx]

²⁸⁰ Ibid. X, 94. [Marx]

²⁸¹ Ibid. X, 95 and 96. [Marx]

²⁸² Ibid. X, 98. [Marx]

these concerning the invisible.²⁸³ [When, that is,] we hold fast to the appearance in sensuous perception. Here, analogy is to be employed. In this way we can explain away fear, and free ourselves from it; [we do so] by specifying the reasons for meteors and other things which are always occurring and which cause utmost alarm to other people.²⁸⁴

The great number of explanations, the multiplicity of possibilities, should not only calm our minds (*Bewußtsein*) and remove the causes for fear, but rather, at the same time, negate the [presumed] uniformity that the same, and absolute, law [applies] in the heavenly bodies. Some behave one way some another, [and in] this lawless possibility is the characteristic of their actuality; everything in them is impermanent and unstable.²⁸⁵ *This multiplicity of explanations should, at the same time, transcend and preserve (aufheben) the uniformity of the object.*²⁸⁶

While Aristotle, in agreement with other Greek philosophers, makes the heavenly bodies eternal and immortal, because they always behave in the same way, while he ascribes to them their own higher element, one not sub-

²⁸³ Ibid. X, 104. And [says Epicurus] there are several other ways in which thunderbolts may possibly be produced. Exclusion of myth is the sole condition necessary; and it will be excluded, if one properly attends to the facts and hence draws inferences to interpret what is obscure. [Marx – in Greek]

²⁸⁴ Ibid. X, 80. When, therefore, we investigate the causes of celestial phenomena, as of all that is unknown, we must take into account the variety of ways in which analogous occurrences happen within our experience.

Ibid. X, 82. But mental tranquillity means being released from all these troubles... . Hence we must attend to present feelings and sense perceptions, whether those of mankind in general or those peculiar to the individual, and also attend to all the clear evidence available, as given by each of the standards of truth. For by studying them we shall rightly trace to its cause and banish the source of disturbance and dread, accounting for celestial phenomena and for all other things which from time to time befall us and cause the utmost alarm to the rest of mankind.

Ibid. X, 87. Some phenomena within our experience afford evidence by which we may interpret what goes on in the heavens. We see how the former really take place, but not how the celestial phenomena take place, for their occurrence may possibly be due to a variety of causes. [88.] However, we must observe each fact as presented, and further separate from it all the facts presented along with it, the occurrence of which from various causes is not contradicted by facts within our experience. [Marx – in Greek]

²⁸⁵ Ibid. X, 78. Further, we must recognise on such points as this plurality of causes or contingency... .

Ibid. X, 86. These [celestial phenomena] at any rate admit of manifold causes for their occurrence... .

Ibid. X, 87. All things go on uninterruptedly, if all be explained by the method of plurality of causes ... so soon as we duly understand what may be plausibly alleged respecting them... . [Marx – in Greek]

²⁸⁶ Regrettably, in this paragraph Marx is back to his bad habit of writing in a clipped style and with too few verbs. The use of *aufheben* in the concluding sentence is, however, noteworthy in that it is being purely Hegelian in nature.

ject to the force of gravity, in direct contrast, *Epicurus* claims the exact opposite. He reasons that the theory of the meteors is specifically differentiated from all other physical doctrine; in the meteors everything occurs in a multiple and unregulated way, that everything in them is to be explained by a manifold of indeterminately many causes. Yes, with rage and vehement zeal, he rejects the opposing opinion, that the meteor can be explained in one way, excluding all others. Those who admit something unique – hence eternal and divine – in the meteors, fall into the idle expositions (*Erklärerie*) and slavish artifice of the astrologers; they overstep the bounds of physiology and throw themselves into the arms of myth; they seek to achieve the impossible, they labour over absurdities; nor do they even realise when *ataraxy* itself is endangered. Their prattle is to be despised.²⁸⁷ We must avoid the prejudice that investigation into these objects cannot be sufficiently thorough and subtle if it only aims at our own *ataraxy* and happiness.²⁸⁸ On the contrary, it is an absolute law that nothing can come out of an indestructible and eternal nature

²⁸⁷ Ibid. X, 98. Whereas those who adopt only one explanation are in conflict with the facts and are utterly mistaken as to the way in which man can attain knowledge.

Ibid. X, 113. To assign a single cause for these effects when the facts suggest several causes is madness and a strange inconsistency; yet it is done by adherents of rash astrology, who assign meaningless causes for the stars whenever they persist in saddling the divinity with burdensome tasks.

Ibid. X, 97. And further, let the regularity of their orbits he explained in the same way as certain ordinary incidents within our own experience; the divine nature must not on any account be adduced to explain this, but must he kept free from the task and in perfect bliss. Unless this be done, the whole study of celestial phenomena will be in vain, as indeed it has proved to be with some who did not lay hold of a possible method, but fell into the folly of supposing that these events happen in one single way only and of rejecting all the others which are possible, suffering themselves to be carried into the realm of the unintelligible, and being unable to take a comprehensive view of the facts which must be taken as clues to the rest.

Ibid. X, 93. ...unmoved by the servile artifices of the astrologers.

Ibid. X, 87. ...we clearly fall away from the study of nature altogether and tumble into myth.

Ibid. X, 80. Therefore we must ... investigate the causes of celestial phenomena, as of all that is unknown, [...] while as for those who do not recognise the difference between what is or comes about from a single cause and that which may be the effect of any one of several causes, overlooking the fact that the objects are only seen at a distance, and are moreover ignorant of the conditions that render, or do not render, peace of mind impossible-all such persons we must treat with contempt. [Marx – in Greek]

²⁸⁸ Ibid. X, 80. We must not suppose that our treatment of these matters fails of accuracy, so far as it is needful to ensure our tranquillity and happiness. [Marx – in Greek]

which can give rise to danger [or] that can disturb *ataraxy*. Consciousness must grasp that this is an absolute law.²⁸⁹

Epicurus therefore concludes: *Because the eternity of the heavenly bodies would disturb the ataraxy of self-consciousness, it is a necessary, a stringent, consequence that they are not eternal.*

How now can we comprehend this peculiar view of Epicurus?

All authors who have written on Epicurean philosophy have presented this teaching as incompatible with all the rest of physics, [and] with the atomic doctrine. The struggle against the Stoics, against the superstitious, against astrology, is taken as sufficient ground.

And, we have seen that Epicurus himself distinguishes the *method* applied in the theory of the meteors from the method of the rest of physics. Yet, in what definition of his principle lies the necessity of this distinction? How does the idea occur to him?

And he struggles not only against astrology, but also against astronomy itself, against eternal law and reason in the heavenly system. Finally, opposition to the Stoics explains nothing. Their superstition and their whole point of view had already been refuted when the heavenly bodies were declared to be accidental complexes of atoms and their [the heavenly bodies] processes accidental motions of the atoms. The eternal nature of the heavenly bodies was thereby destroyed, a consequence that Democritus was content to draw from these premises.²⁹⁰ In fact, their particular being (*Dasein*) was thereby transcended (*aufgehoben*).²⁹¹ The atomist therefore required no new method.

But this is still not the whole difficulty. A more enigmatic antinomy presents itself.

The atom is matter in the form of independence, of individuality as it were, the representative of weight. The heavenly bodies are the supreme actualisation of weight. In them all antinomies between form and matter, between concept and existence, that constituted the development of the atom, are resolved; in them all required determinations are actualised. The celestial bodies are eternal and unchangeable; they have their centre of gravity in, not outside, themselves. Their only action is motion, and, separated by empty space, they flex from the straight line, and form a system of repulsion and attraction, in which, even so, they preserve their independence, and, finally, generate 'time' out of themselves as the form of their appearance. *Consequently, the heavenly bodies are the atoms become actual.* In them matter has received, in itself, individuality. Here Epicurus must have glimpsed the high-

²⁸⁹ Ibid. X, 78. ... but we must hold that nothing suggestive of conflict or disquiet is compatible with an immortal and blessed nature. And the mind can grasp the absolute truth of this. [Marx – in Greek]

²⁹⁰ Comp. Aristotle, *On the Heavens*, 1, 10. [Marx]

²⁹¹ Ibid. 1, 10 [279b, 25-26]. Suppose that the world was formed out of elements which were formerly otherwise conditioned than as they are now. Then ... if their condition was always so and could not have been otherwise, the world could never have come into being. [Marx – in Greek]

est existence of his principle, the peak and culminating point of his system. He asserted that he presumed the atom in order that nature would be provided with immortal foundations. He alleged that he was concerned with the substantial individuality of matter. But when he comes upon the reality of his nature – and he knows no other nature than the mechanical – when he comes upon independent, indestructible matter in the heavenly bodies, whose eternity and unchangeability were proved by the belief of the multitude, [by] the judgement of philosophy, [and by] the evidence of the senses: then his sole desire is to draw it down to an earthly transitoriness. He turns fervently against those who worship an independent nature which contains within itself the point of individuality. This is his greatest contradiction.

Epicurus feels that here his previous categories break down, that the method of his theory²⁹² must be different. And the *profoundest knowledge* of his system, its most inspired consequence, is that he is aware of this and expresses it consciously.

We have seen indeed how the whole Epicurean philosophy of nature is pervaded by the contradiction between essence and existence, between form and matter. *But this contradiction is resolved in the heavenly bodies*, the conflicting moments are reconciled. In the celestial system matter has received form into itself, has taken up individuality into itself and, thereby, has achieved its independence. *At this point it [the celestial system] ceases to be an affirmation of abstract self-consciousness*. In the world of the atoms, as in the world of appearance, form struggled against matter; the one determination transcended the other, and precisely *in this contradiction abstract-individual self-consciousness felt its nature objectified*. The abstract form, in the guise (*Gestalt*) of matter, which struggled against abstract matter, was *this [self-consciousness] itself*. But now, where matter has reconciled itself with form, and has become self-sufficient, individual self-consciousness emerges from its pupation, proclaims itself the true principle and demonstrates [its] enmity (*befeindet*) towards independent nature.²⁹³

²⁹² 'Method of his theory' was corrected by Marx from 'theory of his method'. [Dirk J. and Sally R. Struik – MECW]

²⁹³ This again is a tortuous piece of Hegelian writing, but in it Marx gives us a clue to his ultimate ideal and goal. This goal is the unity of Form and Matter – a very Aristotelian notion. Whatever or whoever embraces the *form* applicable to itself attains thereby to its highest self-realisation, or self-actualisation. In so far as man is able to embrace his own inherent 'form', and make his life in accordance with this 'form', he attains to the fullest self-actualisation possible, both as an individual and as part of a species. What then is man's 'form', and in what way will Marx come to express it in the future? The answer is: man's 'species being', or man living in accordance with the dictates of his own species: in other words, living as an individual who is 'at home' with the social life of his species. Just as an individual elephant lives happy with other elephants as part of a social group and attains thereby to his fullest realisation as an elephant, so for Marx, one day, man

This can be expressed in a different way: *Matter*, having received into itself individuality – form – as is the case with the heavenly bodies, *has ceased to be abstract individuality; it has now become concrete individuality, universality*. In the meteor, therefore, shines [an] abstract-individual self-consciousness that has met its factive (*sachlich*) contradiction, the universal that has become existence and nature.²⁹⁴ Consequently, abstract-individual recognises in the meteors its deadly enemy, and it ascribes to them, as Epicurus does, all the anxiety and confusion of men. Indeed, the anxiety and dissolution of the abstract-individual is precisely the universal. Here, therefore, Epicurus' true principle, abstract-individual self-consciousness, no longer conceals itself. It steps out from its hiding place and, freed from [its] material disguise (*Ver-mummung*), it seeks, by explanations based upon abstract possibility – what is possible can also be otherwise, the opposite of what is possible is also possible – to destroy the actuality of [a] nature become independent. Hence the polemic against those who explain the heavenly bodies *haplos*²⁹⁵ that is, in one particular way, for the One is the Necessary and Independent-in-itself.

So long as nature, as atom and appearance, expresses individual self-consciousness and its contradiction, the subjectivity of self-consciousness emerges only in the form of matter itself. Where, on the other hand, it [nature] becomes independent, reflects itself into itself, it confronts matter in its own guise (Gestalt) as independent form.

It could have been said from the beginning that where Epicurus' principle becomes actual it will cease to have actuality for him. Because, if the individual self-consciousness were, in reality, posited under the determination of nature, or nature posited under the determination of individual consciousness, then the determination of self-consciousness, that is, its existence, would have ceased, because only the universal in free distinction from itself can, at the same time, know its own affirmation.²⁹⁶

too will be free to live in accordance with the dictates of his 'species being'. [Translator]

²⁹⁴ This is a re-affirmation of what has just been stated in the previous note, for the *universal* of which Marx is here speaking – in Hegel's terms, *concrete individuality*, or the individual living as a part of his society – this, for Marx, is the 'species being' of man. [Translator]

²⁹⁵ Simply, absolutely. [Dirk J. and Sally R. Struik – MECW]

²⁹⁶ That is, be self-conscious, or be conscious of its own consciousness. Only something endowed with universality is capable of becoming self-aware, because only something so endowed is able to abstract itself from any and all particularity, and so from all external determinations, freeing itself thereby from what is 'given' and rendering itself capable of making itself an object for itself. This is the basis of human freedom and free will for Hegel. Here Marx gives it a distinctly Fichtean feel, and one that is not insignificant for his later philosophical development. In effect, Marx is saying that only in a world in which there is an external 'given' is it possible for there to be self-consciousness. If, on the one hand, the mind was purely controlled by the material world – a pure *materialistic determinism* – or, on the other hand, all materiality were merely an imagination of the

In the theory of meteors, therefore, appears the soul of the Epicurean philosophy of nature. Nothing is eternal which destroys the *ataraxy* of individual self-consciousness. The heavenly bodies disturb its *ataraxy*, its equanimity with itself, because they are the existing universality, because in them nature has become independent.

