

## 7

## The Evolution of Coined Money

The analysis in the foregoing chapters concerns a formal aspect of commodity exchange which might seem to be common to exchange of all ages, so that the question occurs as to why commodity exchange gives rise to abstract thinking only at the relatively late date of classical antiquity and not from the very first exchange, probably tens of thousands of years earlier. We have seen from our analysis that commodity exchange serves as a means of social synthesis only from Greek antiquity onwards, but we now ask what distinguishes it then from previous stages. We must therefore very briefly peruse the main phases of development of exchange with an eye to their formal characteristics.

In a mere isolated, accidental case of exchange between any two parties the exchange abstraction evidently shows no trace at all. At a higher stage, which Marx calls 'the expanded form of value', when exchange becomes multilateral and comprises a variety of commodities, one of these must serve as a means of exchange of the others. Here too, this role does not convey to the commodity in question any appearance different from its use-value, although the latter is now vested with a postulate not to undergo any material change while it acts in this capacity. Still, the choice for this role falls upon a commodity which by its physical durability, divisibility and mobility easily complies with the postulate. In this way the postulate of immutability, although springing from the nature of exchange, soon again appears to all concerned to be the outcome of the peculiar use-value of the commodity in question. The fact that a peculiar halo is likely to accrue to the latter will seem to confirm rather than to contradict the misleading appearance. This is notoriously so when the role

of equivalent settles upon one or the other of the precious metals. 'All this was still very undeveloped; the precious metals were beginning to be the predominant and general money commodity, but still uncoined, exchanging simply by their naked weight',<sup>29</sup> that is, in the appearance of objects of use.

Therefore at each transaction they had to be weighed and cut or melted and tested for their metallic purity; in short, they had to be treated in accordance with their physical nature. But precisely this was the reason why they did not conform very well to the requirements of the market, and their inadequacies were not remedied until the invention of coinage. This portentous step was taken for the first time in history about 680 B.C. on the Ionian side of the Aegean, in Lydia or Phrygia. The institution quickly spread, following, as well as helping, the marked commercial expansion in process at that epoch and finding imitation in the main Greek centres of maritime trade. The very introduction of coinage is a sure sign of commodity production entering upon its stage of 'full growth'.

In coinage the previous relationship by which the value status of a commodity serving as money was subordinated to, and covered up by, its material status is reversed. A coin has its stamped upon its body that it is to serve as a means of exchange and not as an object of use. Its weight and metallic purity are guaranteed by the issuing authority so that, if by the wear and tear of circulation it has lost in weight, full replacement is provided. Its physical matter has visibly become a mere carrier of its social function. A coin, therefore, is a thing which conforms to the postulates of the exchange abstraction and is supposed, among other things, to consist of an immutable substance, a substance over which time has no power, and which stands in antithetic contrast to any matter found in nature.

Anybody who carries coins in his pocket and understands their functions bears in his mind, whether or not he is aware of it, ideas which, no matter how hazily, reflect the postulates of the exchange abstraction. To go about his marketing activities of buying and selling and to take advantage of the power of his money no clearer awareness is required. But to reflect upon the ideas involved, to become conscious of them, to formulate them, to take stock of them and to work out their interrelations, to probe into their uses and their implications, to recognise their antithetic

contrast to the world of the senses and yet their intrinsic reference to it, etc. - this does not follow automatically from the use of coined money, it constitutes a clearly definable conditioned potentiality inherent in a monetary economy.

The social upheavals and class struggles ensuing from the development of this economy in the various city-states of ancient Greece created under the existing historical conditions the necessary incentives for tackling these tasks. To work out their solutions occupied the long line of philosophers from Thales to Aristotle throughout three hundred years of astounding intellectual effort. What came into existence here is the capacity of conceptual reasoning in terms of abstract universals, a capacity which established full intellectual independence from manual labour.

## 8

# Conversion of the Real Abstraction into the Conceptual Abstraction

The formal structure of commodity exchange constitutes the core of the second nature: the purely social, abstract, functional reality which I earlier contrasted with primary nature where man exists on the same level as animals. Second nature finds its external expression in money, and in it the specifically human element in us finds its first separate and objectively real manifestation in history. This occurs through the necessity for a social synthesis which is in total separation from any of the operations of man's material interchange with nature. These

operations are in themselves part of primary nature, but on the basis of commodity production they are consigned to the private spheres of the commodity owners, irrespective of whether they are operations of production, consumption or reproduction. These countless private spheres must inter-communicate because of the division of labour between them, and they do so by way of commodity exchange.

