Chapter 2

The Labor Theory of Value

With the appearance of exchange value in the text, Marx is ready to introduce his "labor theory of value." This is a fundamental element of his work, critical to the development of almost everything that follows it in Capital. Thus it merits thorough consideration.

Marx's exposition of this theory begins as follows:

> Exchange value, at first sight, presents itself as a quantitative relation, as the proportion in which values in use of one sort are exchanged for those of another sort, a relation constantly changing with time and place. Hence exchange value appears to be something accidental and purely relative, and consequently an intrinsic value, i.e., an exchange value that is inseparably connected with, inherent in commodities, seems a contradiction in terms. Let us consider the matter a little more closely.
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> A given commodity, e.g., a quarter of wheat is exchanged for x blacking, y silk, or z gold, &c. – in short, for other commodities in the most different proportions. Instead of one exchange value, the wheat has, therefore, a great many. But since x blacking, y silk, or z gold, &c. each represent the exchange value of one quarter of wheat, x blacking, y silk, z gold, &c., must as exchange values be replaceable by each other, or equal to each other. Therefore, first: the valid exchange values of a given commodity express something equal; secondly, exchange value, generally, is only the mode of expression, the phenomenal form, of something contained in it, yet distinguishable from it.
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> Let us take two commodities, e.g., corn and iron. The proportions in which they are exchangeable, whatever these proportions may be, can always be represented by an equation in which a given quantity of corn is equated to some quantity of iron: e.g., 1 quarter corn = x cwt iron. What does this equation tell us? It tells us that in two different things – in 1 quarter of corn and x cwt of iron, there exists in equal quantities something common to both. The two things must therefore be equal to a third, which in itself is neither the one nor the other. Each of

> them, so far as it is exchange value, must therefore be reducible to this third.

The passage begins with a fairly unexceptionable statement about exchange value, one that is accurate as far as it goes: "Exchange value, at first sight, presents itself as a quantitative relation, as the proportion in which values in use [this is yet another of Marx's terms for "use-values"] of one sort are exchanged for those of another sort."

That is entirely accurate; in fact it is the definition of exchange value (and thus exchange value "presents itself" as such at first sight, last sight, and every other sight). The exchange value of a particular good is by definition the amount of any of various other goods for which it can be exchanged – meaning, for which it actually *is* exchanged, at the current time, on the market. (Or as Smith puts it, an object's exchange value is "the power of purchasing other goods which the possession of that object conveys," this power being measured by the amount of those goods.) That is the entire extent of the meaning of the term; and it is important to note, for future reference, that there are no metaphysical subtleties involved in it. The concept is a matter of observed fact: we can observe that two goods are exchanged on the open market in a certain proportion; or that they are sold at money prices from which such a proportion can be derived. This proportion, or an aggregate of such proportions, constitutes, by definition, a particular commodity's exchange value.

Thus if an ounce of gold is exchangeable for 20 ounces of silver, the proportion for these two is established: 20 to one. The meaning of the term "exchange value" is entirely transparent, and the method for determining, i.e. measuring, a commodity's exchange value is straightforward. Goods are exchanged, and in this exchange a definite proportion is attained; this proportion is the exchange value.

(This is of course an over-simplification. While exchange value can be conceived of in terms of goods' of various kinds being directly exchanged for one another, of course it usually doesn't happen that way. Most things are bought and sold for money; but this money, serving as a medium of exchange, can be treated as a mere intermediary. The various money prices of goods, by a brief calculation, give us the respective amounts of various goods which are equivalent to each other. If a bushel of corn sells for $3.20 and a bushel of soybeans sells for $2.80, the proportion is 7/8 bushel of corn exchangeable for 1 bushel of soybeans. This comparison of goods to goods, rather than to money prices, is considered the more basic meaning of exchange value.)

Of course, all of this says nothing about how that proportion was arrived at, or *why* it is 7/8 to 1. That is another topic, the one of what determines exchange value; it is a much more complicated subject than the simple definition of the

term. As concerns the definition of exchange value and our method of knowing or measuring its magnitude, that is more straightforward: exchange value is simply what you can get, or what you must give, for an item on the market. It will be well to keep these simple guidelines in mind in the face of future rhetorical subtleties of Marx's.

What all this indeed means is that exchange value is a "quantitative relation," in a literal, mathematical sense. This being the case, some characteristics of mathematical relations bear discussing as pertinent to the entire subject of exchange values in a general way.

Mathematical relations

A mathematical relation can be defined as a set of corresponding pairs of values (i.e., numbers), with each pair of values having a number of the first kind (an x-value) associated with a value of the second kind (a y-value). These paired or corresponding values can be specified by an algebraic equation such as $y=x^2$; such an expression defines a relation. To find one pair of values, you might choose an "input" value, say 2, and use the rule or formula to determine the "output" value, 4 – yielding the pair (2, 4).

Another method of describing or representing a particular relation is a graphical representation, on Cartesian coordinates, with the pairs or values plotted as (x, y) points along x and y axes.

An example of a relation pertinent to economics is the "demand curve" for a product. This curve graphs the amount of a product which can be sold, or which one would expect to sell, against a given price asked for the product. For example, if the asking price is $3.00, one may sell 5000 units per week; whereas if the price is $3.50 one may sell 4500, and so on. All these points or ordered pairs – ($3.00, 5000), ($3.50, 4500) and so on – together form the mathematical relation which is the demand curve.

(This particular relation is also a function; a function is a relation having only one y-value at any given x-value. That is, for any given x value there is only one pair (x,y) in the relation. Relations other than functions may have more than one y-values for a given x-value.)

Exchange value as a relation

Applying this concept of relations to exchange value, i.e. to the amounts of various goods for which a particular good is exchangeable, we see that exchange value indeed constitutes a mathematical relation. Taking a given amount of the commodity we're interested in, say 1 bushel of corn, as our x-value, we can find

many corresponding "y-values" for which it can be exchanged. A bushel of corn may be the equivalent of $3.20 in money, or 1.15 bushels of soybeans, or a quarter-ton of pig iron, etc. (All these [x, y] pairs, of course, would more realistically be calculated by comparing their respective money prices.)

This resulting set of figures – (1 bu. corn, $3.20), (1 bu. corn, 1.15 bu. of soybeans), (1 bu. corn, 1/4 ton pig iron) – does form a quasi-mathematical relation, though the scale or unit of measure is different for each y-value. But it is sufficiently like a mathematical relation to allow us to treat it as one.

At any rate, exchange value does correspond quite closely to the concept of pure mathematical relations; exchange value can be seen as a set of ordered pairs of values, corresponding to various quantities of different commodities.

Exchange value as a philosophical concept

The reason all this is worth discussing is that it serves to demystify Marx's use of the concept of relation. Nothing extraneous to the mathematics of the subject, nothing of a metaphysical nature should be read into the concept of mathematical relations. And it should be kept in mind that exchange value is just one type of a mathematical relation, and it has no magical properties different from any other relation.

Notice then: the way we find out the pairs of corresponding values or quantities in the exchange-value relation is simply by observing the respective prices at which goods actually are being exchanged, i.e. sold, on the market. It is a matter of open observation, not of metaphysics or logical deduction.

This is important to note because various authors, and not only Marx, have at times been inclined to approach exchange value from the wrong end, as it were – as if it were an *a priori* philosophical category which it is up to us (i.e., to economists) to determine by logical deduction.

For example, in *The Capitalist Manifesto*, Mortimer Adler and Louis Kelso write about the subject of exchange value in these terms:

> [Exchange value is] the problem of finding an objective measure of the economic value of goods and services, so that a just exchange of commodities is possible.
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> Marx accepts Aristotle's principle of justice in exchange as requiring that the things exchanged be of equal value... Aristotle raises the question of how we can equate the value of beds and houses so that a certain number of beds can be justly exchanged for a certain number of houses. [1]

The problem of finding an objective standard for the just exchange of commodities is not ours. That is, the question is not how *we* can equate the value of beds and houses; they are already equated or commensurated on the market. People already deal in beds and houses, and the proportionate worth of the two commodities is already determined daily on the market. Our problem is finding out, after the fact, how it is accomplished; it is finding out what market factors come into play in the spontaneous determination of prices. (The process is spontaneous not in that people are not involved in the it, but because price determination is not governed from above, by economic or philosophical theorists. Prices arises spontaneously, amid the economic dealings of people involved in trade. Perhaps this is part of the concept of the "invisible hand" – meaning not that no one's decisions and choices are involved, but that the theorists and economists are not in control.)

If we consider exchange value from the above viewpoint, it is similar to various aspects of natural science. The phenomena being studied exist already, independent of the scientist, having their own pre-established nature and behavior. It is not up to the scientist or the economist to deduce a set of rules which we then assign to the phenomena; rather it is up to us to discover what rules already govern their behavior, independently of our observations and theories.

In other words, the market functions, and has always functioned, in such a manner as to enable goods to be exchanged or traded at various rates or proportions. The market does not wait for us as theorists to determine by logical reasonings what a certain thing *should* exchange for. Exchange value is not a deductive or logical category which we define or establish by a system of argumentation.

Our problem is not to deduce or decide what a thing *should* exchange for, but to find out what economic factors and considerations already, independently of our reasoning, cause things to be exchanged at particular rates – i.e., cause them to have particular exchange values. There is a subtle difference between these two, and in some cases use of the "wrong" paradigm may be just be a matter of careless terminology; but it is an important distinction to understand and keep in mind.

(All this is not to say there may not be a philosophical question as to whether the actual exchange value, as arrived at by market forces, is in some philosophical sense a "just" or fair exchange. For example, in time of famine the price which food can command on the open market may be exorbitant and indeed unjust, though it is the actual economic exchange value. Similarly, in a time of greatly depressed real-estate market, someone selling a house in which he has invested a lot of money and labor and care, may believe he is forced to sell at an unfair price. Yet as a strictly economic matter these prices are

determined by economic factors, and our primary task is to determine those factors. They will tell us what determines exchange value. In times of "normal" market conditions, the question of whether the actual market price is the "just rate of exchange" is far less problematical.)

In this light, if our subject is purely economic, i.e., if the subject is simply the economic aspects of exchange value and not historical or other aspects, then it is reverse logic to say that commensurability or "justice in exchange" requires "that the things exchanged be of equal value." The fact that they are exchanged as being equal on the market already, *by definition*, makes them of equal value. What a thing is exchangeable for, what you must give for it on the market, is its exchange value.

One final observation should be made about the example of exchange value as a relation: all the amounts of various goods for which, say, one bushel of corn may be exchanged, are equivalent and may be exchanged for one another. That is, if one bushel of corn is exchanged for 1.15 bushels of soybeans, or for $3.20 in cash, or for a quarter-ton of iron, then in turn we would expect the 1.15 bushels of soybeans to be exchanged for $3.20, and the quarter-ton of iron to be exchanged for 1.15 bushel of soybeans, and so on. "Two things equivalent to a third thing are equivalent to each other," is the rule we naturally expect to find at work in this relation.

(This is the more so since all the equivalencies we observed have been obtained not by seeing actual consumer goods exchanged for each other, but by comparing their respective money prices. Since we have obtained our relation from these prices, and since every exchange will be transacted via a money intermediary, there is little opportunity for the appearance of a disparity between the values of two individual commodities.)

In mathematical terms, what the above means is that the relation of exchange value or commensurability is "symmetric" and "transitive." Similarly, if we examined the equality relation (which is also symmetric and transitive), we would see the rule as the axiom, "If A = C and B = C, then A = B."

Even apart from theoretical mathematical terms, we can see that market realities would assure that "two things each equivalent to a third thing are equivalent to each other." If there were a disparity in the amount of good A which could be acquired by trading an amount of good B directly for A on one hand, or for an amount of good C which is then traded for a *different* amount of good A on the other hand, then wealth could be acquired simply by cycles of exchange, by circulating a starting amount of any good. Moreover, no one would trade directly for A if there was gain to be made by trading first for C and then for A.

(Of course the real world is less than ideal. For various reasons, including lack of perfect knowledge and varying local conditions, such disparities

sometimes exist. Disparity of price depending on location is always a reality; this rule of equivalencies is an abstract or conceptual one, most pertinent to trading on the same market or on a completely identical basis. Arbitrage, or trade in the currencies of various nations would be a good concrete example of this.)

In short, exchange value, and mathematical relations in general, are fairly transparent concepts. Both the meaning of the term “exchange value” and the method of discovering or measuring it for any given commodity are simple and straightforward propositions. Any attempt to endow the term with metaphysical subtleties, or to convert the method of determination of exchange value into a philosophical exercise, must be resisted.

The problem is to discover the law governing exchange value – the factors that go into making it reach a given level. Thus exchange value is like simple concepts in the natural sciences. For example, it is like velocity: it is not hard to give a clear and simple definition of the term "velocity"; and in ordinary (not sub-atomic) cases it is usually a straightforward job to measure an object's velocity. But to discover the factors that cause the velocity to be what it is – to discover the scientific law, the underlying regularity which governs velocity – takes far greater imagination and insight. It is easier to measure the speed a particular object attains after being dropped from a certain height, for example, than to discover Newton's law of universal gravitation.

The problem, then, will be in finding the operative generalization governing the magnitude of exchange value. It is always good to have the object of an investigation explicitly stated beforehand. This helps us ignore a lot of fancy maneuvering performed on the bare meaning of the concept under consideration.

Characteristics of Exchange Value

To recapitulate what has been said about exchange value so far: exchange value has at least this in common with physical quantities from the natural sciences, that it is an empirical phenomenon. It is objectively discernible; we can see the exchange of goods and services, and we can observe the relative proportions attained in these exchanges.

Moreover, exchange value exists independently of the observer, i.e. the economist. Like quantities studied in the physical sciences, it has an independent nature of its own, not subject to arbitrary definition or manipulation at will by the observer. It is the economist's job to discover its nature; it is not his task to invent a nature for it from scratch, or to approach it as an arbitrary logical category, subject to whatever rules and definitions one might like to prescribe for it. Exchange value must be approached scientifically, which means empirically.

Besides being an empirical phenomenon, exchange value is a *market* phenomenon. It derives from the fact of exchange, i.e. from economic activity as such, and is an offshoot or ancillary property of exchange: two goods are exchanged in definite amounts or a definite proportion, and that proportion is then termed the exchange value.