Thus the principle of Epicurean philosophy is not the *gastrology* of *Archestratus* as *Chrysippus* believes²⁹⁷ but rather the absoluteness and freedom of self-consciousness – even if this self-consciousness is only conceived in the form of individuality.

If abstract-individual self-consciousness is posited as an absolute principle, then, indeed, all true and actual science is thereby transcended (*aufgehoben*) in as much as individuality does not rule within the nature of things themselves. But then, too, everything collapses that is transcendently related to human consciousness and so belongs to the imagining mind (*Verstande*). On the other hand, if that self-consciousness which knows itself only in the form of abstract universality is raised to an absolute principle, then the gate and the door is opened to superstitious and unfree mysticism. The historical evidence (*Beweis*) for this we find in Stoic philosophy. Abstract-universal self-consciousness has, indeed, the drive to affirm itself in the things themselves, in which [realm] it can only affirm itself if it negates [*negiert*] these [things] themselves.²⁹⁸

Epicurus is therefore the greatest representative of the Greek Enlightenment, and he deserves the praise of Lucretius²⁹⁹:

mind – a *pure idealism* – then the mind would be constantly under the domain of ‘particularity’ – particular senses, passions, urges, etc., and so not be free to raise itself above these to attain to a universal perspective; and it is this perspective which, alone, is the prerequisite for language and for knowledge. For Fichte, this was the *antoss*, or the *resistance* which the world offers to man. This *resistance* is important for human development for it is what a baby uses to distinguish between itself and other things. For Marx too, this capacity to establish a distinction between the mental and the physical, or between an *ideal* and a *material* world, is an essential precondition for the development of human self-consciousness. [Translator]

²⁹⁷ Athenacus, *Banquet of the Learned*, III, 104. ... One ... must with good reason approve the noble Chrysippus for his shrewd comprehension of Epicurus’ ‘Nature’, and his remark that the very centre of the Epicurean philosophy is the *Gastrology* of Archestratus... . [Marx – in Greek]

²⁹⁸ A consciousness which is unable to appropriate the world as a part of itself is a consciousness which stands aloof from the world; it is a consciousness which separates itself from the world. Such a consciousness must either appropriate the world as ‘its own’ or bow down and worship what the world contains. In so far as man first ‘negates’ the world, he ceases to have a fetishistic relationship to the natural world and so religion falls and reason – human reason – begins to be elevated above the natural world out of which it arose. [Translator]

²⁹⁹ Lucretius, *On the Nature of Things*, 1, 63-70, 79-80. [Marx – the quote given in Latin]

When human life lay grovelling in all men's sight, crushed to the earth under the dead weight of religion whose grim features loomed menacingly upon mortals from the four quarters of the sky, a man of Greece was first to raise mortal eyes in defiance, first to stand erect and brave the challenge. Fables of the gods did not crush him, nor the lightning flash and growling menace of the sky... . So religion, in its turn, lies crushed beneath his feet, and we by his triumph are lifted level with the skies.

The difference between Democritean and Epicurean philosophy of nature, which we established at the conclusion of the general section, has been elaborated and confirmed in all domains of nature. Consequently, in *Epicurus*, *atomistics*, with all its contradictions, has been carried through and completed *as the natural science of self-consciousness*. This self-consciousness, which is in the form of abstract individuality, is an absolute principle. Epicurus has thus lead atomistics to its final conclusion and completion in which it becomes the dissolution of, and conscious opposition to, the universal. For *Democritus*, on the other hand, the *atom* is only *the universal objective expression of the empirical investigation of nature in general*. Hence, for him, the atom remains a pure and abstract category, a hypothesis that is the result of experience and [is] not its vigorous (*energisches*) principle. This hypothesis consequently remains without realisation, just as the real investigation of nature plays no further part in its determination.³⁰⁰

³⁰⁰ This is Marx's ultimate conclusion: that Epicurus emphasizes the *individual* at the expense of 'negating', or denying, the *universal*, while Democritus does the opposite and values the *universal* but is unable to relate it to the *individual*. In the hands of both philosophers, or so it would seem, Form (the *universal*) and Matter (the *individual*) fall asunder. [Translator]

SECTION TWO

CRITIQUE OF PLUTARCH'S POLEMIC AGAINST THE THEOLOGY OF EPICURUS

I. THE RELATIONSHIP OF MAN TO GOD

1. FEAR AND THE TRANSCENDENT BEING

1. Plutarch, That Epicurus Actually *Makes* a Pleasant *Life Impossible* (published by Xylander), 1 I, 1100. ... one point, that of pleasure they derive from these views, has, I should say, been dealt with (i.e., from Epicurus): ... their theory ... does remove a certain superstitious fear; but it allows no joy and delight to come to us from the gods. [In Greek]

2. [Holbach,] *System of Nature* (London, 1770), I, p. 9. ^[32] The idea of such powerful agencies has always been associated with that of terror; their name always reminded man of his own calamities or those of his fathers; we tremble today because our ancestors have trembled for thousands of years. The idea of Divinity always awakens in us distressing ideas ... our present fears and lugubrious thoughts ... rise every time before our mind when we hear his name. Comp. p. 79. When man bases morality on the not too moral character of a God who changes his behaviour, then he can never know what he owes to God, nor what he owes to himself or to others. Nothing therefore could be more dangerous than to persuade man that a being superior to nature exists, a being before whom reason must be silent and to whom man must sacrifice all to receive happiness. [In French]

3. Plutarch, 1.c., 1101. For since they fear him [God] as a ruler mild to the good and hating the wicked, by this one fear, which keeps them from doing wrong, they are freed from the many that attend on crime, and since they keep their viciousness within themselves, where it gradually as it were dies down, they are less tormented than those who make free with it and venture on overt acts, only to be filled at once with terror and regret. [In French]

2. CULT AND THE INDIVIDUAL

4. Plutarch, 1.c., 1101. No, wherever it [i.e., the soul] believes and conceives most firmly that the god is present, there more than anywhere else it puts away all feelings of pain, of fear and of worry, and gives itself up so far to pleasure that it indulges in a playful and merry inebriation, in amatory matters... [In Greek]

5. Ibid., 1.c.

6. Ibid., 1.c., 1102. For it is not the abundance of wine or the roast meats that cheer the heart at festivals, but good hope and the belief in the benign presence of the god and his gracious acceptance of what is done.

3. PROVIDENCE AND THE DEGRADED GOD

7. Plutarch, 1.c., 1102. ... how great their pleasures are, since their beliefs about God are purified from error: that He is our guide to all blessings, the father of everything honourable, and that he may no more do than suffer anything base. For He is good, and in none that is good arises envy about aught or fear, or anger, or hatred; for it is as much the function of heat to chill instead of warm as it is of good to harm. By its nature anger is farthest removed from favour, wrath from goodwill and from love of man and kindness, hostility, and the spreading of terror; for the one set belong to virtue and power, the other to weakness and vice. Consequently, it is not true that Heaven is prey to feelings of anger and favour; rather, because it is God's nature to bestow favour and lend aid, it is not his nature to be angry and do harm.... [In Greek]

8. Ibid. Do you think that deniers of providence require any other punishment, and are not adequately punished when they extirpate from themselves so great a pleasure and delight? [In Greek]

9. 'Reason, however, is not the one who knows a non-objective God, but rather the one that wishes to know'. Schelling, 'Philosophical Letters on Dogmatism and Criticism' in *Philosophische Schriften*, Vol. I, Landshut, 1809, p. 127, Letter II. Herr Schelling would, on the whole, be advised to reflect on his first writings. As, for example, he states in his essay *On the Ego as a Principle of Philosophy*: 'One accepts, for example, that *God*, insofar as he is determined as an object, is the real ground of our knowledge, and therefore [that] he certainly belongs, insofar as he is an object, within *the sphere of our knowledge* and so cannot be for us the final point on which the whole sphere depends' (1.c., p. 5). Finally, we remind Herr Schelling of the conclud-

ing words of his letter quoted above: ‘*It is time to proclaim to the better part of humanity the freedom of the mind*, and no longer to endure them lamenting the loss of their fetters”. p. 129, l.c. If it was so in 1795, how is it the year 1841?³⁰¹

We have the opportunity [here] to consider what has already become a bewitching theme, namely, the *proofs for the existence of God*; Hegel has turned this theological demonstration entirely around, that is, he degrades them in order to vindicate them. What must it be for a client whose advocate can only reprieve him from condemnation by delivering the fatal blow himself? Hegel interprets, for example, the conclusion *from the world to God* in the form: ‘because the accidental does not exist, God, or the Absolute, does exist’.³⁰² Unaided, the theological demonstration is expressed as the opposite: ‘because the accidental has true being, God exists’. God is the guarantor of the accidental in the world. It is obvious from this that the opposite has been stated.³⁰³

The proofs for the existence of God are nothing other than *hollow tautologies* – for example, the ontological proof is nothing other than:³⁰⁴ ‘that which

³⁰¹ Both of Friedrich Schelling’s works quoted by Marx (*Philosophische Briefe über Dogmatismus und Kriticismus* and *Vom Ich als Princip der Philosophie, oder über das Unbedingte im menschlichen Wissen*) appeared in 1795. Later Schelling renounced his progressive views and turned to religious mysticism. In 1841 Schelling was invited by the Prussian authorities to the University of Berlin to oppose the influence of the representatives of the Hegelian school, the Young Hegelians in particular. [Original editor]

³⁰² Marx probably refers to the 13th lecture on the *History of Religion* delivered by Hegel at the University of Berlin during the summer term of 1829. [Original editor]

³⁰³ For Aristotle, all accidental being is dependent and non-substantial. It is a being which exists by virtue of something else and not intrinsically in its own right. (Colour, for example, does not exist in its own right, it exists only by virtue of a *perceiving* entity, be that entity a man or an animal.) Here God is made the basis for the existence of such ‘dependent being’ – in effect, He becomes the ground of their *necessity*. But Hegel has reversed the premise with the conclusion of the argument. Rather than *presuming* God and then *concluding* that ‘accidental being’ exists, he *presumes* that ‘accidental being’ exists and *concludes* that a God must exist as its support. Aristotle, it should be noted, was by no means so silly. He merely concluded that dependent being – i.e., accidental, or incidental, being – depends for its existence on some other independent, or self-dependent, form of being which already exists in the world. Marx’s point is, however, insightful, because to conclude that: ‘the accidental does not exist’, as Hegel does, is to conclude that everything has a ‘necessary cause’ and so God is made the progenitor of what is *accidental* in the world as opposed to being the source of what is *substantial*, or *essential*. To say the least, on Hegel’s part this is a very degraded form of St. Anselm’s *Ontological Argument* for the existence of God. [Translator]

³⁰⁴ I have omitted the word *entweder*, (either) from this sentence because it is part of a pair in German, as it is in English, namely, *entweder – oder*, or ‘either – or’.

to me is an actual [real] (*realiter*) idea, is an actual concept for me', [that is] what effects me, and in this sense *all* the *gods*, the pagan as much as the Christian, have possessed a real existence. Did not the ancient Moloch reign? Was not the Delphic Apollo an actual power in the life of the Greeks? Here Kant's Critique³⁰⁵ also [provides] no instruction. If somebody imagines he has a hundred thalers, if this idea is not for him an arbitrary, subjective one, if he believes in it, so these hundred fanciful Thalers have the same worth as a hundred actual [Thalers].