As I have already pointed out, it is solely the *action* of exchange which exercises its social effect; the consciousness of those involved in it is private and blind to the socially synthetic character of their actions. The consciousness is fully occupied with things from which the action abstracts and only through the unremitting abstractness of the acts of exchange from all things empirical does the nexus of this unconscious society impose itself as one of second nature. Only when labour is translated into the formal terms of second nature, as abstract human labour, does it enter into the nexus under the term of 'value', as value-in-exchange; labour as the substance of value, because second nature is of human origin, cut off from and contrasting to primary nature. Second nature forms the basis of human self-awareness linked to self-alienation, since it operates entirely in the forms of the private appropriation of labour products and in separation from the labour which produces them. For even if the producers themselves exchange their own products they do so, not as producers, but as commodity owners.

Two aspects are thus combined under the single heading 'second nature': its socially synthetic reality in historical time and space and the ideal form of cognition through abstract concepts. The first aspect is crucial for our social existence under conditions of commodity production, the second is fundamental for our scientific knowledge through intellectual labour. By their significance both aspects of the abstraction are so disparate that to view them as two aspects of the same abstraction seems an unacceptable suggestion. And yet, if our understanding of the second nature is correct, this suggestion is inescapable. The abstraction comprising both aspects is one and can only be one. Its two aspects or parts can be related in no other way than in a context of conversion, the real abstraction being converted to its ideal reflection into intellectual form. But not everybody may feel convinced of the identity of the abstraction in its real and its ideal

shape and be prepared to accept the fact of the conversion, or rather the ascertainment of it as a foregone conclusion. An effort should therefore be made to demonstrate the conversion.

This is, however, no easy task. How can we set out to reason the case for or against the conversion? Thinking of the conversion as a performance in people's minds, it can, of course, never be either demonstrated or denied because it cannot be witnessed. The concepts in question being non-empirical, their mental presence cannot be testified by observable objects or facts. To try to ask the people themselves is equally non-availing since we have ourselves made out that the conversion must be blotted out from the minds engaged in it. All we can argue is the problem at issue in the conversion and how to make it recognisable. In real life, the ideal abstraction blots out the real abstraction so as to make it irre-cognisable. In order to avoid this happening the conversion must be presented as occurring from an act of commodity exchange as its starting-point or in direct context with the handling of coined money for its commercial use. In other words the conversion must be presented as occurring in a way in which it is absolutely impossible for it to occur. That is to say, the reader must understand our presentation to be nothing more than a simulation of an occurrence of the conversion and must be prepared to enter into it as an exercise staged for the sole purpose of demonstrating the cardinal point at issue. We are not concerned here with the history of the conversion and with the rise of the conceptual mode of thinking in ancient Greece and with its developments further on. This will occupy us in the second part of this study. But it would be impossible to appreciate the historical genesis of the intellect and of the division of intellectual from manual labour without first having clarified the nature of the conversion from within.

As it would obviously be impracticable to extend our exercise to cover the entirety of the exchange abstraction, we must select one out of its elements, preferably one that lends itself easily to our purpose. Let us take the question of the material of the coins which a money-owner carries in his pockets on the way to the market. We have said that such a person must carry ideas in his mind which 'reflect the postulates of the exchange abstraction' whether he be conscious of this or not, and we pointed to the material that his coins are made of as an example. How should

one describe this material? It may consist of one of the shiny stainless metals normally used for coinage and our money-owner might, if he behaved like every other one, identify it with one of these, until he becomes aware that it could as well be any of the others — gold, silver, bronze, nickel or what have you. And if he accepted a promissory note it could even be paper. But we have already seen that none of these choices which nature has to offer or which man can make is really true to the description of the material of which money should be made. Why else should the bank issuing money pledge itself to make up for wear and tear? All existing materials, all things and creatures of this world are perishable, transient, deceptive in appearance, corruptible, subject to the effects of time and any other of the deprecatory qualifications which Plato, for one, arrays against them before he speaks of the unblemished, everlasting, self-identical and pure entities which he honours with the title 'ideas'. But are, then, the coins in the pocket of our money-owner mere 'ideas'? At this frightening thought he grabs all the coins he can find in his pocket and ponders. 'These *are* things', he utters, 'and they are things not only for me but for anyone to whom I offer them in payment for the commodities he has to sell. And they have the same reality for every member of this Athenian polis of mine; this universal social reality is in the nature of money, whatever Antiphon or any other Sophist may say about reality attaching only to my perceptions and not to things beyond them. My coins are as real as my body and as the meat they buy for me to feed on, as real therefore as the body of everyone else. Immaterial money, "ideal money", thought-coins — what absurdity! No coin could be money without being materially real'.