Exchange value must not be divorced from the notion of exchange; it always means "what you can get (or must give)" for a thing. Exchange value is the empirical notion of what a thing sells for on the market. We must not lose sight of that reality.

And, exchange value is a human or social phenomenon: again, it derives from the fact of exchange, i.e. from the economic activities of people. At this aspect exchange value diverges from the purely physical quantities studied in the physical sciences. While it is empirically observed and measured, like physical quantities, unlike them it is governed or determined by human behavior. Exchange value thus has a little of the nature of both natural phenomena and human or social phenomena.

Exchange value doesn't exist in nature; it is not a physical property or natural phenomenon. For economics itself does not exist in nature; economics is "something people do." For this reason we must be on guard against all purely mechanical or natural-science type explanations of exchange value. The factors that govern exchange value must always be, ultimately, human factors, human constraints. Any purely mechanistic, impersonal explanation of it *must* be specious.

All this must be said at the outset, so that we can first understand the nature of the phenomenon we will be discussing, before deciding what questions are pertinent to it and judging the plausibility of Marx's answers to any such questions.

Determination of the magnitude of exchange value

Now, moving from the definition and characteristics of exchange value, we can proceed to the subject of how its magnitude is determined. Marx notes that exchange value is "a quantitative relation"; it is the proportion in which various goods are exchanged for one another – "a relation constantly changing with time and place." (More to the point, it is constantly changing with conditions of supply and demand; but that is not the point here, nor would Marx accept that view.)

"Hence," he continues, "exchange value appears to be something accidental and purely relative, and consequently an intrinsic value, i.e., an exchange value

that is inseparably connected with, inherent in commodities, seems a contradiction in terms."

Marx's reasoning is not immediately obvious here. It is not easy to say in what sense exchange value is "accidental"; nor is it easy to judge exactly what Marx is ruling out in stating that exchange value cannot be "inseparably connected with, inherent in" commodities. (This kind of vague, ambiguous terminology is one of the things that make Marx's text hard to analyze with any degree of certainty.) And, it is not self-evident how his conclusion follows from what preceded it, as Marx indicates it does by his use of the word "hence".

First of all, we may perhaps accept the terms "accidental" and "purely relative," applied to exchange value, as somewhat hyperbolic expressions of the proposition that exchange value is not a fixed and constant property of the commodity itself. It must be hyperbolic, for exchange value is not literally *accidental*; it is not a purely random phenomenon.

On the other hand, it is indeed relative (but relative to what, Marx does not say); by its very nature it is an expression of the relative amounts of goods that are exchanged for each other. We can only speculate, and try to infer from the context, what Marx might mean, beyond that, by his comments.

Turning from what exchange value is to what it is not, we might say that indeed, a fixed and intrinsic exchange value for goods does seem a contradiction in terms. If Marx's point is that exchange value is not a fixed constant, and not an intrinsic physical property of the commodity itself, his statement is a truism. No one has ever thought otherwise, and Marx's point is then simply a statement of the obvious.

The notion of exchange value as an intrinsic, built-in property of commodities is strange, just on the basis of general common-sense principles, quite apart from questions of the validity of Marx's deductive argument. In fact it is strange that of all the possible views or explanations of exchange value Marx could have chosen to refute, he chose one never held by anyone, one so patently false as to be beneath serious consideration. A likelier candidate for his attention, if he had wanted to refute contradictory views, would have been the classical explanation of value: the theory that it is governed by the interaction of the "dialectical" forces of supply and demand. It would have been more to the point to show the reader how that viewpoint is wrong, rather than to dispel ideas no one ever had.

But Marx ignores classical theory entirely and occupies himself with shooting fish in a barrel, or attacking a straw man, before going on to issue his own explanation of value more or less as a bald pronouncement. He really gives no supporting data or arguments other than the implied one, "The first possibility (value as an intrinsic property) was incorrect, so my answer must be correct." This may be considered one form of what Marx termed "dialectical" reasoning: it

evades issues of substance while presenting a semblance of consideration of contradictory points of view. It is a stage-managed presentation that says "It's not A, so it must be B" – and that is the sum total of the support advanced for the conclusion.

Further Discussion

The passage in question can bear more detailed consideration. Marx writes in a rather elliptical, circuitous style at most times, and it may not be out of place to attempt to extrapolate from his text, to infer from it a precise interpretation of what he means by his vague, amorphous terms.

Marx says exchange value is a quantity "constantly changing with time and place," and "Hence," exchange value is a relative, and not intrinsic, quantity. In what sense does he mean this?

Let us consider the term "inseparably connected with." We cannot know how a particular value could conceivably be "inseparably connected with" a particular commodity, attached to a commodity so that the commodity would always have the same value. On the other hand, we can readily agree with Marx that such a situation indeed does not exist. We accept his logic that if exchange value is constantly changing, then indeed, a commodity cannot have a fixed value attached to it. If exchange value fluctuates, then there cannot be a fixed exchange value physically attached to the commodity, for such an unvarying physical arrangement would not be capable of fluctuating.

So while not understanding perfectly what situation he envisions, we are in agreement that the situation he speaks of can be ruled out. As for how this fixed value could conceivably be attached to the commodity, or what was the exact situation that Marx intended to dismiss, the possibilities are limited. The obvious way an exchange value could be a fixed quantity "connected with" the commodity and "inherent in" it, would be if exchange value itself were to be a physical property of the commodity, or if exchange value were directly related to such a physical characteristic. Either of these two possibilities could be construed as an exchange value "inseparably connected with, inherent in" commodities; either of them may have been what Marx meant to rule out by observing that exchange value fluctuates.

Besides the fact that exchange value fluctuates, we know that the physical properties of goods do *not* fluctuate – specifically, the physical properties which contribute to the usefulness or "use-value" of the goods do not fluctuate. Corn continues to be an edible grain, iron remains a hard, malleable metal, cloth remains a good material for making clothing, and so on. For all practical

purposes, the physical nature of commodities, their intrinsic useful physical properties, remain constant.

(Arguably, there is *some* fluctuation. In some growing seasons corn may for instance contain more calories, or more protein or minerals, per kernel than in others. But such variations are slight and obviously do not account for variations in exchange value.)

And this is probably what Marx is pointing out by his argument. Exchange value is something "accidental and purely relative" in that it is, first of all, not a physical property of the commodities, not a fixed part of their physical makeup; and second, it is not a direct expression or *function* of such properties. In short: exchange value is not a direct function of use-value; to that extent exchange value is "accidental and purely relative."

Another way of putting this is to say that there is no simple, direct relationship such as, "X amount of use-value translates into Y amount of exchange value." Use-value, because it is a matter (presumably) of the fixed and intrinsic physical properties of commodities, is itself a fixed constant; exchange value is not. Hence it follows that one does not determine the other. Thus just as there can be no universal rule predicated upon some particular physical property of the commodity (such as "exchange value is always proportionate to the weight" or "exchange value varies directly with the volume and inversely with the specific gravity," or some such rule), there can be no direct rule correlating exchange value and use-value. Use-value, along with the physical properties themselves on which use-value depends, is ruled out as the explanation of exchange value: that is the implication of Marx's argumentation in this passage.

We can see this all the more clearly from a later statement of Marx's; he says that exchange "is evidently an act characterized by a total abstraction from use-value." This is "evident" because of the statements we are considering here. And if exchange itself is unrelated to use-value, we may infer that exchange *value* is likewise.

Marx's chain of reasoning may be considered to proceed thus: exchange value fluctuates, but the physical properties of goods remain constant; and not only the physical properties, but the usefulness which they possess on *account* of their useful properties, remains constant. That is, their "use-value," in the general sense of their degree of usefulness, [*] remains constant.

[*] "Use-value" itself is a Protean term as Marx uses it. It means simple usefulness per se, but it also means the *amount* of usefulness (evaluated somehow). Confusingly, it can also mean *what* a commodity is used for (to eat, to wear, etc.); that is, it means usefulness in the sense of identifying the particular *use* it is put to. From this meaning Marx extends the term to be synonymous with "what a product is," since goods with different uses are, presumably, different commodities. Marx uses each of these meanings at various and unpredictable points in his text.

Therefore exchange value and physical properties, and exchange value and use-value, must be entirely unrelated.

In this light we can examine Marx's logic and his rhetoric more closely. His use of the phrase "accidental and purely relative" then can be seen as rhetorical overkill; it is stronger than what he has actually shown. After all, what he has shown is only that exchange value is not a fixed constant, i.e., not a physical appendage of commodities, and not a quantity derived from such physical appendages. While this may be true, even obvious, it does not justify going immediately to the other extreme of labeling exchange value "accidental."

Exchange value may fluctuate and yet not be a random or capricious phenomenon; and the term "relative," used without saying relative to what, is meaningless.

It is a common characteristic of Marx's "dialectical" reasoning that he is able to see only two possibilities, two contradictory extremes: the choice is heads or tails, all or nothing, with no option in between. Either exchange value is a physical phenomenon, fixed once and for all by the inescapable physical makeup of commodities, or else it is random, capricious, "accidental and purely relative." Since it isn't A, it must be B; since it isn't at one end of the spectrum, it must be all the way to the other, and there's no middle ground. Such is the crude and stilted form of Marx's "dialectical" reasoning.

Another aspect of Marx's line of reasoning that bears pointing out is the extremely sketchy and abstract nature of his logic. His discussion gives just enough of the pertinent facts to enable him to make the point he wants to. He reasons from an extremely limited amount of real-world data, expressed in the most vague and ambiguous manner. In saying that exchange value is "constantly changing with time and place," Marx tells less than is really known. He reveals only the bare minimum of what is reliably known about exchange value; he shows himself content to deal with only the broadest, most abstract generalities. He manages to avoid considering the merits of the theory of supply and demand entirely. Market data and human economic behavior are also omitted.

This vague, unfocused effect is furthered by his choice of terminology, itself highly general and ambiguous. Terms like "accidental" and "purely relative" are extremely vague; they convey little more than indirect indications or hints as to his precise meaning, from which the reader must extrapolate. And as we have seen, the terms "inherent in" and "inseparably connected with" are not much better. They can mean a variety of things: that exchange value is not itself part of the commodity in a physical sense; that it is not a direct function of such physical properties; that it is not a function of "use-value" in an abstract sense.

Such vagueness and such abstract terminology furthers Marx's argument; it allows him to present a semblance of exploring the facts of the matter, while actually touching only on such generalized abstractions as serve to advance his

case. He is able to construct and destroy a straw man without fearing that any theory actually dangerous to his own will be considered. As will become more and more apparent as we proceed, this gives his text a portentous, lofty-sounding air, but makes it actually like a soufflé – overblown, but hollow in the middle.

The "common something"

At any rate, Marx has made the point that exchange value fluctuates while use-value remains constant (and thus the two are entirely unrelated). Since use-value is not the answer, he must look further. He continues:

> Let us consider the argument a little more closely.
>
> A given commodity, e.g., a quarter [-ton] of wheat is exchanged for x blacking, y silk, or z gold, &c. – in short, for other commodities in the most different proportions. Instead of one exchange value, the wheat has therefore a great many.

It would be more accurate to say that it is the entire collection of these respective amounts of various commodities which, all together, constitute the wheat's exchange value. They all together establish the "quantitative relation" which is its exchange value; the entire collection of pairs of values forms the relation. Marx is taking an excessively narrow-focused approach toward the conceptual notion of exchange value: for him, each thing or each separate amount of a particular good for which the commodity in question may be exchanged, is a distinct exchange value. That is, the wheat is exchanged for x blacking, and this means that x blacking is one "exchange value" – one thing for which the wheat is exchanged; and likewise for y silk, z gold, etc. This is a naive conception of exchange value and of mathematical relations.

To continue with his text:

> But since x blacking, y silk, or z gold, &c., each represent the exchange value of one quarter of wheat, x blacking, y silk, z gold, &c., must as exchange values be replaceable by each other, or equal to each other.

As has been stated before, this means simply that the relation, exchange value, is a transitive and symmetric relation. That is, the relation of exchange value is a sociological or quasi-mathematical phenomenon which most closely resembles, in the realm of pure mathematics, the relation of mathematical equality. That is, the rules for this social phenomenon, mathematically speaking,

are really the rules for mathematical equality. And equality is a transitive and symmetric relation. That is, the axiom holds that, "If a = b and a = c, then b = c."

Similarly, if x blacking "equals" a quarter-ton of wheat, and x blacking equals y silk, then a quarter-ton of wheat must equal y silk; if the blacking and wheat are exchangeable, and the blacking and silk likewise, then the wheat and silk must be exchangeable. (As we have noted, there are practical reasons why this transitive and symmetric character of the exchange-value relation holds true, i.e., there are real-world reasons why the quasi-relation of exchangeability corresponds to the mathematical relation of equality.)

One lesson to be drawn from all this is that there is nothing special about exchange value in the equivalence of equal exchange values. "Two things, each equal to a third thing, are equal to each other" – that rule applies to all equivalence relations, i.e. all real-world situations that behave like the mathematical relation of equality. Thus this property of exchange value comes from no special peculiarity of exchange value, but is true by the inherent mathematics of all such situations.

Marx proceeds, drawing a conclusion from this equivalence of the various exchange values of a commodity:

> Therefore, first: the valid exchange values of a given commodity express something equal; secondly, exchange value, generally, is only the mode of expression, the phenomenal form, of something contained in it, yet distinguishable from it.

That sentence is a very model of equivocal language, but giving it our best attempt at interpretation, Marx seems to be reading much more into the facts than is warranted. The various valid exchange values express "something equal", no doubt; they express equal exchange value. They express *equality*: they express the fact that the wheat, blacking, silk, etc., are all exchanged on an equal basis, that they are deemed commensurate, that they are all of equal market value or purchasing power.

That is, someone with wheat to exchange considers a quarter-ton of it to be equivalent to, or a fair exchange for, x amount of blacking; and conversely for the owner of the blacking. Or more realistically, the sellers of each receive amounts of money such that the comparative values of x amount of blacking and one quarter of wheat are equal. (This ratio applies to all sellers of wheat and blacking generally, or in the aggregate.)

That is all there is to the matter – no conclusion about why such bargains are struck, i.e. why the two goods are exchanged at that particular rate, can be drawn from the mere surface facts as given.