He will, for example, incur debts on the basis of his fancy; they [his fancied Thalers] will, in *effective*, become [Thalers]; *likewise the whole of mankind has incurred debts to his gods*. On the contrary; Kant's example had confirmed the ontological proof. Actual thalers have the same existence as the fanciful gods. Has the one a more universal, or rather, a more common idea of man [than the other]?³⁰⁶ Introduce paper money into a country where this use of paper is unknown, and everyone will laugh at your subjective idea. Come with your gods into a country where other gods are worshipped and it will be evident that you suffer from fantasies and abstractions. Rightly so! He who would bring a Wendic³⁰⁷ god to the ancient Greeks would have found evidence for the non-existence of this god, for he [this god] did not exist for

Marx was evidently writing at such speed that he apparently forgot that he had used *entweder* and did not include its complement *oder*. [Translator]

³⁰⁵ The reference is to Kant's critique of the different ways of proving God's existence in his *Kritik der reinen Vernunft* (*Critique of Pure Reason*). [Original editor]

³⁰⁶ Marx refers to the following remark made by Kant in his *Critique of Pure Reason* in connection with the speculation on the logical meaning of the elements of reasoning (subject, predicate, and the copula 'is'): '... A hundred real thalers do not contain the least coin more than a hundred possible thalers. For, as the latter signify the concept, and the former the object, and the positing of the object, should the former contain more than the latter my concept would not, in that case, express the whole object, and would not therefore be an adequate concept of it. My financial position is, however, affected very differently by a hundred real thalers than it is by the mere concept of them (that is, of their possibility). For the object, as it actually exists, is not analytically contained in my concept, but is added to my concept (which is a determination of my state) synthetically; and yet the conceived hundred thalers are not themselves in the least increased through thus acquiring existence outside my concept'. [Original editor] Marx's criticism is not actually a criticism of Kant, because Marx's position is a psychological and Kant is referring not to 'delusions' – whether about money or the gods – but to the relationship between a *concept* and a *percept*. If I *think* of 100 thalers there is no difference between this *concept* and 100 *actual* thalers, though, as Kant notes, 100 *real* thalers are in every way preferable to 100 *conceived* thalers. [Translator]

³⁰⁷ *Wends* – old name of West Slavic tribes. [Original editor]

the Greeks. *What a particular country is for particular alien god, the country of Reason is for God in general, a region in which his existence ceases.*³⁰⁸

Or the proofs for the existence of the gods are nothing more than *proof for the existence of ||76| essential human self-consciousness, [and are] logical explications of this*; for example, the ontological proof in which being is immediate when it is thought? Self-consciousness.³⁰⁹

In this sense all proofs for the existence of God are proofs of his *non-existence, refutations* of all ideas of a God. The actual proof must run contrariwise:

‘Because nature is badly arranged, God is’,

‘Because the world is irrational, God is,

‘Because there is no thought, God is’.

But what does that say, except: *to whom the world is irrational, who himself is irrational, to him God is, or: the irrational is the existence of God.*

‘When you presume the *idea* of an *objective God*, how can you speak of laws which *reason* brings forth *out of itself*, for surely *autonomy* alone befits an *absolutely free being*’. Schelling, l.c. p. 198 [Letter X].

‘It is a crime against humanity to conceal principles that are universally communicable’. Ibid., p. 199. [In German]³¹⁰

³⁰⁸ This is a strong assertion of Marx’s atheism, an allegiance which predates his adoption of communism by 4 years. What follows substantiates this view. [Translator]

³⁰⁹ This is Descartes. When I think, then I know that I think. The existence of my thinking is proven by nothing more than my actual thinking, and, moreover, nothing more than my own thinking is substantiated by my thinking. To ‘think God’ is to think of a concept – however inadequately defined – and, as such, it only gives proof of the existence of the ‘thinker’ but not of the ‘object’ thought! [Translator]

³¹⁰ Given that Marx submitted his doctorate to the University of Jena to avoid the interference of Schelling, these quotations are as much a political slap in the face as they are academic citations. Marx is quoting the young Schelling against the old. For the young Schelling – an ardent Kantian – *autonomy* belongs properly to ‘the absolutely free being’ which is man and not God. Marx’s general point is also of interest. As we have seen in the case of ‘accidental being’, the idea of God is supposedly associated with the perfect and the rational, but it is the imperfect and the irrational that requires both an explanation and a cause. [Translator]

SECTION THREE

COMMENTARY

THE DIFFERENCE BETWEEN THE DEMOCRITEAN AND EPICUREAN PHILOSOPHY OF NATURE

THE THESIS AND ITS SUBMISSION

Marx submitted his thesis: *Concerning the Difference between the Democritean and Epicurean Philosophies of Nature* to the University of Jena in 1841 in partial fulfilment of the requirements for the degree of Doctor of the university. Initially there had been some confusion; it was thought that he was applying for the degree of *Magister*, or Master. In the Germany of his day, Marx would have required at least the degree of *Magister* in order to teach. However, the confusion was quickly resolved and Marx duly submitted for, and received, the degree of *Doktor*.

Ever since, there have been suggestions that Marx submitted the degree to the University of Jena because the institution was supposedly known as an ‘easy’ university from which to acquire a doctorate. Such a suggestion is an unwarranted slur both on the academic standard of Marx and on the University of Jena. As we have seen, there was a perfectly valid reason behind Marx’s decision to submit his thesis at Jena rather than at Berlin, and that reason was ‘politics’. The ageing Schelling had recently been brought into the *Frederick Wilhelm Universität* to ‘quell’ the growing Hegelian radicalism of its students. Originally a fervent support of the French revolution – Schelling had even translated the French revolutionary anthem, *La Marseillaise*, into German in his youth – by 1840 Schelling had become an arch reactionary.³¹¹ We do not have to look too far for the reasons for his doing so. Two

³¹¹ In a letter to Ludwig Feuerbach in Bruckberg, written by Marx from Kreuznach, October 3rd 1843, Marx makes the following comment on Schelling – the text is taken from the MECW Volume 3, pp. 349-50:

Schelling, as you know, is the 38th member of the [German] Confederation.* The entire German police is at his disposal as I myself once experienced when I was editor of the *Rheinische Zeitung*. That is, a

years older than Hegel, and the unchallenged head of the radical students at the University of Tübingen in the late 1780s, in the years following, Schelling had been obliged to watch his younger rival enjoy not merely a remarkable career but the national renown which Schelling thought his due. Eclipsed by his junior, by 1840 Schelling was only too willing to help rid Berlin university of its addiction to Hegel and Hegelianism. As a prominent member of the Hegelian 'Doctors' Club', Marx was a marked man and, no doubt, had good reason to suspect that any submission for a higher degree in Berlin would encounter more than a few difficulties.³¹² The University of Jena was close enough to Berlin to facilitate a submission and could be relied upon to provide an impartial assessment of the thesis. So it was that Marx duly repaired to Jena having completed his thesis in late 1841.

Before considering the events surrounding the granting of the degree of *Doktor* to Marx, it is worth quoting from a review by Cyril Bailey on the occasion of the first publication of the thesis in 1928. Bailey made two comments. First he notes:

Looking back on his work now it is almost astonishing to see how far he got considering the materials then available.³¹³

He then notes that:

It is interesting to find one who was afterwards to win fame in very different fields starting his career with an enthusiastic tract on Greek philosophy, which he evidently intended to make his work for years to come, for not only does he tell us in his introduction that this thesis is a prelude to a comprehensive study of Epicureanism, Stoicism, and Scepticism, 'the philosophical basis of Roman life and character', but appended to the dissertation are some sev-

censorship order can prevent anything against the holy Schelling from getting through.

Marx goes on to propose a means of embarrassing Schelling during his trip to Paris to the disadvantage not merely of Schelling himself but also the Prussian government whom Schelling was representing. The animosity between these two men clearly ran deep.

*[This, of course, is sarcasm: the German Confederation was founded by the Congress of Vienna in 1815 and contained 33 German states and 4 free cities. Schelling is its 38th member.]

³¹² It is not to flatter Marx to say that by the time he reached Berlin he had already been singled out as someone to watch. He had been something of a *wunderkind* in Trier and had been noticed even before his entry into the university at Bonn. By the time he reached Berlin his 'fame', or 'infamy', whichever you prefer, had certainly preceded him; which is perhaps another reason why, in his first year in Berlin, Marx clearly 'played by the rules'.

³¹³ Cyril Bailey, 'Karl Marx on Greek Atomism', *The Classical Quarterly*, vol. 22, no. 3/4 (July – October, 1928), p. 205.

enty pages of preliminary notes for the larger work, which range over such varied subjects as 'The Immanent Dialectic of the Epicurean Philosophy', 'The Idea of the "Wise Man" in Greek Philosophy', and 'Parallels between the Epicureans and the Pietists and Supernaturalists'.³¹⁴

If we turn to the events surrounding the submission of the thesis, we shall discover one or two remarkable, and salient, facts. In 1977 Ernst Günther Schmidt undertook a review of the information still available about Marx's submission.³¹⁵ Schmidt notes that though he was duly paid as an examiner, Heinrich Carl Abraham Eichstädt, the noted Jena classical philologist, did not sign the 'promotions document' granting Marx the degree of doctor.³¹⁶ Nevertheless, the Dean of the Faculty, Karl Friedrich Bachmann, provided a glowing testimonial of Marx's abilities. Schmidt remarks that:

Bachmann's judgement about Marx's work was 'attested as much by mental [acumen] and by a keen sense, as by erudition' and he regarded the candidate as 'of excellent worth', [and], as proof, indicates his remarkable foresight.³¹⁷

Schmidt goes on to declare:

it seems certain that Bachmann's vote, contrary to all doubt, was not only favourable (G. Steiger in the *Jena Facsimile* publication p. 27), but rather, was quite extraordinarily so.³¹⁸

Of the 15 candidates who submitted theses to the University of Jena at the same time as Marx – the summer semester of 1841 – most in pursuance of the degree of *Doktor*, 3 were rejected and 12 were accepted. According to Schmidt, 'no other submission comes close to such high praise' as that received by Marx.³¹⁹ And Schmidt adds:

³¹⁴ Ibid.

³¹⁵ Ernst Günther Schmidt, 'Neue Ausgaben der Doktordissertation von Karl Marx (MEGA (2) 1/1) und der Promotionsdokumente', *Philologus*, 121:2 (1977) pp. 273-284. The reason which Schmidt offers for Eichstädt's omission is one of time. Illness must also be considered as a possibility, as must a certain degree of reticence in respect of the political influence being discretely applied in Marx's favour; more of which below.

³¹⁶ Heinrich Carl Abraham Eichstädt (1772-1848) was made Professor of Philology and Eloquence in the Jena Philosophical Faculty in 1797.

³¹⁷ Ibid. this translation, and the one following, are by the author.

³¹⁸ Ibid.

³¹⁹ Ibid.

Also, in the surrounding semesters, for years and for decades, there is, with rare exception, no judgement so positive as the one Marx inspired.³²⁰

I have indicated in footnotes to the above translation that Marx dedication of the thesis to the mentor of his youth, Herr Freiherr von Westphalen – whose daughter, Jenny, Marx was to marry – contains language suggestive of Freemasonry. It is not beyond the bounds of possibility that Marx knew that the University of Jena was under Masonic influence, a fact which, if true, would have served him well in respect of any proposed submission. Given the known revolutionary tendencies of the Freemasons across continental Europe, such a submission would certainly have annoyed Schelling and he, in turn, would have had little opportunity to interfere in the award process.

Having considered the provenance of the thesis, it now becomes a matter of its understanding and interpretation. The thesis has long been considered Hegelian in inspiration. This is not to be denied, but there lies at its heart a difference with Hegel that would eventually lead Marx to a critical perspective with regard to his intellectual mentor, a difference which Marx may already have been formulating at the time of writing. We may say that the underlying tenor of the thesis is as much Aristotelian as it is Hegelian.

The central theme of the thesis, by means of which Marx seeks to establish a difference between Epicurus and Democritus, is wholly Aristotelian in nature. This theme revolves around the relationship between two Greek terms *arche*, or ‘principles’, and *stoicheion*, or ‘elements’. For Aristotle, ‘principles’ govern and order ‘elements’. The two are not merely distinct but opposites. *Principles* are rational, and so knowable by *reason*, while the *elements* are physical, and knowable by *sensation*. Moreover, *principles* are *universal* while *elements* are the basis of *individuation*. In Aristotle’s philosophy – as in the philosophy which Marx was later to develop – both *reason* and *sensation* as of equal worth in the contribution they make to human knowledge. For Marx, following Aristotle, if we wish to *know* the world we must have recourse to two distinct methods: first, we know the world *rationally* as a series of *ideas* or concepts, and second, we know it *sensuously* as a *material* reality standing before us.

In what follows, I hope to provide a more detailed exposition of this and other points of note in Marx’s thesis. From this point onwards, the heading will correspond to those to be found in the translation.

³²⁰ Ibid.

PART I

DIFFERENCE BETWEEN THE DEMOCRITEAN AND EPICUREAN PHILOSOPHY OF NATURE IN GENERAL

My focus on Marx's doctorate will be to reproduce, as far as is possible, the analysis which Marx himself undertook and which, eventually, was to become the mainstay, not only of his own view of these Greek atomists, but of philosophy and human knowledge in general. In other words, I shall seek to reproduce and to substantiate, if necessary line by line, the thesis which Marx outlined.

At the outset, we should note that we do not have before us Marx's complete dissertation; two sections from Part I are missing. These were entitled: a) *General Difference in Principle between the Democritean and Epicurean Philosophy of Nature*, and b) *Result*. Schmidt speculates that Eichstädt may have kept part of the original document for his own reference, particularly because Marx makes reference to the work of Knebel in whom Eichstädt seemingly had an academic interest.³²¹ Their loss is probably significant because, as the section titles indicate, it is likely that Marx drew a number of general conclusion in respect of the subject of his study and presented these at the outset. From the remains it ought to be possible, given a little forensic detective work, to reconstruct, at least in part, the main tenets of these conclusions. In consequence, the loss should not be regarded as precluding the possibility of a general reconstruct of the overall view reached by Marx.