Thus he reaches the reassuring conclusion that the material of which his money is made *is* real stuff, as real as any other stuff existing in time and space. And yet, at the same time it is totally different. For it is unchangeable under the effects of time as not only Plato might glory about but the very treasury of our State tells us when issuing our drachma. But how can matter not be subjected to time be existing in time? Not in the whole of nature and not in the bounds of sense-perception can such matter be found. How does our money-owner in his exceptional zeal know about it if this matter cannot be seen or felt and even touched? He knows it by thought and nothing else but thought. Never in his

life has thought of this obstinate kind come his way, thought of something real and yet detached from all and every sense-quality by which reality is real to us. Being freed from sense-quality his coin-material is indestructible. 'How is it different then', he argues, 'from the reality that Plato terms "ideas"?' But brother Plato is wrong in pushing this reality out of our commercial world and gazing at it in the skies only because of its indestructibility. On the contrary, this stable, unchanging, abstractly uniform material of which my coins are made is right here in my pocket.' So he looks at it again and what he holds in his hand is a piece of silver, silver from the mines of Laurion and none of that Platonic stuff which has room for existence only in his pure, abstract thought and for which he knows no definition and no name.

After having got stuck like Socrates on the way to his symposium he now hurries with renewed intent to the agora, the market-place, where he planned his purchases. Arriving there at last he is, however, struck again, for not far from the butcher's stand he sees Plato sitting on the parapet in person in philosophical converse with Socrates, Glaucon, Adeimantus and other friends. Should he accept his coins as being simple silver, go to the butcher and buy his meat with them, or should he pursue the question of the indestructible, abstract and purely ideal stuff he knows his coins should really be made of, and ask Plato to put him wise on the question? This, of course, would engage him in purely intellectual pursuits and who knows when he would ever return to the economic necessities of life?

Well, we can leave our experimental money-owner at the parting of the ways whose incompatible alternative would make him split in two. But he served to demonstrate by his simulations that the alternative itself is no invention but a true duality inherent in the nature of commodity exchange and growing out of the real abstraction when it becomes discernible through its reification in coinage. So long as we move in the sphere of commodity exchange and on the level of market activities coins are pieces of metal. This metal is an object of use-value estranged from its use by serving as the generally recognised equivalent of all other commodities and in its value representing quantitative parcels of social labour in the abstract. But underlying this monetary service of the coins is the general 'commodity abstraction', as Marx calls it, which allows for, and indeed enforces the

formation of non-empirical concepts of pure thought when this abstraction becomes mentally identified in its given spatio-temporal reality. But this is an activity absolutely at variance with the basic economic use of the coinage and its links are irreconcilable. We shall return to this in the next chapter; at present we confine ourselves to one aspect of the problem only, the question of identifying the material from which coins should be made.

The first 'pure thinker' emerging with a concept fitting the description of the abstract material of money, but without any idea of what his concept stood for and what had prompted him to conceive it, was the ancient-Greek Parmenides. His τὸ ἕν translated means 'the One; that which is'. It is unchanging through time, fills all space, lacks all properties of sense-perception, is strictly homogeneous and uniform, indivisible, incapable of becoming or of perishing and is for ever at rest (i.e. conforms to the static inertia common to thinking throughout classical antiquity). Parmenides stresses that its reality or being is of such a kind that it is inherently impossible to think that it is not. This piece of reasoning takes pride of place in his teaching and marks the first historical instance of a conclusion based on an argument of logic. It prompted Hegel to say: 'Parmenides marks the beginning of philosophy.'<sup>30</sup> And Francis Cornford agrees: 'He is the first philosopher to argue, formally deducing conclusions from premises, instead of making dogmatic announcements. His school were the originators of dialectic.'<sup>31</sup> Together with Pythagoras and Heraclitus, Parmenides belongs to the first philosophers with whom man's mental activity assumes a shape totally different from the anthropomorphisms associated with the communal modes of production preceding the age of commodity production. With these philosophers, and the great Ionians of the Milesian school before them, we witness the 'Greek miracle': the beginning of the conceptual mode of thinking which is ours to this day and which carries the division of intellectual from manual labour that permeates all class societies based upon commodity production.