What Marx means by saying exchange values express "something equal," is not just the obvious equality expressed in the exchange value. He means that the equality of the exchange values is an expression of something *else* equal about the goods, something besides exchange value and logically prior to it. His stance will be, that there is some other equality besides equal exchange value at work: there is some other factor or property whose presence in the wheat, blacking, etc., in various proportions determines what amounts of them will have equal exchange values. That is, there is something *else* about the wheat, blacking, etc. which was first equal, and this prior equality made their exchange values equal.

In this vein he continues, "exchange value, generally, is only the mode of expression, the phenomenal form, of something contained in it, yet distinguishable from it."

Marx does not put his case very explicitly here, but the minimum he is saying seems to be, “Exchange values were caused by something, they were made to assume the magnitudes they did by some causative factor, and not spontaneously.” This is an elementary notion; scientific thinking does not normally assume a given phenomenon is uncaused. The usual point of entry is to ask, "What are the factors that determine such and such a quantity or outcome?". Classical theory would respond with assertions about supply and demand, cost of production, and such economic considerations. Marx's statements so far imply something about his answer, too; but he answers on a much more mechanical level.

Marx advances a very primitive version of causation; exchange value is not explained with reference to social phenomena like market conditions. Rather, the answer is mechanistically self-contained in the commodities themselves. His answer can be read two ways: one, there is something equal in the commodity, a common *property* of them, which causes exchange value to be equal. Or two, speaking more metaphysically, the *relation* of exchange value, the fact of equality of exchange values, is itself an outward, "phenomenal" expression of a prior, inner-contained relation.

Marx is in danger of descending into metaphysical abstractions in the latter view – into a dialectic of unobservable and in fact imaginary categories and relationships. It is hard to impute a certain meaning to his remarks, but he apparently means that the "quantitative relation" which is exchange value is a superficial, surface, or "phenomenal" refection of something deeper. That something deeper is a prior and more fundamental, "something," which we can tentatively assume is another, "quantitative relation." To put it crudely, the exchange value of 1 quarter wheat is equal to x blacking because something else was first equal: something else about the quarter of wheat equaled something about the x blacking. It was this first, prior "something equal" which manifested itself in visible, "phenomenal form" as equal exchange.

Marx says that exchange value "is only the mode of expression, the phenomenal form, of something contained in it." Looking at that statement, it seems likely that what exchange value contains or expresses is another relation. We might provisionally say that Marx means, (equal) exchange value contains another equality *relation*, while the commodities themselves contain some physical *property* or factor in equal amounts, and thus have equal value.

That is what Marx is saying, but realistically, how does exchange value, a mathematical relation, "contain" anything else? The suggestion is speculative metaphysics; it is not an expression of any relationship or phenomenon which actually occurs in the real world. Certainly it is not a scientific approach to finding causative factors for given quantities.

Above all it is not the same as the concept of cause and effect. As that concept is conceived of, certain factors affect or determine other factors, quantities or events, in a dynamic, forward-moving (in time) manner. That is, because one quantity (e.g., an object's height above the ground) is of the magnitude it is, a second quantity (e.g., the object's terminal velocity when it falls) becomes what it is.

Classical theory of supply and demand and of exchange value is like that, at least at a rough approximation. But Marx's concept, or his explanation, is different; it is a more metaphysical, even mystical, concept, to the point of being almost a meaningless arrangement of words. His concept apparently envisions either an alternate *substance* within the commodity which determines its value (a common "something"); or an alternate *relation* contained within the relation of exchange value (which latter is its "phenomenal form"). It seems most likely that Marx means both, and indeed that the one implies the other.

In either case, this is not a cause-and-effect view, but metaphysical rhetoric. For one thing, there is no evidence to support his claim that that is how equality of exchange value is determined. Despite his implication that it is a matter of logical deduction, there is no "therefore" to it. He simply makes an unsupported assertion. And since the two elements he seeks to link (equal exchange value and some posited equal other entity) are not seen to have any visible connection (or even actual existence), his assertion is much in the vein of astrologers' assertions that events in people's lives are connected to the movements of the heavenly bodies.

That is, there is no observable evidence of any other equal "common something." And the scientific search for an explanation of equality – or more precisely, the search for an explanation of what governs a particular quantity's magnitude – is emphatically not couched in terms of "the search for a common something." His formulation is not the language of science, but the language of metaphysics or mystic gnosticism.

(One thing may be mentioned here in passing: the term "exchange value" tends, if one is not careful, to become almost a reified concept or a "nominalist fallacy". That is, it can be all too readily excessively concretized, almost becoming "a word for something which does not exist."

This is so because, while the term is useful, it sounds objective, as if it referred to a concrete or physical entity. When we speak of a "commodity's exchange value," it sounds as if we are referring to an objective property of the commodity, like its color. Exchange value is not really a thing or a static property; it is a result of the exchange of goods, in the course of which they are equated in certain proportions. Thus exchange value is not something each commodity *has* as a static property; it is a meta-characteristic of their exchange.

This is even more so with regard to supply and demand; the use of the two terms, and the act of graphing them to show how they combine to determine exchange value, makes them sound like physical quantities which we observe and measure under various conditions or at varied points on a graph. Actually, we can only *infer* what demand might be at various mathematical "points"; we know it for certain only at those points at which a good has actually been sold. That is, we only know actual demand from the act of selling itself; we can't measure demand apart from actual exchanges. So if an object currently sells for $2.00 and sells 10,000 units per week, we know the demand at $2.00 is 10,000 units. But we can only infer what its demand might be at $1.00, because it is not being sold at that price. Similarly, we don't know the supply at that price, because that is not its current price (and thus none is being supplied at that price).

Thus ultimately, to say that exchange value is determined by the intersection of the supply and demand curves, is to engage in quite a bit of conceptualization and extrapolation from the few actually-known facts.

At any rate, the picture of reality Marx now conjures up is the existence of a "something" within the commodity, the magnitude of which determines the commodity's exchange value; so that if goods are of equal exchange value, these equal exchange values express "something equal," the presence of equal amounts of this "something" within them. In this sense exchange value is an outward expression or "phenomenal form" of the inner something or inner equality-relation.

The presence, within goods, of various amounts of this common something constitutes an *a priori*, inner "quantitative relation," an unseen, Gnostic relation of which exchange value is a subordinate or secondary relation – a reflection in "phenomenal form." Goods are equal in exchange value because they were first equal in the amount of this "something" which they contain. (Note: the best real-world analogy to this might be weight, an outward, gravity-determined quantity, which is determined by the amount of mass contained internally by an object.

But that is not a perfect analogy; above all, weight and mass are both genuinely physical, or physical-related, properties, and they behave as such. Neither of them is a social outcome, like exchange value; the laws governing such entities are different.)

(It would seem by the same method of inference, and based on exactly the same data and process of reasoning, that if two goods contain equal amounts of this common "something," that is, if they have an equality-relation in it, then this must be because they were first equal in some *third* "something." The equality of the second "something" must itself be a "phenomenal form" of some third something, and so on in infinite regress. The second equality is analogous to the first; all the same facts are present in either case. However, we will not pursue this line of argument at present.)

Marx's line of reasoning

Assuming that the above is an accurate characterization of Marx's theory, we need to study next how he arrived at it. Marx's conclusion was, "Therefore, first: the valid exchange values... express something equal"; and, "exchange value... is only the mode of expression, the phenomenal form, of something contained in it..."

One of the above deductions is vapid and pointless, and the other is incomprehensible. But from what line of reasoning did Marx derive his "Therefore, first..."? That is the question.

He deduced his conclusion apparently from nothing more than the fact that one thing, for example a quarter of wheat, is exchangeable for a variety of different things in different amounts, all of which different amounts he terms different "exchange values" and all of which are equivalent. From these facts alone, he would have it, "therefore" the existence of a third substance can be deduced.

Actually, that commonplace fact in no way supports the conclusion he draws from it; there is no "therefore" to his discussion. Marx apparently has simply adopted his viewpoint as an assumed axiom or foregone conclusion. He manufactures it from whole cloth, with a variety of truisms and assorted irrelevant data thrown in to give an appearance of a line of reasoning, with the magic word "therefore" being inserted to present a semblance of deduced conclusion.

At least, if Marx does not adopt the viewpoint simply because he wants it, it is difficult to understand his actual reasoning. There is no logical or factual connection between the starting point of his argument and the conclusion. There

is no real logical path to what he attaches on the other side of the "therefore." At best one can only conjecture as to his reasoning, if any.

Retracing the argument: the wheat is exchangeable for a great variety of commodities in various amounts; or at least, its worth is expressible in terms of any other commodity. And therefore – nothing. There is no conclusion to be drawn from this fact, nor from the fact that all the various "exchange value" are equivalent; that is in the nature of *any* equality relation. There is nothing in the bare data to suggest how the various "exchange value" came to be what they are, or what economic factors determine a product's market value.

All we have before us is a truism, the commonplace facts of any equality relation. It is pointless to attempt to spin those simple facts into an elaborate theory. We know people exchange things, that they arrive at an estimation of equivalency or equal exchange *somehow*; the market, meaning the aggregate of people involved in exchange, finds some basis for establishing commensurability of exchange, some standard for determining how much of one commodity shall be exchanged for how much of another (or realistically, how much money each shall sell for). Bargains are arrived at on *some* basis, and our job is to find out what that basis is. But from the pedestrian observation that wheat is expressible in terms of a variety of commodities, and that all of these commensurate commodities are equivalent, no further advance can be made.

If we can conjecture as to what course of reasoning Marx did follow in reaching his seemingly unwarranted conclusion, perhaps the following is as close as we can come to it: a quarter of wheat, Marx may have reasoned, is exchanged for X blacking, Y silk, or Z gold. All of these are equal in exchange value to the wheat, and thus equal to each other. But there does not seem to be any common element among them that we can identify as making them equal: they don't all weigh the same, they don't look the same, they don't have any immediately obvious physical characteristic that we can identify as accounting for their exchange value.[*]

Since there is no immediately obvious property or characteristic that causes them to have equal exchange value, there must be some hidden or not-immediately-apparent characteristic that does so; there must be some characteristic that makes all these heterogeneous commodities commensurable on an equal footing. Since the answer is not to be found in surface events or

[*] And we might add, they are not all "x blacking". Marx speaks of an "exchange value" as an amount of one commodity – as if any commodity could have only one "exchange value," could be exchanged for or equal to only one thing. Thus if wheat is exchanged for X blacking or Y silk, that's two different exchange values – Marx seems to find great significance in this fact. Again, we would object that it is the entire set of which may be said to make up the exchange-value relation of a commodity.

surface physical characteristics, it must be found in phenomena not apparent on the surface.

That may have been his inchoate line of "reasoning"; but it assumes his most essential point – that equality of exchange value is caused by some physical factor within the commodities.

That assumption is not only unwarranted from the data Marx has presented, it is (as we now know) completely incorrect. Assuming we adhere to classical economics, we know value is determined by supply and demand. But be that as it may, above all Marx's assumption is unsupported by any facts.

In actuality, all Marx is entitled to give us, from the facts presented in his text up to this point, is not a solution or a definitive conclusion about exchange value, but only a statement of the problem. The question before us is how commensurability is established or determined – how such diverse and non-uniform objects as houses, wheat, silk, harmonicas and so on can all be assigned exchange values and thus by inference by exchanged on an equal or commensurate basis.

Or rather, the question is not how it *can* be done (as if we were free to devise a system ourselves), but how it *is* done, every day on the market. Taking the price of a house and the price of a harmonica (a particular house and a particular type of harmonica), it is possible to compute that, for example, "The exchange value of the house is 8,000 harmonicas.*

How can relative worth for such diverse items be determined? How is it done, as in fact it is? What is the standard of commensurability, or what factors influence the determination of exchange value? Those are empirical questions, and they must be answered in empirical, real-world terms – not with specious arguments trumped up from whole cloth, mere "dialectics" or verbal gymnastics.

To get a perspective on the question before us, it may help to turn to another author for a more thorough and explicit statement of the basic problem of exchange value than Marx's.

Mortimer Adler writes in *The Capitalist Manifesto*:

> So far as we know, Marx and Aristotle offer the only recorded solutions to the problem of how to commensurate the value of heterogeneous things in order to determine equivalents for the purpose of... exchange. [2]

Adler continues, explaining that for heterogeneous goods there is no obvious standard, no one characteristic which in the case of all commodities can

* These figures are chosen assuming a price of $8 for the harmonica and $64,000 for the house.

serve as a measure of their exchange value. We can't say for instance, "Equal weights of all commodities should be of equal value." The useful properties of different commodities are different; and commodities are measured in different ways. Edible things like wheat are measured by weight, and even so a pound of apples is not self-evidently equivalent to a pound of wheat. Moreover, houses aren't weighed and sold by the pound. There is no one property which can serve as a universal standard.

While there seems to be no one physical, objective standard, nevertheless heterogeneous goods are traded; their exchange values are determined. How is it done?

"Aristotle recognized..." Adler continues, "that we cannot equate qualitatively different commodities, unless they can somehow be made commensurable; but lacking any objective and common measure of their exchange value, he found that there was no way to commensurate qualitatively different things." That is a succinct statement of the problem.

Now let us switch for a time to Marx's voice. He has his own perspective on Aristotle's inquiry into this subject:

> He [Aristotle] further sees that the value relation which gives rise to this expression ["5 beds = 1 house"] makes it necessary that the house should qualitatively be made the equal of the bed, and that, "without such an equalization, these two clearly different things could not be compared with each other as commensurable quantities." "Exchange," he says, "cannot take place without equality, and equality not without commensurability."... Here, however, he comes to a stop, and gives up the further analysis of the form of value ["form of value" being a jargon term of Marx's]. "It is, however, in reality, impossible..., that such unlike things can be commensurable" – i.e., qualitatively equal. Such an equalization can only be something foreign to their real nature, consequently only "a make-shift for practical purposes."
>
> Aristotle therefore, himself, tells us, what barred the way to his further analysis; it was the absence of any concept of value. What is that equal something, that common substance, which admits of the value of the beds being expressed by a house? Such a thing, in truth, cannot exist, says Aristotle.