The ostensive subject of the thesis is a determination of the differences, if any, between the natural, or physical, philosophies of Democritus and Epicurus. These two philosophers together constitute the mainstay of the Greek 'atomistic tradition' – indeed they constitute the virtually the totality of that tradition as it has come down to us. Until Marx, it had been a commonplace to regard Epicurus as following in the footsteps of Democritus. It was presumed that Epicurus added nothing to the work of his predecessor. Marx quotes Cicero, among others, to justify his assertion that Epicurus was dismissed as being of no merit by comparison with Democritus:

In physics, in which Epicurus is the most pretentious, he is a perfect stranger. Most of it belongs to Democritus; where he diverges from Democritus, where he wishes to improve [on him], he spoils and impairs.³²²

³²¹ According to Schmidt, Eichstädt was a 'famed interpreter of Knebel in 1821'.
Op cit.

³²² On Cicero: *On the Nature of the Gods*, I, 26. The quotation is from *The Highest Goods and Evils*, I, 6.

It is the presumption which Marx sought to challenge and which therefore constitutes the 'thrust' of his critical re-appraisal of the philosophical relationship between these two men.³²³ By the criteria for the award of a doctoral thesis, both then and now – namely, to make a contribution to human knowledge – Marx clearly demonstrated that his thesis was no pedestrian compilation intended to secure a 'quick' doctorate. On the contrary, it is not merely scholarly but complex and deep.

While the two philosophers supposedly taught the same doctrine, Marx noted the following differences between Democritus and Empiricus: 1) with regard to the nature of *truth*; 2) in regard to their view of *certainly*; 3) the way in which each choose to apply their 'science' to the world of men; 4) the relationship between *thought* and *reality*.

It is the last of these which is the most significant and upon which I shall lay the greatest emphasis. According to Marx, the differences between the two men were and are sufficient to justify the assertion that they stood diametrically opposed. To justify his assertion Marx begins by demonstrating an inherent contradiction within the assertions of Democritus. Democritus holds that *reason* alone produces 'truth' while *sensation* produces mere 'seeming'. For Democritus, the sun is large because *reason* tells him so; in other words, the sun is not the size which it 'seems' to be. But Democritus is stuck on the horns of a dilemma. The atoms and the void, the two central principles of his philosophy, are known to be 'true' by virtue of *reason* alone. Yet Democritus must then assert that, if *reason* guides us to these two principles then it is necessarily the case that what these principles produce – namely, the phenomenal world of objects composed of atoms – must also be 'true' in some sense. In the words of Alexander Pope, Democritus is unable to determine whether 'his mind or his body to prefer': does 'truth' reside in *reason* or in *sensation*. Read him one way and he seems to favour one view, read him another way and he seems to favour the other view. Worse, the *sensations* which, supposedly, are produced by the 'atoms' are not regarded by Democritus as in any way juridical. For him, the *sensations* we have of the world are *not* 'objective truth revealed', rather they are a product of our own 'seeming'; in other words, they are merely a *subjective* appreciation of what is presented to us. Democritus clearly understood that things are 'hot' and 'cold' to different people in different ways and to different degrees, and even contradictorily so at different times with respect to the same perceiving subject. Marx observes that these two 'ways of knowing' are never reconciled in Democritus, but are forever doomed to remain apart. According to Marx,

³²³ It is worth quoting again from the review article by Cyril Bailey's cited above: 'though Marx's conclusions could hardly be accepted in detail, his thesis is of real interest to a modern student of Epicureanism, firstly, because it exhibits the workings of a subtle and ingenious mind in the presence of a very difficult problem, and secondly, because it does call attention, in a very arresting way, to the real differences between Democritus and Epicurus, and to the genuine originality of the later thinker'. p. 206.

Democritus is unable to reconcile within himself the conflicting nature of his own dualistic epistemic view. In consequence, as Marx states in a notable observation:

In this way Democritus makes sensuous actuality into subjective seeming; but the antinomy, banned from the world of objects, exists now in his own self-consciousness, in which the *concept* of the atom and *sensuous* intuition meet as enemies.³²⁴

When we come to Epicurus, matters are arranged differently. Epicurus has no hesitation in asserting that it is *sensations* which are the real 'heralds of truth'.³²⁵

The heart of the difference which Marx claims to have discovered between Democritus and Epicurus is the way in which each conceived of the 'atom and the void'. The word *atomos* means in Greek 'indivisible' and represents the belief in something that is 'minimal' and beyond which, both in physical fact and in logical analysis, we cannot go. In other words, *atomos* expresses the idea of an irreducible 'minimum', and neither Democritus nor Epicurus sought to challenge this idea.³²⁶ But how is this 'minimum' to be considered, what may we know of it, and how are we to regard it? Let us begin by seeking Marx's initial opinions with respect to Democritus and Epicurus.

Marx's view of Democritus is clear from the first few pages of the thesis. For Democritus, the atom is not a product of *sensuous* knowledge but rather is an idea of *reason*:

In truth the One does not come out of many atoms but rather, 'through the combination of atoms the One *appears (scheint)* to come to be'. The principles are therefore only perceived through reason; they are inaccessible to the sensing eye owing to their smallness. For this reason they are even called *ideas*.³²⁷

On this view, no matter how many 'atoms' we may have, we shall never produce a unified world, a single structured entity. The 'one', or the 'whole', is merely a semblance, a seeming for Democritus, at best a subjective appearance devoid of objective validity. By this I take Marx to mean that for Democritus the 'whole' cannot be produced by a simple process of accumulation, or addition, of atoms. For Marx this is productive of a tension in Democritus's philosophy, one which leads inexorably to an antinomy, or to an irreconcilable contradiction:

³²⁴ Translator's emphasis.

³²⁵ 'All senses are heralds of the true.' Cicero, *On the Nature of the Gods*, I, 25. The remaining citations provided by Marx in justification are given in note 52 above.

³²⁶ Which is why, when Ernest Lord Rutherford first split the 'atom' at the Victoria University of Manchester in the 1930s, his results were as much an 'upset' for Greek linguistics as for Victorian atomistic physicists.

³²⁷ These quotes are from Plutarch, *Reply to Colotes*.

The sensuous appearance is, on the other side, the only true object, and the *aisthesis is the phronesis*,³²⁸ the truth, however, is the changing, the unstable, the phenomenon. That the phenomenon is the truth is contradictory. Now the one, now the other side is made the subjective and the objective. Thereby the contradiction appears to be held apart, wherein it becomes divided into two worlds.

The use of 'on the one side' by Marx is classically Hegelian and expresses the relationship of two contradictory theses – a thesis and an antithesis – one opposing the other. Marx concludes that the antithesis established by Democritus between *sensation* and *reason* is inherently unstable and productive of two separate, divorced 'worlds' which mutually oppose one another. Regardless of which 'side' we take, we make the presumption that the 'side' we are currently considering is legitimate while the other 'side' is not. We then reverse the process and regard what was previously rejected as 'the herald of truth'. Try as he might, Democritus could not move from the realm of *ideas* – of rational insight – into the light of day – and embrace the *sensuous* as a itself necessary composite of particles which are invisible in themselves. If there can be no transition from our first principles to the nature of the world, we are left adrift. Here then there is an unbridgeable gulf fashioned between *sensation* and *reason*, the consequences of which, for Marx, are perfectly clear. To repeat what has just been said:

In this way Democritus makes sensuous actuality into subjective seeming; but the antinomy, banned from the world of objects, exists now in his own self-consciousness, in which the *concept of the atom* and *sensuous intuition* meet as enemies.³²⁹

For Marx, this contradiction between *sensation* and *reason* exists within the consciousness of Democritus. With Democritus, these two sources of human knowledge stand not merely divided but incommunicative, and even hostile one to another.

If we now turn to Marx's consideration of Epicurus we will find that Marx's estimation of Epicurus's position is not merely distinct from that of Democritus but the diametrical opposite. According to Epicurus:

The wise, he says, maintains a *dogmatic*, *not* a *sceptical* position. Yes, exactly this is his superiority over all [others], which he knows with conviction. 'All senses are heralds of the true.' '*Nothing can refute sensuous perception*'.³³⁰

³²⁸ *Aisthesis*, 'sensuousness', *phronesis*, 'reason', or 'rationality'.

³²⁹ Author's italics.

³³⁰ Marx's italicisation.

Unlike Democritus, Epicurus recognises that the *sensuous* has a validity in its own right: 'because the concept is dependent upon sensuous perception'. This final statement, short as it is, is, at one and the same time: a) the first clear distinction between Democritus and Epicurus, b) an expression of Marx's Aristotelianism, c) the basis of Marx's subsequent critique of Hegel's *Philosophy of Right*, and d) the basic foundation of all that was to come in respect of Marx's own philosophical position, namely, the *material theory of history*. From little acorns, might oaks do grow!

In regard to Epicurus's revalidation of the role of the empirical in human knowledge, Marx quotes from Cicero to the effect that Democritus – the *rationalist* – held the Sun to be very large, basing his claims on his 'rational' knowledge of geometry, while for Epicurus – the *sensationalist* – the Sun was 'two feet wide', because he judged it to be as large as it 'seems'.

Having reached this far, Marx returns to his initial starting point: the difference between *principles* and *elements* – a distinction we shall encounter more fully in due course. It is a distinction which, undoubtedly, is of Aristotelian formulation. First, the Democritean system.

Because for Democritus the *sensuous* is 'torn free' from the *principle*, on the basis of this philosophical presupposition there is no means by which to unite *principles* with the *elements* to which they, of necessity, correspond. The *rational* – the *principles* – and the *sensuous* – the *elements* – stand eternally divorced. All that Democritus can do in respect of the *sensuous* is to stare at it! As Marx notes, unable as he is to incorporate the *sensuous* in his system, Democritus is reduced to seeking 'positive' knowledge, by which I understand Marx to mean: 'facts'. As Marx describes it, Democritus is driven to 'search outside himself', because he has no means of producing 'knowledge' from within himself. To do so he would need to order the *elements* of his *sensuous perceptions* under the rubric of *principles* deriving from his *rational understanding*. Prevented by his evident inability to achieve a synthesis of opposites:

we see Democritus wandering through *half the* world in order to acquire experiences, knowledge, and observations.

In a remark clearly reminiscent of Kant, Marx observes that:

the knowledge that he [Democritus] held [to be] true is without content, the knowledge that gives him content is without truth.³³¹

According to Cicero, Democritus blinded himself in order not to 'darken' the sharpness of his intellect.³³² Marx refrains from commenting that in his

³³¹ Percepts without concepts are inchoate, concepts without percepts blind. Immanuel Kant, *Critique of Pure Reason*.

³³² Almost certainly this story is merely apocryphal.

tail, Cicero had recognised, even if he had not fully understood, the nature of the contradiction which lay at the heart of Democritus's theory of the atom. With Epicurus matters are arranged differently. For Epicurus there is no division, no uncrossable Rubicon, in his theory between *principles* and *elements*. While Democritus seeks a necessary explanations for all phenomena through *reason*, Epicurus treats all phenomena as manifesting a range of possible interpretations and explanations. For Democritus *necessity* is the mother and father of all knowledge, and *necessity* implies for him a *real possibility*, that is to say, one determinate explanation for each and every event. Epicurus, by contrast, is willing to give his imagination free reign and to consider any account as to why things are as they are. So long as these explanations do not contradict the phenomena as perceived Epicurus is happy to consider what Marx terms *abstract possibility*, which is to say, anything which may account for an event. Democritus seeks *knowledge*, while Epicurus simply seeks *peace of mind* – *ataraxy*. In summation, Marx contrasts both philosophers: Democritus is the 'sceptic and empiricist', while Epicurus is the 'philosopher and dogmatist':

The *sceptic* and *empiricist*, who holds sensuous nature to be subjective appearance, considers it from the point of view of *necessity*, and seeks to explain and grasp the real existence of things. The *philosopher* and *dogmatist*, on the other hand, who considers phenomena to be real, sees everywhere only chance, and his method of explanation tends rather to go beyond (*aufzuheben*) all objective reality of nature. A certain absurdity seems to lie in these contradictions.

The 'absurdity' is simply this: Democritus, the rationalist, is, in truth, forever an empiricist, but an empiricist who is also forever a sceptic in respect of his ability to divine the 'real causes' of the phenomena he encounters; Epicurus, the empiricist, is a dogmatist who is willing to seek as many explanations for phenomena as his rational intellect is capable of generating. The position of each man is a contradiction and a conundrum, though in opposed directions. Yet both men, supposedly, have the same general philosophical outlook, share the same philosophical presuppositions, and were deemed by the ancients, and by the middle ages, to have the same philosophical system: 'the atoms and the void'.

In conclusion, Marx asserts that the difference of perspective between Democritus and Epicurus resolves itself into a question the relationship of *necessity* and *chance*. By virtue of tracing everything back to *reason*, Democritus invites us to regard the world as composed according to certain *necessary*, and so unavoidable, circumstances, circumstances to which he ascribes the name 'fate'. Epicurus, on the other hand, does precisely the opposite. He can find no *necessity* in what he observes through the senses. By basing his ideas upon the *sensuously* given, Epicurus is obliged to conclude that *chance*

alone governs the material world of the atoms and the void. As Marx concludes:

This much is historically certain: *Democritus* makes use of *necessity*, *Epicurus* of *chance*. And each rejects the opposing view with polemical irritation.