It needs to be stressed that neither Parmenides nor any other founder of classical Greek philosophy ever claims to have formed his concepts himself, for example by abstracting from the particular and manifold of a perception to the level of a universal

concept. None of them legitimates his concepts by presenting the way they were made. The abstractions underlying them are of a completely different kind; they are found given, ready-made, totally without derivation. They have occurred elsewhere; not by way of human thinking. Thus Parmenides, for example, describes in the allegorical proemium by which he prefaces his philosophy how he has flown up to the dwelling of Dike, the goddess of knowing right and wrong, and there was initiated by her to the wisdom he proclaims. And he adds explicitly that she admonished him: 'Only by means of reason must you ponder the much considered teaching that I give you.'<sup>32</sup>

Thus without the concept *τὸ ἕν* being itself a creation of Parmenides' thinking, it is nevertheless the starting-point for a thinking based on arguments of reason. Central to this is that conceptual thought grasps the dialectic of truth and untruth according to standards of a binding, logical necessity of thought or of contrariety to it. Parmenides argues: 'Thinking and the thought that "it is" are one and the same. For you will not find thought apart from that which is, in respect of which thought is uttered. For there is and shall be no other thing besides what is.' 'That is the fundamental idea', adds Hegel. And indeed Hegel recognises in Parmenides his own conceptual ontologism.<sup>33</sup>

What defines the character of intellectual labour in its full-fledged division from all manual labour is the use of non-empirical form-abstractions which may be represented by nothing other than non-empirical, 'pure' concepts. The explanation of intellectual labour and of this division thus depends on proving the origin of the underlying, non-empirical form-abstractions. This is the task we have undertaken. And we can see that this origin can be none other than the real abstraction of commodity exchange, for it is of a non-empirical form-character and does not spring from thought. This is the only way in which justice can be done to the nature of intellectual labour and of science and yet avoid idealism. It is Greek philosophy which constitutes the first historical manifestations of the separation of head and hand in this particular mode. For the non-empirical real abstraction is

<sup>32</sup> Here I follow Hegel's rendering in his lectures, op. cit. 387: 'Nur mit der Vernunft musst du die vielgeprüfte Lehre erwagen, die ich dir sagen werde.' Hermann Diels translates: 'Mit dem Verstande bringe die vielumstrittene Prutung, die ich dir riet, zur Entscheidung.' *Fragmente der Vorsokratiker* (1903) p. 119.

evident in commodity exchange only because through it a social synthesis becomes possible which is in strict spatio-temporal separation from all acts of man's material interchange with nature. And to my knowledge this kind of social synthesis does not reach fruition before the eighth or seventh centuries B.C. in Greece, where the first introduction of coinage around 680 B.C. was of fundamental importance. Thus we are here confronted with the historical origin of conceptual thought in its fully developed form constituting the 'pure intellect' in its separation from all man's physical capacities.

## 9

## The Independent Intellect

## (a) SELF-ALIENATION AND SELF-DIRECTION

We have not yet pursued to its conclusion the process of identification which we have chosen as the most exacting means for illustrating the theoretical issue contained in the conversion of the real abstraction of exchange into the ideal abstraction of conceptual thought. This results in the independent intellect.

Only at the final conclusion of the identification are the resulting concepts cut off from their origin; only at this point can it be said that, as abstract thought is engendered, it is cut off from its root, by its root and at its root. This is because the real abstraction of exchange has as its distinguishing mark the total exclusion of empirical content. Its abstractness is non-empirical. Thus, if it or any of its elements are correctly identified, this results in the formation of concepts as non-empirical as the exchange abstraction itself. And being non-empirical, they bear no trace of the locality, the date or any other circumstances of their origin. They stand outside the realm of sense-perception without, however, forfeiting their own prime claim to reality. But

this reality is that of being as a whole, not that of any specific object.

It must further be understood that because it is cut off from its social origin, the abstract intellect emerges with a peculiar normative sense all its own, serving as its 'logic'. We have observed this phenomenon when discussing the Parmenidean concept τὸ ἔῶν especially in the light of Hegel's interpretation. Here the non-empirical conceptual abstraction, when it emerges clearly, proves to be connected from the very beginning with its own sense of truth and untruth and a kind of reasoning characterised by argument of logic. These are the properties which the Greeks understood as the powers of dialectic. Thus the conversion involves both self-alienation and self-direction.

The explanation of this normative sense which carries the logical independence of the abstract intellect and is responsible for its cognitive faculty lies in the very nature of the exchange abstraction. The entire exchange abstraction is founded upon social postulate and not upon fact. It is a postulate that the use of commodities must remain suspended until the exchange has taken place; it is a postulate that no physical change should occur in the commodities and this still applies even if the facts belie it; it is a postulate that the commodities in the exchange relation should count as equal despite their factual difference; it is a postulate that the alienation and acquisition of things between commodity-owners is tied to the condition of exchangeability; it is a postulate that commodities change owners by a translation from one locality to another without being materially affected. None of these form-concepts imply statements of fact. They are all norms which commodity exchange has to obey to be possible and to enable anarchical society to survive by the rules of reification.