Marx, however, believes in the existence of this "common substance," and will reveal its identity to us. He says Aristotle lacked "any concept of value" because he would not find a common thing or substance which was every

commodity's value. Marx can find such a common substance, we are to understand, and he presents it as the physically incarnated "value" of commodities. This viewpoint is almost idiotically concretized; Marx proposes to "dissect out" the exchange value from within the actual physical confines of the commodity itself.

From this we can see how Marx's view of exchange value and Aristotle's can be characterized by Adler as the only two views of exchange value, as the only two explanations of how "the value of heterogeneous things" is compared. Marx's view is what we may call the organic, or internal, viewpoint: that there is something within the commodities themselves which serves to establish their value – some physical property or "common substance" whose existence in particular amounts in various heterogeneous commodities constitutes a quantitative relation of which exchange value is only "the mode of expression, the phenomenal form." This unseen, inner property actually serves to commensurate various amounts of different commodities; it is logically prior; exchange value is subsequent and dependent on it, and is an outward, observable expression of it, a "phenomenal form" – meaning that it is observable in the real world.

To the "organic" or "interval" theory of exchange value, we may oppose Aristotle's view, which indeed became the view of almost everyone else who considered the question until Marx. Aristotle considered what the common inner substance could be, and concluded that there in fact could be none, and that the key to the determination of exchange value lay *outside* the commodity.

As Adler sums this viewpoint up,

> [A] just exchange of qualitatively different things requires that they be of equivalent value. "All goods," Aristotle declares, "must therefore be measured by some one thing," and "this unit... is in truth demand, which holds all things together; for if men did not need one another's goods at all, or did not need them equally, there would be either no exchange or not an equal exchange." Aristotle admits, as Marx says, that it is impossible for the qualitatively heterogeneous to be made perfectly commensurate; "but... with reference to demand they may become so sufficiently."[3]

Aristotle's view thus was contrary to Marx's later one. He saw exchange value as externally-determined, not as a property or characteristic of the commodity itself, and not determined by any such property. His conclusions were remarkably insightful for the time, and despite all that has been added to

economic theory over the centuries, his basic explanation of exchange value as located outside the commodity retains a valid core.

To Marx's organic or interior theory, then, we can contrast Aristotle's external or social theory. Exchange value is not a purely physical or material phenomenon, reducible to the physical properties of goods. Exchange value after all is a result of human activity; it doesn't exist in nature. Exchange value is not a physical phenomenon, but a social one, determined by human interactions, i.e., markets; and it cannot be analyzed in purely physical, material terms like an analysis in physics of natural phenomena like mass, energy, velocity, and so on. Exchange value is external and social, not internal and physical.

Aristotle gives us no exact quantitative formula governing value: for nothing social, or human-determined, can be entirely reduced to mathematically rigorous and exact terms. It is impossible to assign exact, objective exchange values to heterogeneous goods, making them perfectly commensurated; "but... with reference to demand they may become so sufficiently" – or, as Adam Smith would put it, within the bounds of the "higgling and bargaining" of the marketplace, commensurability could be established.

In sum, then, Aristotle resolved on an external or social determination of exchange value, while Marx gave an "internal" view, one which was mechanistic or naturalistic, based on the perceived or deduced amounts of a "common substance." It will perhaps not be giving anything away to reveal at this point what Marx will later in his text identify as the "common substance." He says, "What is that equal something, that common substance, which admits of the value of the beds being expressed by a house? Such a thing, in truth, cannot exist, says Aristotle. And why not? Compared with the beds, the house does represent *something equal* to them, in so far as it represents what is really equal, both in the beds and in the house. And that is – human labor." (Emphasis added.)

Thus Marx not only sets out hunting the snark, he finds it. He equates his inquiry into the determination of exchange value to the search for a "common substance," and he identifies the substance: labor. (The reader may as well begin getting used to the notion of labor as a substance; it will be a central theme of Marx's text.)

If a bit of *a posteriori* reasoning may be allowed, the fact that in all the centuries between Aristotle and Marx no one had ever attempted to return to the internal, "common-something" view of exchange value, could plausibly be attributed to the fact that Aristotle was right – indeed compellingly, obviously right. The contrary view, Marx's view or what we might for convenience call the "pre-Aristotelian" view, has been, at least since the time Aristotle wrote, untenable.

(The term "pre-Aristotelian" is used, not meaning that anyone actually *held* the view before Aristotle wrote, but simply to distinguish it from views that

would have been respectable after he wrote. It is used to denote a view Aristotle considered and rejected, before going on to state his own view. An equally accurate characterization, in this day and age, would be the "Neanderthal" view.)

Marx however gives a different explanation of where Aristotle went astray:

> There was, however, an important fact which prevented Aristotle from seeing that, to attribute value to commodities, is merely a mode of expressing all labor as equal human labor, and consequently as labor of equal quality. Greek society was founded upon slavery, and had, therefore, for its natural basis, the inequality of men and of their labor powers. The secret of the expression of value, namely, that all kinds of labor are equal and equivalent, because, and so far as they are human labor in general, cannot be deciphered, until the notion of human equality has already acquired the fixity of a popular prejudice. This, however, is possible only in a society in which the great mass of the produce of labor takes the form of commodities [i.e., modern democratic-capitalist societies]... The peculiar conditions of the society in which he lived, alone prevented him from discovering what, "in truth," was at the bottom of this equality.

Thus Marx's patronizing and superstitious explanation of why Aristotle was prevented from finding the truth. This is an instance of a common approach of his, an example of a particular type of mystical sophistry to which he frequently resorts. The underlying assumption is that material things, physical externalities, somehow condition or influence what goes on in the intellectual realm, in men's thoughts. Marx adopts this anti-scientific attitude on no basis at all except that it fits the system of thought he wants to establish. He assumes it from whole cloth and clings to it, as if it were proven fact, with fanatical insistence.

It is actually a view much like astrology; it asserts that the conditions of external, material objects somehow have a controlling effect on the internal realm of human thoughts and behavior; it is like saying that economic externalities have "a mysterious power to cloud men's minds."

And thus we are shown Aristotle, unable to discover what was at the bottom of exchange value because Greek society had slaves! That is very convenient for Marx; by directing his remarks to the nature of Greek society and thus the supposed limitations it placed on Aristotle's thought-processes, Marx is able to condescend to Aristotle, to issue a patronizing *ad hominem* dismissal, without having to respond to the specifics of what he said. It is a shallow rhetorical maneuver, and a superstitious and anti-rational sophistry. (This is especially so

when we consider, as noted, that in the first place Aristotle gave the right response to the question of exchange value; Marx's theory is crude, stupid, Neanderthal).

To sum up then, Marx's theory of a "common something" displays his materialistic or naturalistic view of exchange value, which treats it as a result of some physical characteristic of the commodity. The fact that particular goods have equal exchange value expresses "something equal" about them – their possession of equal amounts of this common substance. The respective amounts of this hidden common something form a relation "contained in" exchange value, on which relation exchange value depends and of which it is an external, visible, "phenomenal" reflection.

Thus Marx's theory; it is a violation not only of classical economics but of modern science and the concept of causation. In contrast there is the view of exchange value as being determined externally and economically: by economic constraints and factors impinging on the people involved in trade, not mechanistically or by purely physical interrelationships (in a kind of quasi-physics of value).

Let us pick up Marx's argument again. He elaborates on his view of exchange value: "Let us take two commodities, e.g., corn and iron. The proportions in which they are exchangeable, whatever those proportions may be, can always be represented by an equation in which a given quantity of corn is equated to some quantity of iron: e.g., 1 quarter corn = x cwt. iron. What does this equation tell us? It tells us that in two different things – in 1 quarter of corn and x cwt. iron, there exists in equal quantities something common to both."

That is precisely what it does not tell us. As stated above, that assertion is produced from whole cloth – it is an assumption chosen by Marx with no basis in fact or logic. And in addition, it is an incorrect, wrong-headed and primitive view.

Having initially asserted his theory of the "common something," Marx does not immediately go on to identify the something. First he advances further evidence of its existence. He says that in two different commodities of equal value, "there exists in equal quantities something common to both. The two things must therefore be equal to a third, which is itself neither the one nor the other. Each of them, so far as it is exchange value, must therefore be reducible to this third."

Although the general line of argument in this passage is fairly clear, some difficulty arises from ambiguous terminology. Mostly, it is difficult to identify precisely the various "somethings" involved.

One possibility is that by "equal quantities [of] something common to both," he means equal quantities of exchange value. This would be carrying the material or organic view to even greater lengths: the fact that their exchange

values are equal means they contain, or "there exists in" them, something common, that being exchange value as an actual, physical entity. If this is the meaning, exchange value itself is represented as internal to the commodities (and not just the hidden property or "common something"). The point of Marx's proof would then be that, since each of the two commodities contains something (exchange value) in equal amounts, these "two things" must be equal to a third.

This third thing is the ultimate source of value, and it is the unidentified "common something." The "common substance" then is the third quantity, and by proving the existence of the third quantity, Marx proves the existence of this "common something."

However, an alternative view is perhaps more likely (though the reader can make his own choice; it is difficult to say with any certainty). This view is that, by the "equal quantities [of] something common to both," Marx means equal amounts of his unidentified "common something." (That, after all, is what is described as being *in* the commodity. Exchange value is external or "phenomenal," and an intrinsic, "inseparably-connected" exchange value is explicitly ruled out.)

In this view the existence of the two equal exchange values of the commodities *itself* indicates the existence of the "common something" (in equal amounts). Then, proceeding from the already-proven existence of the common something, Marx shows that these two things "must therefore be equal to a third, which in itself is neither the one nor the other." Thus in its turn the mystery factor or "common substance" must be "reducible to," or caused by, another, ultimate, third factor.

The ambiguity comes in identifying the "two things": did Marx mean it to refer to the two quantities of "common substance," or did he mean to refer back to the two commodities?

That is, he says that the existence of the two equal exchange values proves that "there exists in equal quantities" a common substance in both commodities; and then he says that therefore the *two things* must be equal to a third thing. He could have meant by that, the two equal amounts of "common something," must be equal to a third. Or he could have meant that the two things, the two *commodities*, must equal a third. (He could even have meant that the two equal exchange values must equal a third quantity.)

Let us assume that by the "two things," he meant the two quantities of "common something."

Then in this view we have yet another mystery factor. The two things, the two amounts of "common substance," equal a third thing which is neither of them. That is, there is another unidentified common factor. It only remains in such a case to identify, first, the "common substance," and next, the third thing to which the amounts of the "common something" are reducible.

(It may help make sense of this view to speculate as to the possible identities of these various "somethings". Marx may eventually identify the "common something" as "Value," which is described as a concrete, physical substance, distinguishable from exchange value; and the "third thing" as labor, which is the source and substance of all value. Or perhaps it may be the other way around; it is difficult to say at this point.)

A final note on the interpretation of this proof or line of argumentation:* Marx may have had in mind a mixture or combination of the two explanations above. He may have meant that the existence of two equal exchange values proves the existence of two equal quantities of a "common substance"; and that in turn these two quantities equal a third, *different* common substance (so that two different substances both receive the label "common something" – they are both common to all commodities, but are different substances).

It then only remains to identify the two respective "common substances."

This may in fact be the most acceptable view of what Marx meant; but it is sometimes a mistake to attempt to read into his text too much logical coherency. Often a better understanding of what he is saying is attained if we do not expect a high degree of rationality and consistency from him. The main point to keep in mind, at any rate, is the general outline of Marx's argument: he is proving the existence of some common factor, whatever its identity may be. From the fact that the common factor or property exists in equal quantities in the two different commodities, he deduces a third "something." That is, he asserts that "[the] two things must therefore be equal to a third," whose existence is thus proven.

In other words, the operative law is: Whenever two quantities are equal to each other, they are both equal to some third quantity and "reducible" to it. By invoking this implied law, Marx proves the existence of the third quantity or "substance," and states that it is this substance which accounts for the first two equal quantities, the equal exchange values.

The provenance of Marx's proof is fairly easy to see: it is of algebraic origin. In fact, his argument is a corruption of one of the basic axioms of algebra.

To recap, his proof could be expressed like this: in two commodities there exist equal amounts of some substance common to both (perhaps exchange value); that is, we have two equal quantities, A = B. These two quantities "must therefore be equal to a third," i.e., for some C, A = C and B = C.

It was this third quantity, C, which actually caused the equal exchange values all along: "Each of [the first two quantities], so far as it is exchange value, must...be reducible to this third." That is, A equals B because in the first place A

* I use "line of argumentation" as a useful euphemism for "proof." This is necessary because apparently a consensus of economists insists that Marx never resorts to deductive proof. Therefore I hesitate to identify any line of discussion in Marx's text as a logical proof.

equaled C and B equaled C. Thus C is the original, ultimate substance which is the source of exchange value; the equal exchange values (A = B) come about because first there were equal amounts of the third substance, because both A and B initially equaled C.

To put it in specific terms: in terms of exchange value, we are saying for example, 1 quarter corn = x iron. These "two different things," these two commodities, have equal exchange values. The fact that they do so means in the two different commodities there are equal amounts of the "common something". That is, "A = B" refers to the two amounts of "common something."

Then the fact that A = B implies that these two things, meaning A and B, the corn and the iron, or the *values* of the corn and iron, are "equal to a third" thing. The "two things," the two amounts of "common substance," both equal a third thing or substance (that is, A = C and B = C). This third thing is the amount of the ultimate value-causing factor.

In sum, the fact that A = B (the amounts of the "common something" are equal) proves that A equals C (C being an amount of the other mystery factor), and likewise B equals C.

For a best guess at identifying these entities, A and B (of the first "common substance") are amounts of "Value"; and C, the third factor, is "homogeneous human labor."

Regardless of what the various substances or letters stand for, the logic of this proof is mangled algebra. Marx's axiom, if we may label it such, is "If A = B, then there must be C such that A = C and B = C." That is a corruption, a malapropism, of a genuine axiom, "If A = B and A = C, then B = C." Marx has it just backwards.

The real axiom, to repeat, is "If two quantities are each equal to a third quantity, they are equal to each other." Marx renders it as, "If two things are equal, it is because there is a third thing to which both were first equal." That is a puerile misstatement, a mistake on an elementary level.