The two philosophers arrived at diametrically opposing results. These results which associate *necessity* with *reason* and *chance* with *sensuousness* are not, for Marx, incidental consequences of the manner and character of Democritus and Epicurus. Rather, these are consequences which go to the heart of Marx's own relationship with Hegel. By means of his philosophy, Hegel had sought to demonstrate that the world is governed according to *reason* – albeit according to human reason – which, by virtue of its uniformity in all human beings, *necessarily* produces the same outcomes for all. This is about as dogmatic as anyone could get. It is also to subsume the *sensuous* under the *rational* without the rather tiresome need of examining the *sensuous* or to see if it conforms to our understanding of the world. Marx was clearly troubled by this tendency on the part of Hegel, a tendency which, after Hegel's death, became all-pervasive as 'right-wing' Hegelians gladly conscripted Hegel into the panoply of those theologians who sought to provide a rational justification for Christian scripture and doctrine. This relationship between the sensuous and the rational will return not merely here in Marx's commentary on the Greek atomists but in subsequent early writings and, eventually, will surface as the epistemic and ontic justifications for the need to adopt a communist, or communal, form of society.

What is this 'fate' from which, for Epicurus, the atom must escape? It is clearly the 'fate' which awaits the atoms as a mere *element*, as a 'point' in the line of declination. For the Greeks, a 'line' was a composite of a series of 'points'. If the atom is reduced to a mere 'point', to nothing more than one more *element* in a 'line', then the atom will lose its distinctive being in its own right. Even the 'last point' in a line is still a 'point' and, as such, is indistinguishable from all other 'points'. Unless the 'atom' can be given some distinctive of its own, it must be swallowed up in the determinism which is the path – the 'line' – which it subscribes as it falls. If for Democritus, the 'atom' is reduced to a mere *element* in his system, he must look outside this 'atom' to discover the *principles* which governs it. These *principles* are to be found in *pure reason alone*, in other words, in the pre-ordained nature of the world, a nature presumably ordained in the heavens by the gods.

The 'atomism' of Democritus offers no escaped from the 'rule of the gods' and the atom is bound by something *external* to itself, it is a *passive element* to be ordered and structured according to laws which lie outside of its own nature. For Democritus, it is the 'fate' of the atom to *surrender* to this external conditioning. For Epicurus, and for Marx, this reduction of the *element* – in the case of Epicurus, the 'atom', in the case of Marx, the 'individual

human being' – to nothing more than a tool of something exterior to itself is deny both the 'atom' and the 'human being' its intrinsic individuality. Only by making the 'atom' deviate from the 'line' – even if this deviation is only a 'pulsing' of the atom – is it possible to give not merely an identity to the 'atom' but also to make the 'atom' in itself a *principle* which will govern it as an *element*. The real advance made by Epicurus lies in this willingness to combine *principle* and *element* in a single entity such that what is combined as an *element* is combined freely as a consequence of its own inner nature. This conception of individuals atoms freely combining according to the dictates of their own inner natures is something which will re-surface in a different form when Marx moves away from Greek physics and turns his attention to the 'fate' of man in society.

The path of Epicurean offers Marx a means to escape from this determinism. While for Hegel the only freedom available is to surrender to the 'necessities of existence'. This simply will not do for Marx. He sees in the *materialism* of Epicurus, and particularly in his conception of the *sensuous*, a means by which to avoid this unpalatable conclusion. Unfortunately, it is at this point that there is a break in the manuscript, with the two sections following – those concerned with an exposition of the general relationship of the philosophy of Democritus to that of Epicurus – missing. Unless we are willing to enter into the realms of unsupported conjecture it is not possible to know exactly how Marx sought to develop his argument further, though no doubt he did so. All that we have is the conclusion which Marx reaches with respect to physical phenomena in the respective doctrines of Democritus and Epicurus. For Democritus reason must lead us to embrace what Marx terms *real possibility*, which is a determination of the:

circle of conditions, reasons, grounds, etc., through which all necessity is mediated.

In contrast, Epicurus adopts *abstract possibility* as his guiding principle, for *abstract possibility* is the exact opposite of *real possibility*. The difference between the two is made clear by Marx in a terse remark:

Real possibility seeks to ground objects in necessity and reality; *abstract [possibility]* is not concerned with the object it seeks to explain, rather [its is concerned] with the subject that explains. For the subject, the object need only be possible, [be] conceivable.

Abstract possibility is not concerned with whether the explanation it proffers applies to the object it seeks to explain or not. Unlike *real possibility*, which must seek the 'truth' about the how and the why of objects, *abstract possibility* is willing to grant free reign to human imagination; all that matters is that the explanation arrived at suits me. In short, Democritus is made a determinist by his *reason*, while Epicurus remains free within a happy rela-

tivism in which his *imagination* is granted full scope. (*Imagination*, of course, represents the inner *sensuous* capacity of the human mind.)

At this point there is a *lacunae* in the text and we are regrettably left with little option but to move on to consider Part II of the manuscript. In this section Marx will seek to present his detailed analysis of these two now quite distinct philosophers and philosophies.

PART II

ON THE DIFFERENCE BETWEEN DEMOCRITEAN AND EPICUREAN PHYSICS IN DETAIL

CHAPTER ONE

THE DECLINATION OF THE ATOM FROM THE STRAIGHT LINE

Democritus and Epicurus hold two principles in common: a) that *atoms fall in a straight line* and b) that *atoms mutually repel each other*. The third principle, c) that *atoms can deviate from a straight line*, is held only by Epicurus and serves to distinguish his philosophy from that of Democritus. The problem is, of course, how we are to account for what it is that Epicurus means by: 'a deviation from a straight line'? Are we to presume that 'atoms' are unaccountably prone to wander from their allotted pathways whenever the fancy takes them?

Marx's problem then is to account for what Epicurus means by saying that the atoms 'decline' from the straight line. Is this 'declination' pre-ordained, which is to say, is this 'declination' caused by something outside of the atom, or is this 'declination' a consequence of the atom's own nature? This is the question which Marx sets himself to answer. In answering it Marx will have recourse to Hegel's categories of logic and to the necessity for something from which he never wavered throughout his life – as much as this will come as a surprise to those who have failed to read and understand him – for Marx will assert that the first *necessary* condition for the existence of anything is its *individuality*. This *individuality*, moreover, must, he says, '*be actually, positively, established*'. In other words, following Hegel, Marx believes that before it is possible to have a collective of individuals it is first necessary to constitute each individual as an *individual*. Then, and only then, will it be possible for individuals to become part of something greater than themselves without losing thereby their own unique identities. As we shall see, this is a damning indictment against all those who – whether of the 'left' or the 'right' – wish to deny individuals in any communistic society their own unique and distinctive individuality as separate beings.

What follows will be of enormous importance in understanding how Marx conceived a future communistic society. If that society seeks to function in such a way as to reduce everyone to an indistinct member of a 'collective mass', then it will be denying the very first *principle* of Marx's philosophical outlook. As a dialectician, Marx does not regard *individuality* and *collectivism* as irreconcilable opposites. Rather, his concern will be how to achieve an accommodation of one with the other. For the present we are dealing with the material atom, in other words, with immediately present being in the form of

the physics of Epicurus. Let us concentrate our attention on how Marx seeks to save Epicureanism from the charge of *determinism* on the one side and a wayward *randomness* on the other.

The Greeks thought of the atom as *falling* in a *straight line*. This idea is natural enough but the movement of the atom could as equally well have been a movement around a *circle* or an *ellipse*. Indeed, given the Greek preference for a movement in a *vortex*, a circular movement is by no means improbable, even according to their physics. Marx conceives the atom of Epicurus as seeking, at all points, to preserve its identity and not to become lost or merged in the identity of the myriad 'points' of a line. This preservation of identity will eventually lead Marx to postulate the movement of Epicurus – the declination from the straight line – as a 'vibration' of the atom. Clearly it is only in so far as the atoms are distinct individuals that they can 'meet' and form larger bodies. Again, only in so far as the atom is able to preserve its individuality can it have a relation to another atom. Consequently, only in so far as each atom avoids becoming subsumed in the 'points' of the line they supposedly subscribe is it possible for them to combine. This act of self-preservation is an act of 'repulsion', because what is being *repelled* is the atom's absorption into another medium, namely, into the line. Marx goes on to assert something of considerable significance for his later philosophy:

When I relate myself to myself as to an immediate-other, then my relationship is a material one.

We have here the first definition of what Marx understands by the concept of *matter*. He certainly is not thinking in terms of the modern understanding of the term as a 'material substratum of the physical world'. Nor is he even thinking, as we shall see, in terms of Aristotle's definition of *matter* as that which supports something else, in Aristotle's case, Form.³³³ For Marx, I enter into a *material* relation with another thing when my relation to that other thing is *immediate* as opposed to *mediated*. *Immediate relations* are *material relations* for Marx, while *mediated relations* are *conceptual relations* because these require a 'medium', namely, a *concept*, by means of which the relationship between the one and the other is effected. Marx transposes this relationship into social terms, which he does in a single short sentence:

Thus man ceases to be a product of nature only when the other being to which he relates himself is not a different existence but is itself an individual human being, even if it is not yet mind.

³³³ This will suffice for the present though, strictly speaking, it is not true. For Aristotle one Form can act as *matter* to another Form, so the Genus is *matter* to the Species which it contains. Even so, the dominant use of the term *matter* in Aristotle is associated with what he calls Primary Matter, namely, the ineffable, unknowable substrata by means of which Forms are supported and upon which Forms move progressively from mere *potential* to full *actual*.

In other words, only in so far as I am not purely a creature of nature am I an individual human being. If I am wholly subsumed by nature, I have no individuality because my 'I' has no *content* which is different from the content of any other natural being. One cow is the same as another cow, and even if farmers are inclined to give their cattle individual names, and to regard them as being different temperamentally, one cow can only relate itself to another cow according to its innate animal nature. Marx goes on to say:

But for man, as man, to become his own real object, he must have crushed within himself his determinated being [*Dasein*], the power of desire and of mere nature.

We have now arrived at the first moment of *self-consciousness*, the 3 moments of which Marx has already asserted to be Epicureanism, Stoicism, and Scepticism. The philosophy of Epicurus has now provided us with the first of these logical 'moments', namely, the idea of Repulsion. Marx now asserts:

Repulsion is the first form of self-consciousness, it corresponds therefore to the self-consciousness that grasps itself as [an] immediate-extent, as abstract-individuality.

Only in so far as I am able to *repel* that which seeks to dominate me is it possible for me to become something distinctive in my own right. At this level, *self-consciousness* – which is to say, at the level of the first awareness that I am a consciousness being who is consciousness of myself as *separate* from the world – I achieve the satisfaction of recognising that I am a distinct entity with its own will, requirements, and so forth.³³⁴ This no animal will ever achieve. Later my *repulsion* may take the form of a rejection of what is imposed upon me socially from without, a phenomenon known to the parents of virtually every teenager. This act of rebellion, of *repulsion*, is of vital importance, because only through it does it become possible for me to posit myself as 'this' individual and so to have the indispensable basis by means of which alone I will be able to develop myself into a distinctive personality in its own right.

Marx concludes that, by introducing the 'declination' into the definition of the atom, Epicurus transforms the whole realm of the atom. For Epicurus, by

³³⁴ At some stage a small child will begin to develop a sense of their own innate will, and desire to formulate some end or purpose to be achieved. In many children this occurs at the 'terrible twos', when a child first discovers its will and finds the frustration of the same hard to accept, with the usually voluble protests which follow. But, as Hegel and Marx recognise, this assertion of myself in opposition to others is a fundamental and indispensable stage in the process of my becoming a healthy adult. We shall meet it again the form of 'free labour' and its educative influence on, and importance for, mankind.

including in the definition of the atom not merely a material moment but also a formal moment, the atom is made self-governing. It is now something in its own right, a true *individual*, as opposed to constituting a purely *materially* determined body as it is for Democritus. Furthermore, Epicurus rightly grasps that the category of Repulsion has a fundamental part to play in the definition of the atom, for Repulsion is combined it with the *possibility* of Attraction and so with the unification of atoms one with another – for which read: man and wife, and citizens in a common society. Marx sees Epicurus as restoring to the definition of the atom the duality of a tension between *repulsion* and *attraction*, one which pervaded much of Greek thinking about the physical world. Finally, Marx chides Democritus for only conceiving Repulsion in terms of a physical material force and so failing to grasp the wider significance of the idea as something which can be used to delineate the *individuality* of social actors as much as the separate components of the material world – of man, as much as of the atom. Certainly, according to Marx's way of construing the contribution made by Epicurus to Greek thought, the essential ingredients for a dialectic of the atom are now present – the *positive* and the *negative* and a *synthesis* of the two within a single, unitary whole: the atom.