#### (b) THE RELATIONAL SHIFT

This statement does not in itself provide the full explanation required. For these postulates apply directly only to social relations and to people's manner of action and are a far cry from the normative character of the abstract intellect in its understanding of nature. The truth is that the process of conversion yielding this intellect undergoes a most remarkable shift even

while following the straightforward line of identification. The real abstraction arises in exchange from the reciprocal relationship between two commodity-owners and it applies only to this interrelationship. Nothing that a single commodity-owner might undertake on his own could give rise to this abstraction, no more than a hammock could play its part when attached to one pole only. It is purely owing to the interlocking of the exchanging agents in the reciprocity of their claims — their 'do ut des' — (I give that you may give) — that the act of exchange assumes its abstract nature and that this abstraction endows exchange with its socially synthetic function. To apply the exchange relation to Robinson Crusoe in his dealings with the nature surrounding him, as bourgeois economists are so fond of doing, removes all trace of the real abstraction from what they call 'exchange'. Yet, strangely enough, when the real abstraction has finally been converted into the conceptual structure of the abstract intellect, we are faced with a relationship not so far removed from that of Robinson to nature, for this intellect applies itself to external reality in accordance with the familiar subject-object pattern of the relationship of cognition. The relational shift is so complete that it seems to make an absurdity of our contention that such a contrast is the result of nothing more devious than a process of successful-identification. And yet on closer scrutiny it can be seen that this complete change of scenery, if I may thus describe the relational shift, is an integral and inevitable part of the very process of the conversion.

We clearly saw that the real abstraction inherent in exchange becomes discernible only in coined money. In any previous commercial practice still compatible with communal forms of society (in fact interspersed throughout the Near and Eastern Mediterranean orbit with remnants of such forms) the real abstraction was, of course, equally operative but in a way absolutely concealed from the human mind. The introduction and spread of coinage, however, ousted communal production and heralded a form of social synthesis rooted in 'reification', so called because the social context of people is transformed into the social context of their products intercommunicating in the monetary terms of their prices, their 'commodity language' as Marx puts it. We shall return to these historical aspects of our subject in Part II of this book. Coined money operates as the

functional intermediary of the social synthesis. The commodity-owners no longer refer to each other, but to their money. Thus only at the advanced stage of reification prevailing in commodity production at its full growth do the conditions arise where the conversion of the real abstraction into conceptual terms becomes a possibility. And under these conditions the elements of the exchange abstraction present themselves to the human mind, one single mind every time, as properties of objects which in fact relate to nature, not to money.

(c) CONVERSION POST FESTUM OF EXCHANGE (MARX - AFTER THE EVENT)

In the first place it must be reiterated that the conversion of the exchange abstraction does not take place as a part of commercial activities. For its commercial purposes coinage is perfectly adequate in its empirical state as made of metal or its substitutes. The discrepancy between the actual coinage and the exchange abstraction cannot leave its mark on people in the bustle and fray of the market but strikes them only as a matter for contemplation and mental reflection.<sup>34</sup> Here we enter into the cognitive relationship of subject to object and the object within this relationship stands for nature. For, in the second place, we must be clear as to the precise contents of the exchange abstraction. These contents are nothing but the basic features of the physical act of commodity transfer between private owners. It is this physical event which is abstract (this is precisely why we have called it the 'real abstraction'). It is a compound of the most fundamental elements of nature such as space, time, matter, movement, quantity and so on. The concepts which result from the identification of these elements are thus in their origin concepts of nature. Between them, they constitute an all-encompassing pattern or framework of nature in the abstract. In logical terms they can be described as non-empirical, purely formal concepts of timeless universality. And they can relate to nothing other than to a nature seen as physical object-world antithetically divided from the social world of man and from its history. The world of the concepts based on the exchange abstraction is the same as that criticised by Marx in a famous footnote of *Capital*, vol. I, where he speaks of 'the abstract materialism of natural science, a

materialism that excludes the historical process'.<sup>35</sup>

(d) DIVISION OF SOCIETY AND NATURE

What happens at the formation of this non-human object world of nature is a peculiar turnabout of the emerging intellect at the concluding point of the conversion. While the non-empirical concepts which make up the intellect's impersonal equipment wipe out every trace of its social origin and cause it to stand, as it were, with its back to society, these same concepts turn into instruments of cognition facing the external reality of nature. For by their abstractness from all sense reality of use the concepts also lose all human reference and retain non-human nature as their only content.