The real algebraic axiom is easy to understand. It comes from the basic nature of the number system itself, and is studied by all pupils at an early age. The axiom is intuitively compelling, and it comes into play in many and varied fields of mathematics.

For example, if a + 2b = 17, and 3a + b = 17, we have two different quantities or expressions which are both equal to 17. We are then justified in saying a + 2b = 3a +b. "Two quantities, each equal to a third quantity, are equal to each other": that is an axiom we can always rely on.

What conclusion can we draw from the fact that one quantity equals another, or A = B? From the bare fact that, say, x + 2y = 5? Nothing – or at least not

Marx's conclusion that A = C and B = C.* For what he is really saying is that whenever A = B, *there is* some C such that A = C and B = C. That is an unwarranted assumption.

If we know that $x^2 = y + 3$, for instance, what is the third quantity to which both x^2 and $y + 3$ are equal? There isn't any third quantity; you would have to pull it out of your hat. Marx's implicit axiom is a fallacy, and a mathematically illiterate fallacy at that. In economic terms, we can see the validity of the genuine axiom. If one quarter corn is exchangeable for z gold, i.e. if 1 quarter corn = z gold, and if 1 quarter corn = x cwt. iron, then z gold should be exchangeable for x cwt. iron. There's no great mystery in that.

Or, again: if 1 quarter corn sells for $180, and z gold (whatever the amount z is) sells for $180, then we say the gold and the corn are equal in exchange value, and we would expect them to be directly exchangeable, should anyone want to do so.

But try to illustrate Marx's inverted form of the axiom; if 1 quarter corn = z gold, then what? The only inference that can be drawn from this fact is the fact itself: that for whatever economic reasons, the present exchange value of 1 quarter corn is equal to z gold. That is *all* that can be deduced from the simple fact of exchange at the given relative amounts.

To repeat: if the exchange value of 1 quarter corn is the same as that of z gold – i.e., if 1 quarter corn and z gold are equivalents – what is the third factor to which both are equal? If 1 quarter corn = z gold, what is the c, the third quantity such that 1 quarter corn = c and z gold = c? There might be such a quantity, but simply from the facts as given, we don't know it. One has to invent it, conjure it up, pull it out of a hat; or else look at the market to find another quantity by observation (not by deduction from the given facts).

The fact that 1 quarter corn = z gold doesn't imply or give evidence of any such third quantity. It is a simple, "naked" fact: corn and gold are being exchanged at that relative rate. We don't know why; and no third quantity is involved.

Of course, one is tempted to say, "But if x iron also exchanges for z gold, then that is the third quantity; both the quarter corn and the z gold are equal to it. And the same applies to a money amount; in fact, any third quantity equal to either one would equal the other."

However, that is just to revert to the genuine axiom, with an additional statement; you're adding the information "x iron = z gold." From "1 quarter corn = z gold" and "x iron = z gold," it does follow that both 1 quarter corn = x iron and z gold = x iron.

* We do have the axiom, If A = B then B = A (commutativity).

By the terms of Marx's argument, any time two quantities are equal, it is because they first equaled a third quantity; both are thus "reducible," or imputable, or equateable, to the third, which was their first, primordial cause (or some such meaning is presumably intended by Marx's ambiguous usage). That is all he has to work with, literally all the facts that enter into his discussion.

Using Marx's axiom, presumably we could draw the same conclusion in any other situation, not just an economic one. Every equality would send us on a wild-goose chase for the third, hidden factor. If my age equals your age – if I am equal to you in age – presumably it is because both of us (both of our ages?) are equal to some other, third quantity, of which we are a "phenomenal form" and to which we are reducible. (One is tempted to say, Yes, the third quantity is time, or a number of years. But that's not a separate, *third* quantity. That's the numeric expression of the first two quantities – they must be expressed so, for that's how we know they're equal.)

Or, we could infer that if one dollar equals half an English pound, this fact expresses "something equal"; the equality of the dollar and the half-pound is a "phenomenal form" of some relation "contained in it"; and the equation "1 dollar = 1/2 pound" tells us that there exists in the dollar and the half-pound equal quantities of something common to both; these equal quantities then equal a third, to which both the dollar and the half-pound are reducible. What is the third quantity? Deutchmarks?

It might be tempting to identify the "common something" "contained" in a dollar and a half-pound as buying power. In a practical sense there might be some logic to that; perhaps the fact that a dollar equals a half-pound has something to do with their respective amounts of buying power. Buying power may have something to do with exchange rates – but historically, it has not had a clear-cut relationship to them. But again, such a relationship is not contained in or implied by the simple fact that "1 dollar = 1/2 pound."

The real problem is Marx's whole method, his use of a fractured algebraic axiom to impose his will on real-life situations, to compel the issue by force into a definitive solution, to make logic "compel the facts." The simple fact is that whenever quantities are equal, no such deduction as Marx's can be made about inner, motivating, third "somethings." The reason two quantities are equal, whatever the quantities are, is a matter for factual investigation. No such categorical, contrived universal explanation as "the two entities contain equal amounts of a third substance," can be offered.

In Marx's mangling of mathematical axioms, he fails to understand what it means to assert a factual cause-and-effect relationship, or what it is to identify the real-world causative factors behind a relationship like "1 dollar = 1/2 pound." He seeks a logically-deduced, categorical answer, and in doing so he

demonstrates a complete lack of understanding of the basic framework of scientific investigation.

Marx deduces the existence of the third, hidden factor, from literally nothing but the equation "1 quarter corn = x cwt. iron." By sheer force of logic he imposes a rigid, conclusively proven rule explaining exchange value: it is due to the amount of some third "something" contained by the two commodities. He thus seizes a strangle-hold on what the reader might naively have assumed was a matter for empirical investigation; by fancy footwork, rhetorical gymnastics, and specious deductions he imposes a categorical solution on the question of what determines a good's exchange value. The principle is, "Logic can compel the facts." Without ever leaving his armchair, without any factual investigation at all, Marx deduces an answer which, he would have it, real-world economics has no choice but to obey – for deductive logic, if valid, must be conclusive.

This method is more akin to mysticism or sorcery than to science. He conjures up far too much result from the scant facts he deals with; there must be a trick to it somewhere. He looks at the simple fact that A = B and perceives the most dazzling implications, coruscating complexities, multi-layered insights: a veritable three-ring circus of implications. And he develops this complexity into universal rules; he works up mere words into the consistency of scientific truth.

The problem is that all that complexity, all those hidden depths of implications, is not there in the equation itself. Truly Marx was a visionary – he could see unseen things. But the line between visions and hallucinations is a thin one.

A Geometrical "Example"

Not content with butchering algebra, Marx goes on to fracture geometry with this "illustration":

> A simple geometrical illustration will make this clear. In order to calculate and compare the areas of rectilinear figures, we decompose them into triangles. But the area of the triangle itself is expressed by something totally different from its visible figure, namely, by half the product of the base into the altitude. In the same way the exchange values of commodities must be capable of being expressed in terms of something common to them all, of which thing they represent a greater or less quantity.

To review the illustration: will make what clear? It will make clear the fact that two equal quantities, first, imply equal amounts of a "common substance,"

which then in turn are the result of or "reducible to" a third quantity. Or more specifically, it will make clear that the existence of equal exchange values implies equal amounts of (perhaps) "Value," which in turn are due to a third factor, perhaps "homogeneous labor." But now we must see how this fits into the geometric example, which entities represent the "common substance" and the third "something," and so on.

It is hard to make coherent sense out of this, but perhaps we can discern the general contours of Marx's meaning. His overall point, again, is something like, "When two quantities are equal, there is a third quantity to which both were first equal." Or, "If A = B, then A = C and B = C."

(Let us not try to be too rigorous and literalistic, by attempting to work in the two intermediate "common somethings" too; it doesn't work, and anyway Marx is never to be held to that kind of consistency.)

In broad terms, Marx first introduces two quantities: one, the area of the polygon as a whole, and two, the area of the triangles made from it (that is, the sum of these areas). We want to calculate the area of a rectilinear figure – that is the first quantity.

(Or is the overall area two quantities? There is at least one alternative interpretation of Marx's "illustration": it may be that by the first two equal quantities, Marx meant the areas of two *different* polygons. He speaks of the effort to "calculate and *compare* the areas" of polygons; that phrase could indicate that he meant to start with two polygons of equal area [analogous to the two commodities of equal exchange value].

That is, the first two quantities might be the areas of two different polygons. These two areas would in turn equal the sum of the triangles made from each, which sums would in turn be reducible to amounts of "1/2bh." This confusion, this chain of equal quantities, in a sense parallels the original confusion in the case of exchange value, with overlapping and obscure references to exchange values of commodities, contained "Values" of commodities, and so on.

This however is another, entirely different thread of argumentation, which we will not follow up on here. It is probably useless to seek an exact answer as to which view is correct. The criticism of Marx's "illustration" which follows would be equally pertinent in either case.)

We will assume then that the first quantity is the area of the single polygon, and the second is the areas of the triangles – that is, the sum of the individual areas of the triangles. These first two quantities correspond to the two equal exchange values.

These two quantities are equal. The reasoning then proceeds, Since A = B, there must be a third quantity C to which they are "reducible". And in this role Marx places 1/2bh, that is, half the product of the base and the height (of each triangle in turn – the "1/2bh's" would also be summed). Thus we see that

whenever there are two equal quantities, they are "reducible to" or due to a third quantity.

Let us then examine Marx's example. In it, the first quantity, the one we want to calculate, is the area of the polygon, which we will denote as A_p. We divide the polygon into triangles by drawing straight lines connecting vertices, and we then know that the area of the polygon equals the sum of the areas of the triangles, or $A_p = S(A_t)$.*

Here are our first two equal quantities – the whole area equals the sum of the constituent triangles' areas. So, having these two equal quantities, we know there must be a third which accounts for them, or "...the area of the triangle itself is expressed by something totally different from its visible figure, namely by" – 1/2bh. The third quantity then, or the third "substance" to which both the first two are "reducible," is 1/2bh – both the whole area and the areas of the triangles are reducible to definite amount of "1/2bh," definite quantities of the substance "1/2bh."

One thing which allows, or perhaps causes, Marx to construct preposterous arguments like this one, is his vague, highly imprecise terminology. For example, the area of the triangle "is expressed by" 1/2bh. Does he mean "equals" 1/2bh, or "is the same as" 1/2bh? Or perhaps "is due to or caused by" 1/2bh? Does he mean it "makes its influence felt in" 1/2bh – i.e., determines it? The phrase, which corresponds to his statement that exchange value "is reducible to" a third substance, is too ambiguous to serve as a basis for scientific argumentation. (What he is presumably attempting to show is that the quantity of 1/2bh's determines the area of the triangle – that it is the prior cause of the first two equal quantities. But of course, that is only conjecture.)

In reality, what Marx can validly say is that the area of the triangle is calculated by 1/2bh. In other words, there are not two separate quantities involved here, two quantities which Marx is showing us are equal; there is not one quantity caused by another, in the same manner that exchange value is putatively caused by the amount of the third "something." The area of the triangle and 1/2bh are the same quantity, the same "substance" – 1/2bh is just one way (among several) of calculating the area of the triangle, it is a formula for deriving the area. It is neither a third quantity nor a substance.

(Another way of finding the area of a triangle is the method of "exhaustion"; you begin filling the triangle – or indeed the polygon – with small squares, then adding the areas of the squares; repeat the process with smaller and smaller squares, to the limit of the precision required. This sort of thing is sometimes done in integral calculus, as an introduction to the topic of the "definite integral." It is called the "method of exhaustion" for finding the area under a curve.)

* The sum should more properly be denoted $\sum A_t$.

There is not in this example one property or "substance" whose presence in two things in a certain magnitude causes two other quantities to be equal. Triangles don't have a certain area because they contain a certain amount of the substance 1/2bh; they have a certain area because they are of a certain size and shape, which when calculated, yields that area; "1/2bh" is one way of calculating the area.

In sum, we have a formula for finding the area of a triangle, and a method, using the formula, of finding the area of a polygon. The polygon itself has only one area; it is one quantity, not two.

Referring again to the broader view of Marx's geometrical example, Marx needs to show that two things possess an equal amount of some attribute (like exchange value) because they have within them the same amount of some third "common substance." In the present example, we have a polygon and the sum of several triangles. These two things contain equal area, we are informed, because they both contain an equal amount of "1/2bh," which is the third substance.

This is Yahoo mathematics, to go with Marx's Yahoo science. In finding the area of the polygon there is one quantity only: its area. There are other, smaller sub-quantities: the areas of the component triangles. The sum of the areas of the triangles is identically the same as the area of the polygon – there are not two different quantities there. And 1/2bh is not a "substance" in its own right, but a formula for the area of part of that polygon (one triangle).

(If Marx means to compare the areas of two polygons, then we have first those two quantities – the area of one polygon equals the area of the other. Then those two quantities are equal because the contain equal amounts of a common substance, namely areas of constituent triangles [taking a guess at Marx's meaning]. The areas of the triangles are "reducible to a third" substance – 1/2bh. Comments about the validity of using 1/2bh as a separate quantity, and as a "substance," apply in this case also.)

The main problem with Marx's geometrical illustration, then, is (and here it is necessary to speak in general terms) that it is completely malformed, inapt and preposterous, and in no way illustrates what he thinks it does. Some other specific problems can be picked out of it, however.

For one thing, Marx completely leaves out any acknowledgment that what he is speaking of is the *sum* of the areas of the triangles; that is what equals the area of the polygon. Instead he gives this sequence of statements: "...we decompose them into triangles. But the area of *the triangle itself* is expressed by" 1/2bh's. He skips directly from dividing the polygon into several triangles, to discussion of one triangle. There is a sort of missing cog in his logic – we cannot exactly be sure what it would have looked like if he had continued discussing "the triangles," "the sum of the areas of the triangles," and "the sum of 1/2bh's." Marx has left out a step which seems necessary; he jumps from several triangles

(equaling the area of the polygon) to one triangle (equaling an amount of ½ bh's) without making explicit the logical connection between the two.

Perhaps this is not a fatal error, but it does demonstrate a certain sloppiness, and a lack of consideration for his reader. Moreover, it show that his analogy to exchange value is imperfect.