CHAPTER TWO

THE QUALITIES OF THE ATOM

In this chapter Marx will consider the qualities inherent in the atom in somewhat greater detail. It may seem incongruous to describe what, of necessity, must be everywhere the same as possessing qualities, at least beyond those qualities necessary to describe an atom – spherical, hard, and very small. Marx rejects this assertion, stating, in stark contrast, that atoms must indeed possess distinctive qualities of their own, an assertion for which he will seek to demonstrate the necessity.

Unfortunately, Marx's text shows signs of being hastily composed. Marx's claims are not fully explicated and we are left, to some degree, to read between the lines. Moreover, Marx makes a simple mistake of terminology which it will be necessary to explicate so far as this proves possible. I shall begin with what Marx has to say about Democritus because here he is at his clearest.

According to Marx, Democritus only ascribes qualities *externally* to the nature of the atom itself:

Democritus considers the properties of the atom only in relation to the formation of the differences in the world of appearances, and not in relation to the atom itself.

Marx uses 3 terms, each relating to a recognised Greek term. These are: *Rhysmos* – shape, *Diathige* – arrangement, *Trope* – position. Aristotle provides a clear definition worth quoting:

That is, A differs from N in *shape*, AN from NA in *arrangement*, Z from N in *position*.³³⁵

A and N are clearly different *shapes* as letters, AN and NA are *arranged* differently – but we should note that 'arrangement' requires a minimum of 2 elements in order to be defined – while Z and N are different in *position* in respect of the alphabet – which again requires, by implication, a wider context within which Z and N are to be located. Of these 3, therefore, the only one which might apply to an atom *per se* is that of 'shape'. The German term Marx uses for 'shape' is *Gestalt*. In turning to Epicurus, Marx asserts that Epicurus was concerned with qualities which apply to the atom directly and individually, therefore *intrinsically* rather than, as with Democritus, *extrinsically*. This difference is certainly predicated upon the distinction which Aristotle made between what is of the *essence* – or being – of a thing and that which is an *accidental* attribute of a thing – which is to say, an attribute

³³⁵ The italicisation has been added by the translator for the purpose of emphasis.

which adheres to a thing but is not itself a *part* of that thing, therefore an *incidental* part of its being.³³⁶

Marx's ascription of the quality of *shape* to the atomic theories of Democritus and Epicurus is perfectly consistent, provided that Marx is thinking in an Aristotelian manner. Unfortunately, Marx does not make this clear but, in what he does say, we have strong implicative grounds to presume it to be the case. The sentence in which Marx comes closest to clarifying this question is where he speaks of the ascription by Democritus of qualities to the atom:

Size is an accidental determination which is already given to the atoms, together with shape.

For Epicurus, atoms have a variety of *sizes* but they do not have *every* size, they are indefinitely small, but not a minimum, for then they would be reduced to a spatial point. Democritus, on the other hand, is supposed to have regarded atoms as possessing all possible *sizes*, even as large as planets. Whereas the testimony of Epicurus on the *size* of the atom is to be trusted, that of Democritus is, according to Marx, contradictory, for Aristotle asserts that the atoms of Democritus, like those of Epicurus, are all invisible to the human eye. As to *shape*, a similar confusion applies. For Epicurus atoms have a variety of *shapes* but not an infinite variety, whereas for Democritus atoms are possessed of just such an infinite variation with respect to *shape*. It is clear that Marx regards Epicurus as considering the problem of the atom from the point of view of a rational determination of their *principle* whereas the consideration of Democritus does precisely the opposite, which is to say, it ignores the *principle* of their constitution and organisation, and concerns itself purely with the materiality of the atom, treating each atom as an object to be determined by its *sensuous appearance* rather than being governed by any internal necessity which is *rationally explicable*. If we do this, which is to say, if we have no fixed definition of the extent to which atoms may vary in *size* or *shape*, we are left with as many variations as there are atoms, no two can every being alike. The following short, unfinished, passage was deleted from the manuscript by Marx but it is nevertheless worthy of quote:

Epicurus therefore has here also objectified the contradiction, while Democritus, only considering the material side, does not show in the further determination any consequences of the principle ...

³³⁶ The colour 'green' is not an essential part of the definition of a 'leaf' because leaves can be a variety of colours, and the leaves of deciduous tree change colour with the season. In defining a 'leaf' therefore, the colour 'green', as a quality applicable to it, is not part of the *essence* of a leaf, because it does not constitute an *intrinsic* part of the *being* of a leaf. Consequently, the colour of a leaf can only be *accidentally*, or *incidental*, connected, as a quality, with a leaf.

For Epicurus, atoms cannot vary infinitely in themselves; they can only be infinite in respect of their number. The opposite seems to be the case with Democritus, at least in so far as contradictory statements about his physics permit us to arrive at any determination of the question.

Marx turns to consider the application by Epicurus of the quality of *weight* which Epicurus also ascribes to the atom. Surely, *weight* is something *external* to the nature of a thing and so not an *intrinsic* constituent of its definition. After all, one human being can weigh twice as much as another, and can, and does, vary in weight by different amounts during their lifetime. How then is the quality of *weight* to be regarded as an attribute of a thing, which is to say, as a part of its *intrinsic essence* rather than constituting an *extrinsic accident* which pertains to the thing in varying degrees, at various times in its existence? As Marx notes:

it is highly important that Epicurus makes the *third* quality *weight*, for, in the centre of gravity, matter possesses the ideal individuality which constitutes a principal determination of the atom.

For Epicurus, each atom is itself a centre of gravity and, as such, may be said to affect itself as much as it affects other atoms. Even so, Epicurus tends to restrict the use of *weight* in respect of the atoms as a means of comparison between them. This Marx takes to mean that while we can compare the *weight* of one atom with that of another, and while we accept that different atoms can have different *weights*, there is no standard *essential weight* which each atom must have. Today, by means of the periodic table, we are able to determine the *weight* of atoms in respect of the number of protons and neutrons each contains within its nucleus. We too accept that there is no *standard weight* for atoms, but only a *standard weight* for atoms of each of element. We are not as far away from Epicurus as we might imagine. From our modern point of view, Epicurus is quite correct in ascribing *weight* as a quality which is *intrinsic to* or part of the *essential nature of* the atom, and we, likewise, ascribe variations in these *weights* to variations in the kind of atoms that exist. This, Democritus was unable to do.

In conclusion, Marx asserts that Epicurus has determined both the nature of the *existence* and the *essence* of the atom, for he has ascribed qualities definitive of both states to each atom. Thereby, Epicurus has provided us, says Marx, with a 'science of atomistics'. On the other hand, Democritus merely asserts the *existence* of the atom and provides no definition of its inner nature.

This conclusion is fundamental, as the will become evident in the remaining section of the thesis. At this point, we should step back and review what it is that Marx's has concluded. Here exposition ends and interpretation begins.

If we abstract what Marx has to say about each Greek philosopher, we can construct the following schematic for each according to how each perceives the *existence* and *essence* of the atom. In doing so, we should bear in mind

that Marx does not believe that Democritus ever managed to establish either a consistent *existence* or *essence* for the atom.

For Democritus, the *existence* of the atom is founded upon: *reason*, *necessity*, and *extrinsic qualities*. For Epicurus it is the opposite: *sensation*, *chance*, and *intrinsic qualities*. As to the *essence* of the atom, Democritus emphasises: *repulsion*, *immediacy*, and *materiality*, while Epicurus emphasises: *repulsion* (and presumably its opposite in Greek thought – *attraction*) *mediation*, and *form*. Democritus looks for the *existence* of the atom with *reason*, while Epicurus looks for it with *sensation*. The same problem exists in respect of the *essence* of the atom; Democritus looks to the superficial to be found in *sensation* and Epicurus looks within to what may be determined by *reason*. Clearly, given this general schematic, for Marx, Democritus has the matter the wrong way round, while Epicurus has the matter correctly formulated.

With respect to *essence*, we can establish a *formal*, *conceptually meditated idea* of the atom by means of *reason*, for if *reason* has any claim to provide us with knowledge about anything it must surely be in respect of the ‘inner nature’ of a thing.³³⁷ As to the *existence* of the atom, surely this too must be determined in accordance with the appropriate form of knowledge, namely, *sensation*, for the existence of anything is given to us directly, or immediately. This classification on the part of Marx is certainly Aristotelian in its inspiration. Marx will go on to examine the nature of the atom in accordance with explicitly Aristotelian presumptions. If we bear in mind what Marx has already asserted, we shall be in a better position to follow his thinking in the concluding part of his thesis.

³³⁷ Strangely, this was Kant’s position while he was still under the influence of Leibniz prior to his ‘critical period’.

CHAPTER THREE

ATOMOI ARCHAI AND ATOMA STOICHEIA

The fundamental dichotomy behind what follows is given in the title of the chapter, namely, that between *indivisible principles* and *indivisible elements*. Aristotle held *principles* and *elements* to be distinct, for where *principles* were to be determined formally, that is to say, by means of reason, *elements* were the material ‘stuff’ that composed the world and, as such, different manifestations of the Primary Matter upon which the world was based. The use of the terms *Atomoi archai* [*indivisible principles*] and *Atoma stoicheia* [*indivisible elements*] by Marx clearly relate to *arche* [*principles*] and *stoi-cheion* [*elements*] in Aristotle.³³⁸ The distinct was also adopted by the Stoics, who regarded *principles* as eternal and *elements* as transitory, for the latter but not the former could, and would, be destroyed at the world’s end. Epicurus, according to Marx, adopted this Aristotelian distinction for himself. Naturally enough, from the above terms, it might be thought that we have before us two distinct kinds of atoms – one relating to *Atomoi archai* and the other *Atoma stoicheia*. Marx is quick to dispel any such misunderstanding:

It is just as difficult to pass from the *atomoi archai* to the *atoma stoicheia* as it is to ascribe properties directly to them. Nevertheless, I do not deny such a differentiation entirely. I only deny that there are two different and fixed kinds of atoms. They are rather different determinations of one and the same kind.

We have but a single atom which, henceforth, will be regarded according to two distinct criteria. Before beginning his analysis, Marx mentions one unfortunate tendency on the part of Epicurus, namely, to reify his concepts, and so to treat them as if they were ‘different independent existences’, each with its own definition and, presumably, with its own distinct referent. This tendency, which itself is atomistic in orientation, is hardly surprising in Epicurus because his whole thinking seems to have been arranged around the isolation of physical and rational *existents* – *objects* and *ideas* – rather than any attempt at a *synthesis* of the same. As Marx rather acerbically remarks:

by bestows different determinations of form on different existences, one does not gained thereby an understanding of their differences.

The problem with the *concept* of the atom is the inherent contradiction which appears to exist between its *matter* and *form*, or between its *existence* and *essence*. According to Epicurus, the atom, and how we conceive of it, is

³³⁸ Aristotle, *Metaphysics*, IV, 1 and 3.

the *absolute*, by which Marx here means what Hegel means by the term *absolute*, namely that which is limited by nothing other than itself. The atom is the *principle* of everything, it is the foundation of all that exists, and it is the only truly self-subsistent form of being, for all other being is dependent upon the atom as its material base. The atom alone has its *concept* and its *being* in itself – which is to say, the atom *is* how it is *conceived to be*. All other things may have their *concept*, for example, that of a person, or a house, but the being of such entities is dependent upon the atoms which compose those entities. The atom alone has its *being* and its *concept* in the same thing. Yet it is the fate of the atom never to appear in the world. It never becomes an object for us, it is never perceived in its own right. Rather it is the fate of the atom to be the bearer of the world for others, namely for Forms. These Forms are *externally* imposed upon the atoms which, in their turn, constitute the *material* condition for the worldly *existence* of these Forms. Consequently, that which is unlimited in itself – which is plastic and capable of accepting any *form* imposed upon it – is reduced to an unknown and unknowable substratum. As Marx notes:

This absolute form has now been degraded to absolute matter, to the formless substrate of the world of appearance.

Marx goes on to conclude that it is the fate of the atom to become merely something *material* and to have no *formal* existence of its own:

Abstract individuality is freedom *from* existence (*Dasein*), not freedom *in* existence (*Dasein*). It cannot shine in the light of existence (*Dasein*). This is an *element* in which this individuality loses its character and becomes material. Consequently, the atom does not enter into the daylight of appearances, or it sink down to the material basis when it does enter [into] appearances.³³⁹

Is Marx here speaking purely of the atom, perhaps! But we should bear in mind that eventually he will constitute the working-class in capitalist society according to very similar criteria! The working-class is ‘abstract individuality’ for everything comes *from* labour; labour too is a *plastic* that can be shaped and so *shape* and *form* other things, and yet the bearers of labour in capitalist society, the working-class, have no *formal* recognition and no acknowledge *appearance* in bourgeois society! The proletariat, like the atom, are the foundation of all, and yet they are denied any *form* of their own in bourgeois society. Abstract individuality, as Marx notes, can only find its freedom *outside* existence not *in* existence, and just as much as this is the fate of the atom, so too it is the fate of labour in capitalist society. Goods are pro-

³³⁹ Italicisation is by the present translator for emphasis. This is highly Hegelian, and the contrast between ‘freedom *from* existence’ and ‘freedom *in* existence’ should be particularly noted.

duced and sold, but we never see the producer any more than we see the atoms which constitute the material basis of the goods bought. The atom is an *element*, the worker is an *element*, and both lose their distinctive character and identity and are reduced to being the *material* base, or support, for others.³⁴⁰

³⁴⁰ According to the definition of *matter* presented here by Marx, it is not capital or machines which are the *material base* of bourgeois society, it is the proletariat, upon whose labour bourgeois society is constructed.