Conceptual reasoning emerges in a process which causes an impenetrable self-alienation of the abstract intellect and at the same time, endows it with a capacity of logical self-direction. Once the elements of the real abstraction have assumed conceptual form, their character, rooted in social postulate, evolves into the dialectic of logical argument attached to the concepts. The argument concerns the application and the interpretation of the concepts, as either right or wrong, correct or incorrect. Thus the Parmenidean τὸ ἕν referring, according to our contention, to the material that coinage *should* be made of, but is not and cannot be made of, become prescriptive of the correct way to reason about reality. And this correct way as a general rule will conform to the make-up of the existing social formation based on commodity production. The reasoning itself, however, is totally impervious to this conformity since its alienation blinds it to society. This creates the division of society and nature which emerges with commodity production and outdates the anthropomorphic blending characteristic of the communal forms of society preceding commodity production.

Francis Cornford gives a telling example of such an anthropomorphism when he quotes Sophocles from *Oedipus Rex*: 'So, . . . when a sin has been committed - such as the unconscious incest of Oedipus - all Nature is poisoned by the offence of man. The land of Thebes "Wasteth in the fruitless buds of earth, In parched herds, and travail without birth of dying women"'.<sup>36</sup> As George Thomson puts it: 'In primitive thought, society and

nature had been one. Thales and Anaximander succeeded in separating nature from society and presenting it as an external reality existing independently of man. Similarly, Solon succeeded in separating society from nature and presenting it as a moral order based on obligations peculiar to man. In other words, just as Anaximander objectified nature, so Solon objectified society.<sup>37</sup>

(e) REIFICATION AT THE ROOT OF THE INTELLECT

It may be confusing to be told that the notion of nature as a physical object-world independent of man emerges from commodity production when it reaches its full growth of monetary economy. Nevertheless this is a true description of the way in which this conception of nature is rooted in history; it arises when social relations assume the impersonal and reified character of commodity exchange. We saw that in exchange the action is social whereas the minds are private, and that it is the physical action of the commodity transfer between the owners which is abstract. The action of exchange stands in antithetic polarity to the sense-reality of things in the private minds of the individuals in their social life. The non-empirical concepts drawn from the real abstraction describe that action reduced to bare-bone physical reality. It is a reality carrying universal social validity among all exchanging agents. These concepts have objective reality in application to natural events because they relate to form categories of physical events, of a kind which could be described as the absolute minimum of what can constitute a natural event, for they are events which happen while the material status of things undergoes no change. They constitute the paradigm of mechanistic thinking. Its concepts are, in their origin, the forms of the act of commodity exchange, and in their content the basic categories of nature as object-world in antithetic contrast to man's own social world. The content of these concepts bears absolutely no reference to money. Their only trait relating to money and to exchange is their abstractness. The abstractness itself is the work and outcome of exchange, but this fact is completely unrecognisable to any mind or 'intellect' using these concepts. Such an intellect is bound to be alienated by false consciousness when it tries to explain its own mode of thinking.

The self-explanation assumes the materialistic or the idealistic variant according to whether its basic concepts are recognised as non-empirical or as derived from external reality. Non-empirical concepts cannot be explained in materialistic ways – that is, by way of direct reflection – and idealism is thus at an epistemological premium regardless of its blatant absurdities otherwise.

(f) KNOWLEDGE FROM SOURCES OTHER THAN MANUAL LABOUR

Owing to the concepts drawn from the exchange abstraction the intellect is equipped with instruments of cognition which, if employed in a suitable method, can yield a knowledge of nature from sources totally alien to manual labour. It is a knowledge ruled by a logic of appropriation, or, more precisely, by a logic of the reciprocal appropriation which rules in the market, as opposed to manual production. A logic of production could only be the logic of producers for the pursuit of their production, individually or in common. It would be a logic of unity of head and hand, whereas the logic of the market and of mechanistic thinking is a logic of intellectual labour divided from manual labour. Therefore, the concepts deriving from the exchange abstraction – that is the concepts of mechanistic thinking – we may term as 'original categories of intellectual labour'. It is a labour serviceable to the rule of private property and in particular to capital.

It is the science of intellectual labour springing from the second nature which is founded upon non-empirical abstraction and on concepts of an *a priori* nature. The form elements of the exchange abstraction are of such fundamental calibre – abstract time and space, abstract matter, quantity as a mathematical abstraction, abstract motion, etc. – that there cannot be a natural event in the world which could elude these basic features of nature. They make up between them a kind of abstract framework into which all observable phenomena are bound to fit. Anything descriptive of this framework such as, for example, the geometry of homogeneous space, would be applicable to such phenomena with *a priori* assured certainty, although, of course, in a manner appropriate to the specific properties of the phenomenon concerned. While these properties in their infinite variety are conveyed through sense-perception and are as accessible to



manual producers as to scientists, the conceptual issues are the exclusive prerogatives of the intellectual workers. It is this theoretical part which holds the epistemological problems. The main one among these attaches to the understanding of nature by its laws; to the possibility and conditions of such understanding.