Then again, in saying that the area of the triangle is equal to "something totally different from its visible figure," Marx is making nonsense of geometry. The visible figure, the "construction" or drawing of the triangle, has nothing to do with the issue. It is only a paper-and-pencil representation of the idealized, mathematical triangle. The "visible figure" counts for nothing. It is the area, calculated mathematically, that we are concerned with; and that equals 1/2bh, regardless of any more-or-less imperfect drawing of the triangle. The "visible figure" is inessential; it could be left out entirely. Area is never "expressed by" the visible figure; the figure is just an aid to the geometrist in conceptualizing the problem.

The drawing or construction of one triangle is not the second quantity; nor is the entire collection of the triangles' representations or "visible figures." Marx may mean only that the *area* of the triangle is something different from ("is expressed by something...different from," in his equivocal phrase) the *triangle* itself. This is granted; indeed it is a trivial point. Marx perhaps finds something significant in it, but he only clouds the issue by introducing the "visible figure" – as if the visible figure were a separate entity in its own right, distinct from the triangle. Such is not the case; the triangle is simply a crude representation of the triangle; it is certainly nothing beyond or outside of the triangle.

And finally, as a third quantity or "common substance," 1/2bh doesn't measure up. It is not a substance; triangles don't contain an "amount" of the substance 1/2bh. It is a formula for calculating the area of a triangle, and is not itself a distinct entity separate from that area.

Marx's argument presumably is that the third substance which the polygon and the triangles contain in equal amounts is "1/2bh." He starts with the area of the polygon and the area (i.e., the sum of the areas) of the triangles: $A_p=S(A_t)$. These two quantities are due to a third substance: the equality relation is a "phenomenal form" of another, and that one is the relation of equal amounts, contained in the polygon and the triangles, of the "common substance" 1/2bh. Thus the fact that the first two quantities are equal is shown to be due to the fact that both the polygon and the triangles contain equal amounts of "1/2bh"; or A_p = X amount of 1/2bh and $S(A_t)$ = X amount of 1/2bh.

This is arrant nonsense. The whole example is a mutilation of geometry, involving a reification or hypostatization of "1/2bh" into an independent entity, among other fallacies.

Ultimately, what Marx means to show in his illustration is, "If two quantities are equal, there must be a third quantity to which they were first equal." His geometrical example fails to show that. What his example really shows, if anything, is, The whole is equal to the sum of its parts. Other than that, no sensible point is made by it.

It doesn't even rise to the level of susceptibility to criticism. As one author remarked,

> According to Bertrand Russell, some propositions lack even the capacity to be false, by which he meant that they are too shapeless to be refuted... Karl Popper argues along the same lines: only a statement that has a minimum degree of coherence can be proved false.[4]

Marx's fractured geometrical "example" is just that sort of sub-coherent prose.

Remaining Issues

Some issues previously addressed deserve further consideration. There is for example his phrase, "capable of being expressed in terms of." This is part of the vague, undifferentiated rhetoric which alone enables him to make his case. Perhaps such rhetoric was a carry-over from his background in philosophy; he never acquired the ability to address scientific matters in a precisely delineated manner.

At any rate, to say that something is "reducible to" something else or "capable of being expressed in terms of" it, is not to say that it is determined by, or is caused by, or is a result of that something else. It is perhaps true that one quantity can always "be expressed in terms of" something else; but that does not demonstrate a one-to-one correspondence or a cause-and-effect relationship. The area of a triangle can be "expressed in terms of" 1/2bh; and when you actually calculate 1/2bh, that in turn can be "expressed in terms of" a single real number. But that fact does not demonstrate any such relationship as Marx indicates. Likewise, the exchange value of any given commodity can (*presumably*) be "reduced to" or "expressed in terms of" either a quantity of labor; or an amount of money; or even a quantity of hog jowls. This does not prove that "Whenever two quantities are equal, they both first equaled a third quantity." It doesn't prove exchange value is caused by or is a "phenomenal form" of the amount of either labor or hog jowls contained by commodities. If Marx had ever had to put his

arguments into precise terms, his whole theory would have been impossible to maintain.

One other topic perhaps deserves treatment, perhaps as possible substantiation for Marx's thesis. Area can be conceived of as the number of small squares of known area which can fit into a plane figure. For example, we may choose to divide a figure into a grid of squares of length .01 on a side; the area of each square is then .0001 square units. To calculate approximately the area of a figure, divide the figure in that manner and count the squares; multiply by .0001 to find a total area.

Does the fact that this can be done prove that area is composed of some other "substance," but this time s^2 (s being the length of one side of the square), not 1/2bh? No, area is composed only of – area. The dividing of the region into squares is only a tactic, a mathematical method of calculating the area. Area is not composed of s^2, any more than it is of 1/2bh.

All this is to say that the calculating of mathematical quantities doesn't cause third "substances" miraculously to appear; mathematically speaking, the calculation of area is not envisioned as a process of measuring the amount of a "common substance" contained by figures. That is Yahoo math, a mathematically illiterate viewpoint.

Marx's Method

In sum, Marx's proof, or "demonstration" (if there are no proofs in Marx's works) of the existence of a third "common something" accounting for any two equal quantities is preposterous. He simply adopts the "pre-Aristotelian" view as a chosen assumption, explaining exchange value by reference to a contained substance or common attribute. There is no logical justification for it, and in fact it is a witless and atavistic viewpoint.

Now let us backtrack to examine certain earlier points of Marx's analysis.

Review

In his elaboration of his labor theory so far, Marx has made two main points: first, that use-value is not what determines the magnitude of exchange value; and second, that what does determine exchange value is some "common substance" or property within the commodities themselves. His reasoning proceeds this way:

he first shows that exchange value is "accidental" and "purely relative," in that it is not a constant magnitude "inseparably connected with" a commodity. To put it another way, exchange value is not a physical attribute of the commodity, and not a direct result of such an attribute.

Next, he shows that exchange value is nevertheless due to "something equal" about commodities, some "common substance" contained in all commodities in definite amounts; exchange value is determined by the amount of this "common substance" and is in fact a "phenomenal form" of the magnitude of this internal substance.

Having established all this, Marx can proceed to identify this unknown inner substance. That is the point his text has reached so far; we will now form a broad view of that much of the argument before proceeding further.

One striking fact is that Marx's argument has almost nothing in common with the modern scientific method of investigation. It is above all not a search for the facts of the matter; there is almost no gathering and analysis of factual data, no reference to experiment or observation designed to verify or refute a hypothesis. In particular, it is not an attempt to discover empirically what objectively-discernible factors govern the magnitude of exchange value.

Rather, what Marx gives us is a deductive argument, applied to a starting position of a minimal set of selected facts and arbitrarily-chosen axioms.

Broadly speaking then, Marx's text is a path of logical deduction within the context of an arbitrarily-constructed theoretical system. In this sense it is a throwback to the methods of previous ages – methods of purely mental and logical investigation in an "ivory tower" or armchair environment. These methods (as one author expressed it) "subordinated sensory observation and promoted the abstract at the expense of the practical. "[5]

The same author aptly described the method of armchair theorizing, which was adopted by the Schoolmen, as what results when "science is regarded merely as cerebration or introspective thought-process." [6]

That is a perfect description of Marx's method: "science regarded merely as cerebration or introspective thought-process." Marx reasons deductively, from chosen premises, within his created, closed system; not inductively, from a mass of pertinent objective data – i.e., not scientifically.

We have seen the general outline of Marx's argument. The facts on which he builds his theory of exchange value (if they deserve to be called facts) are first, that exchange value fluctuates; and second, that use-value, or the useful physical properties of goods, does not. Beginning from this slim basis in facts, he embarks on a series of deductions, some based on those "facts" and some (like his adoption of the "pre-Aristotelian" view of value) assumed out of thin air. Deduction builds on deduction, with each successive theorem being based on those which preceded it. In this sense Marx's approach is like mathematics, with

a set of initial axioms, and proceeding by the deduction of each successive theorem from preceding theorems and axioms.

A minimal or vestigial set of facts, tendentious deductive logic applied to those facts, arbitrary assumptions presented as logical deductions drawn from previously-established points – these are elements of Marx's investigation, along with a steadfast blindness to any inconvenient facts.

One author, Eugen von Böhm-Bawerk, has commented on the nature of Marx's work, in *Karl Marx and the Close of His System*. He said,

> The fundamental proposition which Marx puts before his readers is that the exchange value of commodities... finds its origin and its measure in the quantity of labor incorporated in the commodities.
>
> Now it is certain that the exchange values, that is to say the prices of the commodities as well as the quantities of labor which are necessary for their reproduction, are real, external quantities, which on the whole it is quite possible to determine empirically. Obviously, therefore, Marx ought to have turned to experience for the proof of a proposition the correctness or incorrectness of which must be manifested in the facts of experience; or in other words, he should have given a purely empirical proof in support of a proposition adapted to a purely empirical proof...
>
> Now Marx, instead of proving his thesis from experience or from its operant motives... prefers another, and for such a subject somewhat singular line of evidence – the method of a purely logical proof, a dialectical deduction from the very nature of exchange. [7]

Thus it is that one of the first things that strikes a reader about Marx's exposition of his labor theory of value, is not what he says but what he does not say: his failure to present factual data, and his whole approach to his subject as a matter for logical and "dialectical" reasoning, not factual inquiry.

This "dialectical" method, or this method of deductive logic, has been shown to be totally inadequate for discovering objective, scientific facts. Since the development of the modern scientific method, it is a great wonder that anyone would have had the effrontery, or perhaps ignorance, to revert to it again. Even when used honestly, and not accompanied by specious logic and deceptive rhetorical maneuvers, it is inadequate for investigating factual matters.

In fact, we can analyze the "dark ages" and the decline of scientific inquiry, with its subsequent rise again, in terms of the deductive, as opposed to inductive,

method of investigation. According to *Man and the Cosmos* (a general, survey work), science, in the sense of factual investigation, was not unknown to the ancient Greeks:

> [T]here was in Greece one, Anaxagoras... in whose works we can identify what we now accept as the scientific method... [H]e gave laboratory demonstrations, prepared a written account of his physical theories, and published it as a treatise on natural philosophy...
>
> Anaxagoras asked the questions we still persistently ask 2,500 years later. What is the nature of matter? What are the fundamental properties of the substances that make up the world around us?...
>
> In pressing these questions Anaxagoras reconciled what one might call the Babylonian method of strict and detailed observation with the method of logical analysis being formulated in the Greece of his time.

However, the author continues,

> [The account of Anaxagoras] has been given as a reminder that what we are so often disposed to call "modern scientific method" existed in its essentials 2,500 years ago. It went astray because of the Platonic enthronement of the intellect that subordinated sensory observation and promoted the abstract at the expense of the practical. (Experiment was popularly held to be for rude mechanics and not for the intellectual aristocracy.) This carried over into the age of the Churchmen and the Schoolmen, many of whom sought to discourage inquisitiveness as a threat to belief and dogma.[8]

That describes Marx's method perfectly – deductions from self-evident (at least to Marx) premises. It is useful to ask ourselves how such a method as his, reverting to the practice of the centuries before the arrival of modern science, ever came to be deemed "progressive."

At any rate, experimental science passed out of favor. This was unfortunate, because:

> Science depends on the power of observation, and observation means contact with external events or natural phenomena through the senses. When (as happened with the

> Schoolmen) science is regarded merely as cerebration or introspective thought-process, it becomes stagnant...
>
> [Previously,] Saint Augustine (A.D. 354-430) had dominated the thinking of the centuries with his injunction "Go not out of doors. Return into yourself; in the inner man dwells truth." There were some, however, like William of Occam, John Duns Scotus, and Roger Bacon (all Franciscan friars) who had "gone out of doors" and had insisted upon observation and experimental proof. [9]

Ultimately, in contrast to the Scholastics' method,

> Sir Francis Bacon can be fairly said to have resurrected the scientific method by insisting on experimental investigation. ... His writings... spell out what now are widely accepted principles of modern science, rejecting the *deductive*, or thinking-off-the-top-of-the-head principle, in favour of *inductive*, or take-off-your-coat principle. He insisted that the man of science must *observe* and choose his facts; he must form a *hypothesis* that links them together and provides a plausible explanation of them; and he must carry out numerous checks or repeated *experiments* to support or deny his hypothesis. [10]

In sum,

> When, therefore we speak of "modern science" and date it from Francis Bacon..., all that we are saying is that he rescued science from obscurantism, *i.e.*, cerebration without imagination, and reinvoked the importance of sensory information... [11]

Elements of Marx's method

We might then enumerate some of the elements of Marx's argument. There is the fact that exchange value varies; there is the quasi-fact that use-value (however defined and however measured) is constant – presumably a logical deduction from the fact that physical properties are constant (but not necessarily a valid deduction).

Then there is his first main deduction, that exchange value is completely unrelated to use-value – not a valid deduction.

And there is the one overarching assumption, passed off as logical deduction: that exchange value can only be caused or determined by "something in" the commodities, a common property or substance. The path to that deduction was convoluted and abstruse, involving specious pseudo-mathematics (namely, a proof that *whenever* two quantities are equal, it is a result of a third "common something"). Actually Marx adopted the premise from whole cloth, and it is false. It is however very useful for his text.

In the light of this his major assumption, we see why Marx feels compelled to discuss and dismiss use-value as a possible explanation of exchange value. Use-value is in some sense "internal" to the commodity. If not exactly a direct physical attribute of it – we cannot see usefulness within the commodity or dissect it out – it is at least *related* to physical properties; the commodity's usefulness to people is a result of its physical properties, and thus use-value is at least a semi-physical property. It is closely related to physical properties, and thus a rival which had to be taken care of first.

At the same time, Marx's "pre-Aristotelian" viewpoint excludes from consideration such unwanted, alien views about exchange value as that it is controlled or determined from outside the commodity (by such factors as market conditions, or as Aristotle concluded, by demand). In short, his chosen assumption saves him from considering the entire, widely-held body of thought known as classical theory, a system of thought worked out over centuries, intuitively credible because of its treatment of the nature of economics and human economic behavior, and firmly supported in its broad outlines by the enormous mass of facts available. Marx simply writes as if this entire theory or viewpoint did not exist; or at least, he offers no rebuttal of it in its own terms.