CHAPTER FOUR

TIME

Marx turns to consider the concept of *time*. The previous analysis excluded the concept of *time* from the world of *essence*, that is, from the world of objects as they are constituted in themselves. Time has been reduced to a *phenomenon* purely related to *appearances*, in other words, to how the atoms present themselves in the world as the material base for objects. Whereas Democritus ignored the concept of *time*, Epicurus embraced it. If Democritus, at best, makes the concept of Time a condition of the perceiving subject – as Kant was in the German Enlightenment – it is no longer ‘contiguous’ with the world. Epicurus, according to Marx, makes *time* dependent upon the *accidens* of the *accidens*, which is to say, upon the reflection of change *back into itself* as ‘pure change’, or the process of change itself as opposed to any particular instance of change. By making *change* the characteristic basis of appearances, Epicurus lead us back to the *essence* of the object undergoing this *change*, for *time* is the ultimate destroyer of all things which *exist* and so the ultimate destroyer of the *essence* of those things – unless, of course, we adopt, as Marx does not, a Platonic view and regard the Forms as eternal.

From this Marx deduces 3 conclusions with respect to Epicurus: 1) that *time* is the distinguishing factor between *essence* and *appearance*, being the *active* aspect of the latter, just as *space* is the *passive* aspect of the former; 2) *form* and *appearance*, *essence* and *existence*, are made distinctive and separate by Epicurus, and *time* is made the one true empirically observable *essence* of appearances, or, as Marx calls it, the ‘fire of essence’; 3) because *time* is only to be intuited in respect of *appearances*, it cannot be known *rationally*, but only *sensuously*. *Sense perception* is therefore the ‘real criterion of nature’, for through *sense perception*, and the *time* in which the things which exist are sensed, nature comes to be actually what it is potentially, or *sensuously* what it is *rationally*, or yet again, it becomes *materially* what it is *formally*. Marx declares *time* to be sensuously embodied in human sensuousness:

Human sensuousness is therefore embodied *time*, the existent reflection of the sensuous world into itself.

More importantly, Epicurus has established an *objective* basis for sense perceptions, while Democritus relegates such perceptions to a *subjective* status. This is of vital importance for Marx, for it re-affirms the Aristotelian position that *perceptions* are not merely aspects of each separate individual’s awareness but rather present a true, stable, and inter-subjective picture of the world as it appears to be. Marx engages – perhaps tongue in cheek – in a little Greek speculation about the nature the *images* – the *eidola* – which we receive from objects. Here he becomes rather poetical, a tendency which, at times, he found it hard to suppress. He speaks of the *eidola* as another ‘skin’

which, by constant presentation of themselves to our senses, 'dissolve themselves and pass away'. I doubt that this flight of fancy needs to be considered with any great seriousness. As we well know, material objects in the world of appearances eventually pass away. But as an explanation of why it is that objects wear out, it remains on the poetical side.

Marx's overall conclusion, however, is sound: in the world of *existence* and appearances it is to the senses that we must look to gain a true *presentation* of the nature of the *objects*, while in the realm of *essence*, of that of Forms, it is to *reason*, and reason alone, that we look to present us with a true *knowledge* of the nature of *things*.³⁴¹

³⁴¹ There is more than a little here that is Kantian before his critical period, which is to say, a view that harks back to a Leibnizian conception of the role of reason in human knowledge. The underlying point is, however, sound. The tree in my garden is an individual tree, one which is unique as a specimen of the great family of trees. I can only know it as an object through my senses, but as to the true nature of trees as a species, I must trust to reason to provide me with knowledge.

CHAPTER FIVE

THE METEORS

Marx concludes his thesis by a consideration of the nature of the Meteors. All heavenly bodies were regarded by the Greeks with awe, no doubt for the same reason that they impressed the ancient Egyptians, for many heavenly bodies do not appear to change and so seem eternal. It is at this point that Marx is at his most scathing and his most metaphysical. Epicurus, according to Marx, took a stand against the dominant view of the Greeks that the heavenly bodies are divinities in their own right. According to Aristotle, the Greeks assigned the name *ether* to the heavens from *thein aei*, meaning 'to run always'. In other words, the heavenly bodies always have, and always will, follow the same course across the heavens.

For Epicurus, the meteors are not to be accounted for in one way but rather there may be many accounts that will provide an explanation for their phenomena. For the second time, Marx makes an elementary mistake, stating that the meteors should not be explained in one way, as with Aristotle, and that they are not subject to the 'law of gravity'. Aristotle, of course, did not have a 'law of gravity', nor did anyone else until Isaac Newton. Even so Marx can be forgiven this slip, for his point remains valid, namely, that the heavens cannot be accounted for by a single, simple explanation, nor should we regard them, as Epicurus warns us against doing, as eternally uniform and unchanging. In doing so, Epicurus noted a deep inconsistency in Greek thinking. The heavenly bodies are supposedly governed by eternal laws, and yet the Greek regard the appearance of heavenly bodies, such as meteors, as portends of danger and calamity on earth. If the heavenly bodies are divine, why should our tranquillity, our *ataraxy*, be in any way disturbed by what we see in the heavens, for surely no injury can come from bodies which obey divine laws and run eternally on their way as they have been pre-destined to do from the beginning of time? Epicurus notes:

Because the eternity of the heavenly bodies would disturb the *ataraxy* of self-consciousness, it is a necessary, a stringent consequence, that they are not eternal.

For Epicurus meteors are nothing but an accidental accumulation of atoms running according to accidental motion. This, if anything, ought to disturb our *ataraxy*, our tranquillity of mind, it certainly does today when politicians air concerns about the possible extinction of all life on earth as a result of an infelicitous encounter a meteor passing the earth. But for Epicurus, the meteors are nothing more than rocks, governed by a system of attraction and repulsion between themselves, a system which confers upon them a status not dissimilar to that of the atoms themselves:

Consequently, the heavenly bodies are the atoms become actual.

Marx means more by this than may be apparent. For Epicurus, the heavenly bodies are the actualisation, or the complete realisation, of the *concept* of the atom. As we noted, Epicurus is obliged to consider the atom in light of his *reason*, because he has no means, and neither do we, to 'see' an atom itself. (We may have come closer to 'seeing' the atom than Epicurus could ever have hoped to do, but even we are restricted merely to observing the path of an atom in a cloud chamber.) While Epicurus holds that the proper means of determining an atom is *via* the senses, he is, in contradiction to his own view, obliged to make do with second best and resort to his intellect and his reason if he wishes to 'visualise' the entity. In the meteors, Marx sees the complete vindication of Epicurus's position, that is if we, and he, are inclined to regard a meteor as a large and visible 'atom'. Speaking of 'meteors', Marx goes on to state:

In them all, antinomies between form and matter, between concept and existence, which constituted the development of the atom, are resolved; in them all required determinations are actualised.

In the meteor, *form* and *matter* are reconciled, as is their *concept* with their *existence* – in other words, in the meteors *arche* and *stoicheion* are presented as united and indivisible. Yet this is a conclusion from which Epicurus shied away. Epicurus:

feels that here his previous categories break down, that the method of his theory must be different.

According to Marx, this is Epicurus's greatest contradiction, a contradiction that follows from nothing more than a failure of will and imagination. Marx concludes, on behalf of Epicurus, that:

In the celestial system matter has received form into itself, has taken up the individuality into itself and thereby has achieved its independence.

The meteors are the unity of *matter* and *form*, the cohabiting of *reason* and *sense* in a single object. In the meteors, the system of Epicurus reaches its apotheosis. But it is an apotheosis of man and not of the gods. As Lucretius says, Epicurus was not 'crushed' by the fables of the gods, not by lightening flashes, not by the 'growling menace of the skies', on the contrary, in Epicurus:

religion in its turn lies crushed beneath his feet, and we by his triumph are lifted level with the skies.

It is at this point that Marx seeks to change his emphasis and to develop the philosophical significance of what has been attained so far. According to Marx, in his science of 'atomistics' Epicurus has reached the level of *abstract self-consciousness*, which is lifted to the level of a *principle*. This is very Hegelian, for it smacks of the transcendence of the human mind over the brute otherness of nature, the single, guiding principle of Hegel's entire philosophy. Has Marx therefore sought merely to validate the Hegelian system in his doctoral thesis? Not quite! Before reaching this conclusion, Marx adds a paragraph of great significance for his future philosophical development.

If man retreats into an *abstract self-consciousness*, which is to say, into a concern for his own consciousness divorced from the world, all science and everything transcendent must fall and the 'gateway' is opened to all manner of vague imaginings and superstition. Science alone can vindicate man, and science alone must be the basis of man's approach to the world. For the Germans, the word *Wissenschaft* has a deeper significance than that which attaches to *science* in English. To the German mind, *science* is any discipline which proceeds on the basis of an accepted and pre-defined *principle* and which seeks, by the application of this *principle*, to bring order into chaos and reveal the nature of the world. In due course, the *material theory of history*, or *historical materialism* will become for Marx just such a *principle*, a *principle* moreover which enables him to claim that his theory of socialism is 'scientific' as opposed to 'ethical', or 'sentimental', or 'utopian'.³⁴²

For the present we are concerned with how Marx sought to go beyond Epicurus and to validate the role of 'self-consciousness', or the 'self-knowing mind', in his own vision of the world. At this point it is perhaps appropriate to permit Marx to speak for himself through Epicurus:

Epicurus has thus lead atomistics to its final conclusion and completion in which it becomes the dissolution of, and conscious opposition to, the universal.

Epicurus fails to be consistent, for though he has united *form* and *matter* in a single entity – the atom – he recoil from what he has done and from the *universality* which *form* implies. In consequence, Epicurus turns to the *sensuous* and to placing all emphasis upon it at the expense of *reason*. By so doing, Epicurus once again brings man under the deterministic 'domain of nature'.

To follow Marx we must wind back to an earlier paragraph:

³⁴² As I propose to demonstrate at a later date, this is not the only reason why Marx regarded his form of socialism to be 'scientific'. In a manner which, no doubt, would find favour with British empiricists, Marx sought to 'test' the validity of all 'theories' against the 'material world' by recourse to *sensuous material practice*. It is this completion of the circle of knowledge, a circle left incomplete even by the Enlightenment, that is the ultimate ground for Marx's claim to have solved the 'riddle of history'.

if the individual self-consciousness were, in reality, posited under the determination of nature, or nature posited under the determination of individual consciousness, then the determination of self-consciousness, that is, its existence, would have ceased, because only the *universal* in free distinction from itself can, at the same time, know its own affirmation.³⁴³

This is a tightly worded sentence requiring more than a degree of exposition. At the risk of repeating what has already been covered in the Introduction, I shall re-iterate the line of reasoning behind Marx's observation.

If 'self-consciousness' – thought of as the 'self-knowing mind' – were under the domain of nature, we should be little better than the animals. Our entire world would be composed of the perception of physical entities to which we should react as natural, conditioned beings. The world would not be *knowable* in any human sense, because *to know* in a human sense is an activity requiring the construction of concepts. As Aristotle demonstrated, in order to produce a 'concept' it must be possible for the human mind to 'abstract' from what is immediately present in the world and grasp what things have in common. It is this process of 'abstracting what is in common' from different instances of the same kind of thing that is the basis of all *universal* names. If, for example, I observe at a host of swans, I am able in my mind to form a general concept of 'swan', by means of which I shall be able to recognise other swans in the future.

In other words, the human mind contains an ability to 'abstract' what is *universal* – or *common* – from what is individual. It is precisely this capacity, and the language to which it leads, that enables man to detach himself from nature and raising himself above the influences of the nature. Such a view is wholly Hegelian, both in emphasis and formulation.

The question now is, how is the one – the *universal* – to be related to the other – the *individual*? Kant had distinguished between a *phenomenal* and a *noumenal* world – which is to say, between a) the world as I know it through the *senses* and by recourse to *reason* and b) the world *as it is in and of itself*. It might be thought that the *senses* are a good guide to how the world actually is, and that *reason*, deriving its concepts, as it does, from a *sensuous* encounter with the world, must, necessarily, be true to the way the world is *in itself*. But this is not necessarily the case. Think of 'colour', it is a sensation, or at least we treat it as such, but does it reside in the object or in the subject who is perceiving the object? Actually, the latter is the case. Similarly with the *principles of reason* or, as Kant was to term them, *categories of thought*. David Hume demonstrated that the idea of 'cause and effect' could not be derived through the senses by means of an observation of the world. Kant went on to adduce 12 such *categories* in 4 general areas – Quality, Quantity,

³⁴³ The italicisation here has been introduced by the present commentator for purpose of emphasis.