(g) LAWS OF NATURE

The discovery of natural laws was the set objective of the mathematical and experimental method of exact science as understood and practised in the classical Galilean – Newtonian era. The rise of modern science ran parallel with the rise of modern capitalism. In Part II of this study we shall analyse their formal and inherent connection; at present we are concerned to clear up the epistemological issue of science as raised by Kant, with whom we have one important point in common. Kant argued with great vigour and with a polemical edge against English empiricism that the discovery of natural laws presupposes the employment on non-empirical concepts such as, say, the concept of inertial motion as defined by Newton in his ‘first law of motion’. On the other hand, it is extremely difficult to see how such a concept, just because it is non-empirical and cannot be gleaned from nature or supplied by the practice of experience, could possibly give access to the inner workings of nature far beyond sense-perception. It was this contradiction which prompted Kant to turn the tables on all previous epistemological standpoints and to decide that, as the concepts of science could not be assumed to be modelled on nature, the only way to account for the facts of Newtonian science was to postulate that nature, or rather our human kind of experience, was modelled on the non-empirical concepts of our pure understanding. Now Kant was driven to this conclusion because he could not imagine that non-empirical concepts could possibly have natural or historical, or in any case spatio-temporal, roots. The same holds true for all philosophical materialists. To their minds anybody believing that non-empirical concepts play a vital part in science must be an idealistic thinker. Conversely, anybody resolved to adhere to his materialism is committed to hold mistaken ideas about ancient and bourgeois science. Our study is calculated to remedy this paradoxical situation. For we show that non-

empirical concepts are not necessarily beyond the reach of materialistic explanation. We are therefore in a position to dismiss both these philosophies, idealist and materialist, and to follow historical materialism as our only methodological guideline.

(h) THE GUIDE-LINE OF HISTORICAL MATERIALISM

Marx contemplated human history as a part of natural history, a tangential part, as it were, which takes shape in the protracted process by which man succeeds in producing his own means of livelihood. This holds a promise that man will eventually assume control of his historical destiny, but until that stage is reached the development of mankind is the result of blind necessity and is as much a working of natural history as, say, the generation of a new biological species would be in non-human nature. But the difference is that history, by being channelled through human society, brings forth mental rather than physical alterations in man, developments like language, conscious reflection, faculties of knowledge together with those of error and human self-delusion and even possibly also of a social self-realisation of man. True, the nature from which the non-empirical categories of intellectual labour are drawn is not the primary nature of physical reality but the second, purely social nature which, in the epochs of commodity production, constitutes a vital part of that ‘social being of men which determines their consciousness’.

However, the very categories which constitute second nature are products of man’s natural history. Commodity exchange, when attaining the level of a monetary economy, gives rise to the historical formation of abstract cognitive concepts able to implement an understanding of primary nature from sources other than manual labour. It seems paradoxical, but is nevertheless true, that one has first to recognise the non-empirical character of these concepts before one can understand the way in which their indirect natural origin through history achieves their validation. One might speak of science as a self-encounter of nature blindly occurring in man’s mind.

## (i) MONEY AS A MIRROR OF REFLECTION

To trace the natural origin of such categories in this historical manner, or rather to develop them historically from their social roots, is well in keeping with the method advocated by Marx. In a much-quoted footnote in *Capital*, vol. 1, he calls this method 'the only materialist, and therefore the only scientific one'.<sup>38</sup> I deem it superior to the theory of reflection especially in regard to concepts of basic importance in intellectual labour divided from manual labour. Reflection, however it may be interpreted and differentiated, must be the activity of bodies with individual senses and individual brains, whereas abstract intellectual labour relies from the outset on terms of logical uniformity and universality. The contrast of approach and specificity of understanding can be brought out clearly by attempting to interpret our theory in terms of the theory of reflection. The role played by money and coinage in mediating the formation of the purely intellectual concepts according to our explanation can be likened to the part played by a medium of reflection. The real abstraction of exchange is reflected in coinage in a manner which allows intellectuals to identify it in its distinct elements. But first of all, the reflection itself is not a mental process; second, it is on a social scale; third, it is hidden to the consciousness of the participants; and, fourth, it is associated with the formation of false consciousness. How could necessarily false consciousness be admitted as the medium for the reflection of truth or of true reflection?