In other words, rather than considering and dismissing the interacting, "dialectical" factors of supply and demand, Marx goes for a soft target, a straw man – use-value. He easily sets this up and knocks it down again. Presumably he felt justified in this approach because classical theory, with its appeal to the external factors of supply and demand as determining exchange value, did not fit within his closed system. It lay outside his assumption of a "common internal substance" and therefore – by assumption – could not be correct. Therefore it required no discussion at all.

(It should be added, classical theory not only sees the causative factors of exchange value lying outside the commodity, it correctly locates exchange value outside it as well. Exchange value is, to repeat, not a thing, not an attribute of the commodity; it is a dynamically-arrived-at quantity, a result or meta-characteristic of the act of exchange itself. This is a much less concretized view than Marx's viewpoint.)

It is thus part of the strange and puzzling nature of Marx's text that he himself seems to be almost a *tabula rasa*, ignorant of economic thought

accumulated over the centuries. He writes not to refute widely-held classical views, but to refute weird postulates that in all probability no one in the world ever held. Yet such is the mentality of the "dialectical" reasoner, that the mere form and *appearance* of reasoned debate and logical deduction is all he thinks necessary. To be able to say, "It isn't A, therefore it must be B"; or that "It isn't use-value, therefore it must be my chosen factor (labor)" – this is accepted as powerful and conclusive proof. The dialogue has been held, the "clash of opinion" supposed to reveal the truth has occurred – what else is needed? Thus Marx's text becomes a matter of repeatedly setting up a straw man and knocking it down again. Marx does examine various possible explanations for various aspects of his text, but only within a very narrow range of opinion – only within the circumscribed bounds outlined by his major assumptions, which latter are held as self-evident and inviolable. Anything not in accord with them is considered beyond the pale and beneath discussion.

Thus Marx adopts an authoritarian attitude toward the matter of what is within the bounds of discussion. As regards exchange value, use-value is within bounds. Classical theory, with its external factors of supply and demand, violates his unquestionable major assumption, and is automatically deemed invalid.

All debate, all "clash of opinion" thus takes place only on the outskirts of the subject, in the form of minor border skirmishes. In the elements that truly make a difference, Marx's imperial, dogmatic stance rules, and everything is pre-determined by his unchallengeable assumptions. This, too, is not a scientist's approach.

The advantage of Marx's approach is at least as much in what he is able to keep out of the discussion as in what he introduces into it. The ability or willingness to stage-manage the discussion and hem it in within certain beaten channels is a great advantage for pre-determining the results; and it is made possible by his non-empirical, purely rhetorical, "dialectical" method: he turns the whole investigation into "a thing of words," not a matter of substance. It is a reductionist, as well as a deductive method: it limits and reduces what should be a thorough inquiry into all the facts and every possible explanation, to a circumscribed, closed system, a theoretical system of chosen assumptions, axioms and definitions. From an investigation of the real world, it becomes a pointless exercise held within the context of an artificial theoretical model.

One more quotation may be adduced as pertinent to Marx's method. The historian Duruy, writing of the Middle Ages, says:

> [Philosophy], which had been dead for six centuries, reappeared, but under a peculiar form, which procured it the special name of Scholasticism. ...Unfortunately [earlier efforts] had led the thought of the Middle Ages into a path from which it

> was difficult to return. All science was reduced to the art of reasoning, and every regularly formed syllogism carried conviction with it regardless of the premises on which it rested. Hence scholasticism was not a definite system of philosophy, that is, an organized body of doctrines on the great questions which interest us all; it was rather a certain method of discussing all questions, starting from premises which were either adopted ready-made or assumed without attempting first to verify their truth. Hence no idea of any importance to the world was gained form this system; and it remained a sort of intellectual gymnastics in which the reward was not the discovery of any truth, but a victory gained in a combat of words, aided by subtle and ridiculous distinctions and by a barbarous language which was only comprehensible to the initiated. [12]

That is a good picture of Marx's "dialectical form of reasoning", with its exaltation of method above substantive fact, its dependence on tortured logical deductions drawn from ready-made, assumed premises, and his "barbarous language." Marx reduces science to intellectual gymnastics, and factual, scientific investigation to mere glib verbal gymnastics. He reduces each substantive issue to "a thing of words," to a matter of specious discourse or facile argumentation: to mere "dialectics." It is important to remember that the specious system, the fantasy world, that he thus creates, bears no resemblance to the real world – and it is the latter which it is the scientist's task to examine.

As previously stated, undoubtedly one reason Marx chose as his axiom the "pre-Aristotelian" view, the search for a "common substance," is that he was thus able to rule classical theory off the turf from the outset; he needed not consider it at all, as it did not fall within the circumscribed realm where he decreed the truth must lie. There may however be a more prosaic reason: simple scientific illiteracy. Perhaps he simply didn't know the difference between science and metaphysics, didn't understand what an empirical investigation consists of, and didn't realize he was reverting to a pre-scientific method of verbal gymnastics rather than scientific inquiry. Someone has noted that there are people whose approach to life is, "I cannot tell a lie"; others who say, "I cannot tell the truth"; and still others who say, "I cannot tell the difference." As far as Marx's approach to science may be concerned, it may be that he falls into the third category rather than the second.

Not Use-Value

Moving from Marx's general method, let us proceed to a closer examination of particular points of his argument. His first derived conclusion, again, is that use-value is not what determines exchange value. He deduces this from the fact that exchange value fluctuates, while use-value remains constant; thus, his reasoning goes, exchange value is not a function of use-value. As he puts it, "the exchange of commodities is evidently an act characterized by a total abstraction from use-value."

This is first of all a case of false parallelism. Marx draws a conclusion from the fact that there appears to be no direct mathematical relationship between two entities; but the two entities are so different in kind, so disparate in their essential natures, that they could never impinge directly so as to establish such a relationship. Marx is comparing two phenomena that cannot be compared on a parallel level, but he treats them as if they were on the same plane. Use-value and exchange value are different in kind; they are phenomena of different natures. Exchange value is a much more objective entity. It is empirical and quantitative, while use-value is subjective and non-quantifiable, and more a matter of perception. To suggest that there can be a quantitative relation between use-value and exchange value, or indeed a quantitative comparison showing there is no such relation , is to mistake the nature of the phenomena being discussed. One might as easily ask whether the gravity of a planet might be determined by the seriousness with which people on it regard themselves: the two types of gravity, like the two types of value, are different levels of phenomena.

To repeat: exchange value is an empirical, quantifiable entity. One can actually find out how much things are selling for; one can arrive at a quantitative expression for exchange value.

(The concept of value, *per se*, is admittedly a complex one, with varied meanings and connotations. To equate value with simple market price under all circumstances may seem simplistic. There are circumstances under which one would say a good is not bringing, on the market, what it is "really worth." Such notions of what a thing "should" sell for may be based on a variety of factors – the amount of labor that has been invested in it, how much it would sell for under "normal" conditions, and other *ad hoc* considerations. Such value may be more closely related to Smith's term "natural price" than to exchange value; at any rate, on a purely objective, economic level, exchange value, which is one must recall the subject under consideration, is more closely identical with market price than anything else one could name.)

On the other hand, "use-value" is not quantifiable, not really an economic or scientific term at all. It is much more subjective and non-quantifiable than

exchange value. Thus it is pointless to attempt to compare exchange value and use-value expecting a quantitative correlation.

Consider Marx's introduction of the term: "The utility of a thing makes it a use-value," or, makes it something valuable or esteemed on account of its useful properties. Smith, seeming to envision a similar meaning, introduces the term this way: "The word *value*...has two different meanings, and sometimes expresses the utility of some particular object, and sometimes the power of purchasing other goods which the possession of that object conveys." (Note that Marx has his own special lexicon, in which the terms "value," "use-value" and so on are synonymous with the commodities themselves. This author will use "value" and "use-value" in accord with normal English usage, to refer to *attributes* of commodities rather than, as Marx obtusely does, to refer to the commodities.)

Use-value then may be considered to mean usefulness per se, as an abstract principle; or it might mean the worth that people impute to goods, the esteem in which they hold them, on account of their usefulness. (Use-value is in the latter case more a matter of people's *valuing* of goods, an action or response to the goods' usefulness, than a matter of a static property of goods.)

In any case, use-value is a more subjective, intangible concept than exchange value. It would be difficult to determine by any objective standard of measure how much usefulness a given commodity has. For one thing, what units would it be measured in? It is not quantifiable; and it may be a matter of personal judgment – it may be that the amount of use-value a good has *for someone* depends on how much use the person has for the particular product. In this sense the use-value of a product would be relative, varying from person to person. For a vegetarian, a set of steak knives might possess no use-value at all.

For all these reasons it would be hard to give a quantitative evaluation of use-value.

The difference between the two types of "value" might be illustrated by rephrasing the famous remark of Oscar Wilde to read, "A cynic is one who knows the exchange value of everything, and the use-value of nothing." That is, price or exchange value is a prosaic economic quantity, one knowable and openly observable at the marketplace. Use-value, or intrinsic, human-related value, by whatever standards it is judged, is less a concrete, market phenomenon; it is a result of judgment and thought. Compared to exchange value, it is more subjective and aesthetic.

Use-value and exchange value inhabit different realms; they don't intersect on the same level, and Marx's playing off of one against the other is more a pretense of argumentation and use of a straw man than a serious argument.

That is why Smith discusses use-value as he does – he raises the subject of use-value only in order to dismiss it from consideration. He introduces use-value

only to distinguish it from exchange value, his primary topic of concern. Exchange value, being a quantitative, *economic* term, becomes the subject of a large part of Marx's text. Use-value, being more in the intangible, subjective realm, receives much less consideration; it is less adapted to empirical analysis. There is simply not that much of a quantitative, empirical nature that can be said about use-value.

The elusiveness of use-value as a concept is increased by the numerous different meanings Marx attributes to it. At one time or another, he uses the term to refer to: the useful physical properties of commodities; usefulness itself as an abstract entity; and the specific uses to which particular goods are put (for food, for wearing, etc.). And from the latter usage he develops yet another meaning – the identity of the good itself, i.e., what commodity it is. This evolves because goods with different uses, i.e., different "use-values," are presumably different goods. The only good that has the particular set of useful properties of taste, appearance and so on which an apple has, is an apple; so we are to understand. Thus to speak of "a use-value" is to identify a unique set of characteristics and thus a particular good. So the word becomes synonymous in Marx's lexicon with "commodity.")

The main point is, it is senseless even to expect that use-value might in a quantitative sense be shown to correspond directly to exchange value. We can say with some degree of definitiveness what the exchange value of a commodity is; we cannot tell in any quantitative measure how much usefulness or use-value it has.

Even leaving aside the false parallelism between use-value and exchange value, the rest of Marx's argument does not follow. Although the physical properties of commodities are constant, it does not follow that use-value itself is constant. To say that it is constant amounts to a kind of reification or concretization of use-value. For while the useful properties of goods (in the sense of actual physical properties like durability, malleability, and so on) are arguably part of the goods themselves, use-value as such, the degree of usefulness of goods or the value which people attribute to goods on account of their usefulness, is external to them. It is a matter of human imputation or perception of the desirability of goods, the esteem in which people hold them with respect to their usefulness. (In fact, use-value is ultimately a matter of human *use* of the goods.)

For this reason it could be argued that the degree of "valuableness on account of useful properties" varies with circumstances: when there is a shortage of food, for example, the attractiveness or usefulness of food, vis-a-vis other

commodities, increases.* It does not follow, then, that because the actual physical properties of goods are fixed, their usefulness is also fixed. (This is so even without considering the fact that sometimes new uses are discovered for things, and that one would thus expect these things' usefulness and use-value to increase, even though their physical properties remained the same.) Use-value in an economic sense cannot be pegged solely to physical properties; it is not identical with "the aggregate of useful physical properties."

Some further observations should be made about Marx's concretization of the concept of use-value. Along with the reification of use-value there is a concretization of the kind of law he is looking for. After eliminating the human factor from consideration in the concepts of use-value and exchange value, reducing them both to strictly physical phenomena, he then seeks a strictly physical or naturalistic relationship between these two physical phenomena. The connection of cause and effect, in other words, is mechanistic and purely impersonal; human nature and economic behavior disappear from the analysis.

What Marx looks for, then, is a physical, natural relationship between objective (non-human) phenomena; in other words, scientific law. Presumably the fact that he makes this his aim is a great part of the basis of his claim to write science. However, when one aims at deriving naturalistic, impersonal laws governing things that are not genuinely naturalistic and impersonal phenomena, the result is not so much science as mock science. It does violence to the nature of the phenomena under consideration by purporting to produce laws of a precision and rigor beyond that which can be supported by the actual nature of the phenomena involved. We may refer again to Aristotle's wise comment: it is useless to seek more exactitude in our analysis of a phenomenon than the nature of the phenomenon itself allows.

Marx does not set about discovering the law as a scientist would, of course; it is not a matter of experimentation to discover which factors determine certain others, but rather a path of deductive logic. Moreover, his search for the key to exchange value leaves aside all human behavior (a fundamental consideration in market phenomena). In its place he seeks a mechanistic, objective formula expressing an unvarying relationship between objective phenomena on a mechanistic level. He models his search entirely on the physical sciences.

Much as, in physics, we discover that F = ma, that being a naturalistic law governing an aspect of the natural order of the universe, so Marx seeks a purely mechanical formula, Exchange value = kX where X is the unknown "common substance" and k is the constant or conversion factor. Use-value, conceived of as a purely physical, objective quantity, has been considered for the role of the

* On the other hand one must resist the tendency to equate use-value with *demand*, which is more of an externalized, aggregate expression of notions of use-value.

missing factor and dismissed. Next Marx will proceed to consider other possible candidates, staying always within the framework of his concept of a naturalistic relationship or quasi-scientific law.

His method is deductive, rather than empirical. And he applies it to inappropriate phenomena. Whenever possible, people are excluded from his analysis and the role of people as the actual "doers of economics" is slighted. Economics as a social science, as "something people do," is modified to have the outward form of physical sciences, but the nature of his subject matter is not appropriate for such treatment; Marx's analysis ends up as a parody of the physical sciences.