Modality, and Reciprocity – none of which, he argued, can be derived by a recourse to empirical observation. Their origins must therefore reside within man himself and, as such, they must constitute innate facets of the human mind. If the very foundational *principles* we employ to describe the world are mind dependent, then indeed we are left with a ‘gap’ – a veritable chasm – between our knowledge and the reality of the world. At best, all that we can say that the world *appears* to us to be such and such, but not that the world, in reality, is such and such.

This gap, or chasm, was recognised by Kant and famously enshrined in two memorable terms: the *phenomenal* and the *noumenal*. The world as it *appears* to me to be is the *phenomenal*; the world as it *really is in itself* is the *noumenal*. For Kant, all our knowledge is restricted to the *phenomenal*, or to how the world *appears* to us to be. All knowledge pertaining to the ultimate *reality* of the world as a *noumenal* realm *in itself* is denied to us. Following the publication of the *Critique of Pure Reason* in 1770, this chasm became a stumbling block in German philosophical thought. Marx, like Hegel before him, wished to find some means by which our *senses* and our *reason* may rightly be judged juridical as a source of knowledge of the *noumenal reality* of the world as opposed merely in respect of its *phenomenal appearance*. The methods chosen by Marx and Hegel to bridge this gap were different and lead to different conclusions and to different outcomes, and not merely in terms of philosophy but in regard to the nature of society, of politics, and of economics. I shall begin with Hegel.

Hegel discounted the *noumenal* aspect of the world, rejecting the world *as it is in itself* as inherently unknowable. Consequently, he holds fast to the *phenomenal* alone. By so doing, Hegel sought to transform the *phenomenal* world into the *real* world of man. But, in his desire to avoid an unknowable objective world – the *noumenal* – Hegel is in danger of falling back into a purely subjective account of *reality*. At best, he is in danger of treating *reality* as a product of nothing more than an inter-subjective agreement among human beings, even if this agreement is founded, as Hegel believes it to be, on the *a priori* constitution of the human mind. The problem with Hegel’s way of bridging the gap between *sensation* and *reason* on the one side and the *material world* on the other is that it leads, and leads inexorably, to regarding what is in common in man’s encounter with the world to be his way of ‘thinking about the world’. This resolves Kant’s problem only by abolishing it, and in abolishing it, it reduces the nature of the world to nothing more than an assemblage of ideas based up the *categories of thought* which man applies in order to understand the world. The result is an *idealism* combined with a *logicism*, in other words, the view that it is thought and logical categories

which constitute the ultimate *reality* of the world and not the world itself as a physical and material realm.³⁴⁴

Marx clearly wished to go beyond this way of thinking on Hegel's part. But to do so, he would be faced with a conundrum. To remain loyal to Kant and oppose Hegel, Marx had to retain a *noumenal* world of *reality* alongside a *phenomenal* world of *appearances*. If he was to hold to both then it would be necessary to find some means by which we, as human beings, can validate our *ideas*, our *thinking*, in terms of the material world itself. If the material world exists as something which can only be known subjectively – or inter-subjectively – by means of *sensations* and human *reason*, then we would seem to be precluded from 'testing' our *ideas*, or our *thinking*, against the *independent reality* of the world.

Given this Kantian premise of a duality of worlds: a) as it is *for us* and b) as it is *in itself*, it is clear that we, and Marx, are obliged to find some way of demonstrating a conformity, or unity, between the two. In other words, how do we relate *thought* to *being* so as to determine whether the former is, or is not, a true 'likeness' of the latter? As Marx understood, the only means by which we can *test* our ideas *against* the world is through *sensuous practice*. In short, we must seek to put our *theories* about the world into *practice* and observe the consequences. As I noted previously, it is a case of: *suck it and see!*³⁴⁵ This was Marx's great advance and his significant contribution to the German Enlightenment. To complement the duality of worlds there is a duality of human relations to the world, the one *ideal* and *theoretical* the other *material* and *practical*.

Provided that some means can be found by which *thought* and *being*, or *form* and *matter*, can be united into a single synthesis, and this unity can be checked objectively, then the *circle of knowledge* will be complete. Here Marx is taking the first step on the road to his mature conception of the unity of Theory and Practice, or *Praxis*, and, despite the need for this lengthy exposition, its nascent form is detectable here.

We shall only avoid foundering on the Hegelian rocks of Scylla – namely, reducing everything to a series of logical categories of understanding – and avoid being sucked into the Kantian whirlpool of Charybdis – the postulating a world which is inaccessible and unknowable to us – if we are able to associate the *theoretical knowledge* produce by the *head* with a *practical knowledge* produced by the *hands*. This synthetic unification of *head* and *hand*, of *heaven* and *earth*, of *thought* and *being*, of the *universal* and the *individual*, or *theory* with *practice* – style it as you will – will only to be achieved by means of dualistic approach to the world, the one in which the

³⁴⁴ Of course, such a view is highly conducive to theologians, which is why, after his death, Hegel was so readily conscripted as a defender of established religion, something which he certainly had not been when alive.

³⁴⁵ This is the opposite of what Einstein is once reputed to have joked: 'if the facts don't fit the theory, change the facts'.

mental is complemented by the *sensuous*, the *abstractive* and *mediated* complemented by the *direct* and *immediate*. By this means alone will the *circle of knowledge* will be complete and the *riddle of history* be solved.

I stated above that in seeking to avoid Hegel's trap and Kant's dilemma there would be social, political, and economic consequences. In his doctoral dissertation, Marx establishes the need for a unification of two kinds of knowledge, the one *theoretical*, the other *practical*, the one *idealistic* the other *materialistic*. Only by this means will *principles* – the *arche* – which govern *elements* – the *stoicheion* – be brought into alignment in a single, unitary entity. For Epicurus this entity was the *atom*, for Marx it will be *man*.

It was not to take Marx long to realise that such a unification of *theory* with *practice* is not to be achieved in bourgeois society. In that society, the *head* and the *hands* are divided, with each being assigned to its own social class, the one as the *masters* the other as the *servants*. Moreover, each of these classes exists in an antagonistic relationship with the other. As Marx was soon to discover: in bourgeois society mankind is divided into two at the neck!

CONCLUSION TO THE COMMENTARY

Before concluding this commentary it will be valuable and instructive to review the most salient features of the conclusions to Marx himself came. These I shall list in order of their appearance his doctoral thesis. As has become evident, there is a common theme running through the whole of Marx's analysis, namely, the right use of *reason* and *sensation* as sources of knowledge and the means by which these two distinct means of knowing are to be reconciled.³⁴⁶

- 1) *Rational Knowledge and Sensuous Knowledge*: Epicurus holds, in contrast to Democritus, that *sensuous knowledge* has as much a part to play in determining the nature of the atom as *rational knowledge*. Epicurus does so despite the fact that *sensuousness* cannot provide us with any *immediate knowledge* of the atom, for atoms are too small for us to see, or to experience by recourse to any of our senses. Even so, whereas for Democritus *sense* and *reason* stand opposed, for Epicurus they are capable, at least potentially, of being brought into alignment.
- 2) *Arche and Stoicheion*: Epicurus, like Aristotle before him, regards both *arche* – principles – and *stoicheion* – elements – to be fundamentally distinction both in the world and in our knowledge of the world. Moreover, he consciously seeks to establish the 'atom' dualistically, both as a *principle* and as an *element*. By so doing, Epicurus will establish the possibility of the atom uniting with other atoms by its own 'choice', in the sense of doing so on the basis of what is innate within it and so not imposed upon it from outside.
- 3) *Dogmatism and Scepticism*: Democritus is the *rationalist* and, by implication, a *dogmatist*. As a matter of fact, he is the opposite of this, for he is a *sceptic* who is unable to 'prove' his assertions about the world. On the other hand, Epicurus as an *empiricist*, and so, supposedly, a *sceptic* is able to use his *reason* to provide himself with a system of *dogmas* – a system of warranted beliefs – in regard to the nature of the world and the influences at work in it. The two philosophers are the inverse of one another and themselves.
- 4) *Real Possibility and Abstract Possibility*: For Democritus the world is a system of *real possibility* wherein is to be found a single true

³⁴⁶ To facilitate an ease of comparison between the terms listed, I shall always present the *rational* term first and the *sensuous* term second. This does not indicate any preference in respect of one 'way of knowing' over another, either on Marx's part or my own.

explanation for each event. For Epicurus, our knowledge of the world is based upon *abstract possibility* and, as such, while Democritus is reduced to an improvable *dogmatism*, Epicurus seeks a *pragmatic* explanation for his perceptions wherever such explanations are to be found.³⁴⁷

- 5) *Mediated Relation (Ideal Relations) and Immediate Relations (Material Relations)*: When I relate myself to the world by the means of *sensation*, my relation to the world is an *immediate* one, a relationship which Marx defines as a *material relation*. The obverse is the case with *mediated* relations, which, of necessity, are *ideal relations* because they are by means of *concepts* standing intermediate between ourselves and the world.
- 6) *Form and Matter*: While Democritus is never able to reconcile these two opposing aspects of existence, Epicurus has no difficulty doing so. For Epicurus, the *formal* definition of the atom is the basis of the atom's material possibility of combining with other atoms in order to create larger bodies. In the *Meteors*, the small indivisible 'atoms' of Epicurus raise themselves to the world of visible objects, and in the *Meteor* the *formal* nature of the atom and its *sensuous* presence as the basis of all perceptions are brought into alignment. In the *Meteors* we see what the 'atom' would be for us were we able to perceive it visually. This 'unity' of *form* and *matter* is the fullest vindication of Marx's Aristotelianism as opposed to the essential Platonism of Democritus. While Democritus must search the heavens for an understanding of the rational construction of the world, Epicurus – and with him Marx – is happy to find, in the manner of Aristotle, the *theory* of the atom confirmed in *practice* by the *immediate perception* of objects in the world, the archetypal instance of which is the *Meteor*. While Democritus remains forever subservient to the gods and seeks to share in their knowledge, Epicurus disposes of the heavens and brings knowledge down to the level of the human and the earthly.
- 7) *Abstract individuality (Abstract Self-consciousness) and Universality*. The mind which, *qua* Democritus, retreats inside itself in search of an explanation of the world is a mind which retreats into a realm

³⁴⁷ A percipient reader will realise that *Abstract Possibility* is as much a rational form of knowledge as *Real Possibility*. Even so, because *Abstract Possibility* seeks for explanations 'in the world' as much as by 'pure reasoning', it may honourably be accorded a place alongside *empirical sensation*, at least for the sake of this summation. The same caveats apply to point 7 below.

of dreams and into an individuality which is detached from the world. Opposed to this is the mind which seeks to validate the *universal* in all things, a mind which is guided by the nature of the world itself. It is a mind which can *abstract* from the world what is *formal* and which is capable of constructing *rational hypotheses* about the nature, the causes, and the laws which govern the world. This distinction is fundamental for Marx, not merely because it was to be of service later, but because of the difference in orientation to the world which it implies. Do we, with Plato, contemplate the heavens or, with Aristotle, contemplate the world?

Marx makes the difference between *sensory knowledge* and *rational knowledge* the basis of his differentiation between the philosophies of nature of Democritus and Epicurus. Democritus was unable to establish a distinction within the nature of the atom between the atom as *principle* and the atom as *element*. Yet this distinction, both then and now, is vital, because if the world is constituted by atoms, then we have to find some means by which we can move from a *formal* definition of the atom to the means by which they are able to combine and produce the world. As Marx notes in his exposition, the *formal nature* of a thing is what it is *in itself*, apart from any relations it may have to other things. Its *material relation* is the opposite, namely, its relation to things other than itself. Each atom, as a *form*, is independent, but each atom as an *element* is related to other atoms. By granting the atom the ability to deviate from a straight line – even if this deviation is almost imperceptible, a mere pulsation – Epicurus established a means by which, out of its own constitution, the atom can combine with other atoms. Today, we regard this ability of one atom to combine with another as self-evident, and refer to it in terms of the valence of the atom, namely, the ability of the atom to share one or more electron. Such bonding processes are well understood, but they could only be arrived at in ancient Greece through the medium of thought.

We should add that, if nothing else, Epicurus provides both a *logical* and an *ideal* definition of the atom. That he did so in regard to the same body – the atom – is irrelevant, for he demonstrated the possibility of treating the atom in two distinct ways. As a formal, or *ideal principle*, the atom deviates from a straight line, as a *material element* it combines with, or repels, other atoms. This is the real significance of the adoption by Epicurus of the Aristotelian distinction between *arche* and *stoicheion*.

By granting the distinction between the atom as a *principle* of organisation and as the *element* which is organised, Epicurus passes beyond the realm of the gods; for, according to the inner logic of his physics, the gods are no longer required to ‘make’ the universe; on the contrary, the universe is quite capable of ‘making’ itself out of the atoms and the nature innate to them. Whatever complexity arises as a result of this process is a complexity which is to be ascribed to a potentiality inherent within the atoms themselves. Marx was to conclude something similar with regard to man and the nature of his

society, for man too is an entity endowed with a dual nature, an entity which is the source of the *principles* which govern its society as well as the *elements* comprising that society. For Marx, history will be complete when *the composition of all arises out of the free choice of all* – a true dialectical and democratic unity of *elements* and *principles*.