## (j) THE SOCIAL FORM OF THINKING

The fact that the reflecting medium of the real abstraction is coinage accounts for the creation of logical uniformity of the intellectual abstraction among all conceptual thinkers in an exchange society of a given stage and formation. But it does more than that. The basic categories of intellectual labour, we have seen, are replicas of the elements of the real abstraction, and the real abstraction is itself that specific characteristic which endows commodity exchange with its socially synthetic function. Therefore, intellectual labour, in employing these categories, moves in the mould of the formal elements of the social synthesis. The

social synthesis is the rationality of intellectual labour in its scientific activity; in classical antiquity this included philosophy. Scientific work, its conceptual or theoretical part, if correctly done is socially valid, not only because it rests upon a community of thinking among the intellectuals. It would have social validity even if it stood on lonely ground and met with the disagreement of everybody else in the existing confraternity of intellectuals and scientists. Throughout the ages of commodity production, from its initial form of ancient slave society to its ultimate capitalist completion, the products of manual labour are private property whereas the products of intellectual labour are social property. If an individual mind conforms to the elements of the real abstraction, by which society itself forms a functioning network and an economically viable system, then this mind is by itself capable of producing socially valid results. For this mind acts intellectually for society. In fact it does so in a 'super' capacity, much as society would itself act as an entirety if it were equipped with the necessary body and brain. Instead it uses individual minds as its representatives. Such a mind then acts as the only one of its kind, excluding a plural in the same way as society and money cannot be more than 'single' at any time. A closer analysis would reveal that the 'transcendental unity of the self-consciousness', to use the Kantian expression for the phenomenon here involved, is itself an intellectual reflection of one of the elements of the exchange abstraction, the most fundamental one of all, the form of exchangeability of the commodities underlying the unity of money and of the social synthesis. I define the Kantian 'transcendental subject' as a fetish concept of the capital function of money.

As it assumes representation as the *ego cogito* of Descartes or of the 'subject of cognition' of philosophical epistemology the false consciousness of intellectual labour reaches its culmination: the formation of thinking which in every respect merits the term 'social' presents itself as the diametrical opposite to society, the ego of which there cannot be another. Kant has the appropriate formula for this contradiction: 'There is no ground in theoretical reason from which to infer to the existence of another being.' Nothing could be wrapped in greater secrecy than the truth that the independence of the intellect is owed to its originally social character. Science is equipped for its socially necessary tasks, but

century the productive forces at the disposal of mankind must still be classed as those of the Iron Age. This means that the basic pattern of commodity production, marked by the separation of the activities of physical work and the activities of social interrelationships (i.e. exchange) remains unchanged. But with the rise of monopoly capitalism around the turn of the century the pattern began to show modifications and there occurs a change of science and technology which marks a transformation of the productive forces into those of atomic physics and of electronics. These transformations will occupy us in Part III of this volume but the consequences are so novel and so enormous that nothing more than question marks, at best intelligent ones, can be within our scope.

only with false self-awareness. 'Science', here, is understood as divided from manual labour.

(k) THE SOCIAL SYNTHESIS AS THE FOUNDATION OF SCIENCE

From the results so far we can draw the general conclusion that, within the limits of commodity production, the valid foundations of the science of an epoch are those in keeping with the social synthesis of that epoch. We shall see that significant changes in the formation of the social synthesis indeed entail corresponding changes in the formation of science.

We limit this conclusion to the epochs of commodity production. 'Objects of utility become commodities only because they are the products of the labour of private individuals who work independently of each other.'<sup>39</sup> This statement of Marx indicates the reason why a society based on this mode of production is in need of intellectual work by social thinking and why social thinking must be divided from physical labour. Physical production has lost its direct social cohesion and can form a viable totality only by the intermediary of a network of exchange under the rule of private property. As capital it controls production. In a variety of ways — by slave labour, serfdom or wage labour — it subjects manual labour to exploitation. The manual labour becomes impoverished, not only economically because of its exploitation, but also intellectually. Individual labour is in full control only in the small-scale individual production of peasants and artisans. Only then is production based on the individual unity of head and hand. This artisan mode of production is ousted by capitalist production initially by nothing more than a larger size changing its scale to the social one of 'simple co-operation' in the Marxian sense of this term. Not infrequently this enlarged scale was necessitated by the novel and special nature of the production task.

Social history first embarked on commodity production with the beginning and development of Iron Age technology from the times of Greek antiquity onwards. It progressed slowly, culminating in modern capitalism where commodity production became the all-pervading form of production to the extent that practically no product whatsoever can any longer be produced except as commodity. Yet, right up to the end of the nineteenth