(For the above reason, too, Marx does not consider classical theory, with its appeal to supply and demand, in discussing exchange value. Supply and demand are market conditions, inescapably human-related. They are not sufficiently objective and impersonal to merit consideration within Marx's naturalistic economic analysis; they are categorically excluded, having no possibility of being the correct answer. This is another virtue, from Marx's point of view, of his concretization of the discussion: with it, classical theory, depending as it does on human economic factors, need not be discussed. At the same time, however, Marx's reductionist viewpoint excludes all subtlety and complication from the analysis. It is too brutishly simple-minded and unary to accommodate varied human factors, and it results in a ham-fisted, Procrustean kind of theory.

There are other objections which can be made to Marx's logic. For one thing, even though use-value may be assumed to be fixed and objective, and exchange value to vary, it still does not follow that exchange value is "*totally* abstracted from" exchange value. We are only justified in concluding that it does not *all by itself* determine exchange value – exchange value might for all we know be governed by a variety of factors, of which use-value is one.

That is, use-value could enter into the determination of exchange value but not be the sole determiner. Exchange value might be determined by numerous factors, and use-value might be one of them. In that case some of the other factors could fluctuate, causing exchange value to vary, while use-value remained the same (and thus its influence on exchange value remained constant); and in such cases exchange value would vary.

As an illustration, consider the formula, $S = V_i t + 1/2at^2$. That equation gives the distance S a body travels in time t, having begun with initial velocity V_i and while subject to constant acceleration a.

Now imagine an experimenter trying to discover this law, by the method of measuring the time it takes a stone to reach the ground after being thrown or dropped from a given height. Suppose a helper alternately throws the stone downward at various speeds or simply drops it (so that the initial velocity V_i is 0), each time from the same height S, say 500 feet. Since the height is constant

and the time it takes the stone to reach the ground is changing, should the experimenter conclude that the time it takes the stone to reach the ground is "totally abstracted from" and independent of the height from which it was thrown? That would be a mistake on an elementary level.

Yet Marx does something very similar with use-value; because it is not the whole answer to exchange value, he concludes it is not part of the answer. Or actually, he does not so much conclude as simply assume that exchange value is unary, determined by only one factor. And he puts forward use-value, which is in any case not objective or quantifiable and is unfit to serve as the kind of answer he's looking for, as an easily-disposed-of straw man. He sets it up and knocks it down; then he proceeds to emit his own answer, having preserved the *pro forma* dialectical niceties.

Now let us consider once again Marx's point that exchange value is "accidental and purely relative," that "an intrinsic value...an exchange value...inherent in commodities" is "a contradiction in terms." It is still difficult to understand exactly what Marx means. The question that occurs to one is, Accidental and relative as opposed to what? Exchange value, Marx has told us, is "constantly changing with time and place"; thus we may reach the conclusion, or rather restatement of the same assertion, that it is not a fixed constant. If that is all Marx means by saying it is accidental and purely relative, his point is obvious; no process of logical deduction was necessary to reach that conclusion.

Marx generally explains every subject from the ground up, from the most elementary and obvious basics, on the apparent principle that nothing is ever reliably known unless he himself has deduced it from a blank slate. Thus here he may be deducing that, since exchange value is not a fixed constant, exchange value itself cannot be a physical property "intrinsic" to the commodity like its color and weight – as if anyone in the entire world had ever thought otherwise.

Apart from any specifics of Marx's initial dismissal of use-value, this passage also anticipates his method of investigation and the framework within which he will look for the answer to exchange value, that is, the terms in which his inquiry will be posed. His method appears to be logical deduction from the most minimal and tendentious selection of facts that will serve his purpose. It is an *a priori* exercise: one based on logical deduction and the construction of logical categories. It is a "dialectical" method, as opposed to an investigation of the facts or the amassing of data, which would be the scientific method.

The particular issue at hand will be addressed in the terms, What is the common substance that accounts for the exchange value of commodities? Marx now rules out use-value as the common substance, and in so doing he establishes the bounds of the discussion, within which he will later derive the actual value-causing substance. So Marx's discussion begins early to channel the discussion

into a certain narrow, restricted path, closing out most facts and genuine scientific inquiry in the process.

The basic question

To continue Marx's analysis: he says,

> Let us consider the matter a little more closely.
>
> A given commodity, e.g., a quarter of wheat is exchanged for x blacking, y silk, or z gold, &c. – in short, for other commodities in the most different proportions. Instead of one exchange value, the wheat has, therefore, a great many. But since x blacking, y silk, or z gold, &c., each represents the exchange value of one quarter of wheat, x blacking, y silk, z gold, &c., must as exchange values be replaceable by each other, or equal to each other.

That is correct – because "two quantities each equal to a third quantity are equal to each other." Exchange value is not unique in that regard.

But let us anticipate here, before proceeding with Marx's analysis. Let the reader ask himself as an exercise, what can *really* be concluded from the fact that each of these many exchange values which Marx sees for the wheat is equal to the rest? What valid logical deduction can we make from that? Not much of one, really; we can say that goods are exchanged for other goods, that some way is found of determining how much of each commodity – silk, gold, or whatever – makes a commensurate exchange; and, in accordance with the elementary laws of mathematics, each of the "exchange values" or quantities of particular goods is equal to all the others. There would not seem to be any basis for any more revealing deductions than that.

At least, that is how it seems to us, the unimaginative readers. It appears that all Marx is really ready to do with the facts at hand, is to pose the basic question about exchange value – not answer it. That question is, as Mortimer Adler expresses it, "the problem of how to commensurate the value of heterogeneous things in order to determine equivalents…."

(More exactly, the question is not how we are to determine equivalents, but how the market, that is the people doing the exchanging, themselves determine equivalents. The question is not an *a priori* one, but *a posteriori*.)

To elaborate on this question some more: the problem is, as Aristotle put it, that "Exchange cannot take place without equality, and equality not without commensurability"; but how can commensurability be ascertained among

heterogeneous commodities? How can a proper proportion of exchange be arrived at between goods as different as, say, tables and wheat? It is accomplished somehow or other; somehow levels of relative exchange value *are* arrived at, at least to the satisfaction of those doing the exchanging. The question is, how is it done?

Marx in effect makes the question itself appear to be an answer. From the facts presented so far and his mathematical truism about equality relations, all that can be derived is the basic question. No conclusion can yet be drawn, and the only proper deduction is, "Therefore – nothing." Goods are exchanged, and all the quantities of various goods that are commensurate with, for example, a quarter of wheat, are equivalent. But we don't know yet, and can't deduce from the facts produced so far, how the quantities are arrived at.

Marx's Conclusion

Marx however conjures up conclusions from thin air, as follows: "Therefore, first: the valid exchange values of a given commodity express something equal; secondly, exchange value, generally, is only the mode of expression, the phenomenal form, of something contained in it, yet distinguishable from it."

The conclusion, then, is that "the valid exchange values," the quantities of various things for which our particular commodity can be exchanged – actually, exchange *value* (singular) – express "something equal." This vapid statement adds nothing to the discussion; if goods are exchanged as equals, obviously the "valid exchange values" express something equal; they express equal exchange value. They express the *equality* of one quarter of wheat to x blacking, etc. The fact that they are exchanged one for the other constitutes their equality. To be more specific, the fact that one quarter of wheat is exchanged for x blacking expresses the fact that someone (the people doing the exchanging) considers the two commodities to constitute an equal exchange; and it means that in fact they have struck a bargain to exchange them at that rate. But the mere fact of this exchange does not tell us *how* the level of commensurability was arrived at, nor does it justify Marx's conclusion that the answer is to be found in a "common substance." In other words, the question itself does not supply an answer, and it doesn't all by itself justify Marx's equating of exchange value with a common value-causing substance.

It seems, however, that what Marx means by "express something equal" is more than the denotative meaning of the words. He means that the valid exchange values express something equal *besides* exchange value – express the presence of some other property possessed by the goods in equal amounts. That is, the equal exchange values express the fact that the goods contain the same

amount of this "something equal" or common substance. Equal exchange value is then a reflection of a deeper equality "contained in" exchange value, or we might say loosely, contained in the commodity. Two things are equal in exchange value because they were first equal in the amount of this other substance that they contain.

Thus Marx makes the question itself appear to be an answer; he makes the mere fact of equality appear to be a solution to the problem of how that equality was established.

Marx's logic in arriving at this conclusion is absolutely feckless; he asserts that the very fact of the equal exchange "values," the fact that a variety of different goods are exchanged as equals, is the same as saying there is some equal common substance. This is an absolutely groundless assertion. His argument towards this end proceeds by showing the equivalence of a variety of "exchange values" for the quarter of wheat. But using Marx's logic, it would be just as easy to prove his point from one exchange. For instance, we could say: The wheat and the blacking are exchanged; they too are heterogeneous goods. Marx could just as easily have deduced the existence of the "something equal" from the fact that the blacking is exchanged for the wheat. These two equal exchange values, Marx could have said, "express something equal." Exchange value could then be seen to be "the phenomenal form" of something else, from these two commodities alone.

Marx defines the problem of value as the search for a "common substance"; he adopts the "pre-Aristotelian" view of exchange value from whole cloth, presumably because it excludes market-oriented explanations of exchange value and allows him to reach the conclusions he wants to reach.

It may be added here, the "pre-Aristotelian" view, which Marx adopts, is not a particularly bright one, and certainly not a modern or progressive one. For a reflection on its logic, we may look at a pungent quotation from Jean-Francois Revel. He speaks of mysterious substances

> …akin to the “virtues” or “entelechies” of the Schoolmen, who explained the phenomena of nature not by the relation of cause and effect, but by properties inherent to bodies. According to them, a stone falls, not due to weight and gravity (of which they were unaware), but because of the stone's inherent tendency to go downward, or, as in Moliere's satire, the poppy is a soporific “because it contains a dormitive virtue which has the capacity to induce sleep.” [13]

Just such a non-explanation is Marx's invocation of a "common substance" constituting the value-inducing property or "virtue" within goods. Commodities

have value, we are to understand, not because they are acted upon from outside by market forces (and by people), but because they contain this value-causing "virtue" or substance. Thus all market-related explanations, all cause-and-effect relationships hinging on economic considerations external to the commodity, such as the cost of production, demand, need for the seller to make a profit, and so on, are simply discarded.

Marx adopts his viewpoint and his terms of discussion as matters of self-evident fact; and he turns to the search for a "virtue" or "entelechie" or "common substance" in goods. The discussion becomes not a search for factual evidence establishing a cause-and-effect relationship between objective factors – an *a posteriori*, scientific investigation – but the construction of a contrived or hypothetical system of *a priori* categories and logical deductions.

There is not in real life, as Marx's method presupposes, an *a priori*, categorical determination of exchange value; it cannot be reduced to a logically-deduced formula relating physical entities. Exchange value is whatever level of commensurability the market (for whatever reasons are pertinent) fixes for it. To put it in a nutshell: the Marxist view is that things are exchanged as equals because they have the same exchange value; the classical view is that they have the same exchange value because they are exchanged as equals.

Marx asserts that they have a value *a priori*, as determined by some inner substance; exchange value only reflects this pre-existing value. Classical economics asserts that the value is determined dynamically, at the market, by market factors: people arrive at agreements to sell goods at a certain rate – thus exchange value is determined. We cannot say at this point *how* those bargains are struck or what factors affect them.

Marx produces his framework for examining the problem, his equating of the task with the search for a "common substance," by sophistry. Having proven by (presumably) infallible logic the existence of an "entelechie" or inner substance which is the root explanation of exchange value, he assumes that that is definitive: the real world must have no option to fall into line. "Logic can compel the facts."

This superstitious viewpoint, Marx's reversion to the concept of internal "virtues", is atavastic and preposterous. It is the work not of a scientifically-minded man of the 19th century, but of a medievally-minded scientific illiterate.

Whether it is an intelligent viewpoint or not, moreover, Marx cannot deduce it from the facts he has presented. The mere fact of equality does not itself supply the reason for the equality. If we drop two objects (of different weights, say) from the same height, and they reach the ground at the same time, we do not therefore know why that time was what it was, or what the governing natural law is. The fact that the time one object took to fall equals the time the other took, is not a transformation of the terms of the discussion. It does not in itself imply that

there is an internal "common substance" such as an "inherent tendency to go downward"; or that time-to-fall is a "phenomenal form" of some relation "contained in it." To draw such conclusions would only prevent us from studying factual data and deriving the real law, $S = 1/2at^2$. What Marx presents as a deduced conclusion about exchange value is just his philosophical assumption about the meaning of the mathematical relation of equality itself.

Further Reductionisms

"[S]econdly, exchange value, generally, is only the mode of expression, the phenomenal form, of something contained in it, yet distinguishable from it."

This too is little more than a mystification of the question under consideration; it suggests a relationship between exchange value and the alternate "something" which is not real-world and empirical but Gnostic and mystical. No such relationship as "being a phenomenal form of" is found in the real world, in other words.

So far as intelligible meaning can be drawn from the passage, it seems to be Marx's way of saying that exchange value is not an uncaused phenomenon, not a transparent one; rather there is some unseen explanation or causative factor, something "behind it" which governs exchange value. This as-yet unseen determining factor is what needs to be discovered.

If this were all, Marx would be saying nothing that actual science does not say; science always looks for previously-unknown interrelationships and causative factors. Marx however seems to be going beyond this, to the replacing of the question as it is normally posed by a "dialectical" or speculative-philosophy version of it. His formulation above all shifts the relationship he is searching for from the empirical to the metaphysical or philosophical realm; it is a more ambiguous and less concrete one, not tied down precisely to any demonstrable empirical relationship.

As to any explicit shift in meaning: the search for the underlying factor behind the outward "phenomenal form" suggests not so much an investigation of cause and effect as the search for an alter ego or alternate guise; it envisions a phenomenon that can assume various Proteus-like alternate identities. At least, so far as can be judged, that is what Marx's prose suggests. He seems to be saying that there is one mathematical relation, exchange value, which is an exterior or phenomenal form of another mathematical relation, "contained in it," that is, contained by the relation of exchange value.

The metaphysical gibberish of Marx's proposed relation "contained in" exchange value, is simply nonsense; it corresponds to nothing in the real world. Marx is unable to present empirical cause-and-effect relationships among

objective entities and quantities, and instead descends to such vacuous rhetorical devices. Such assertions exist in the realm of rhetoric and abstract metaphysics only – they do not posit any actually-occurring events or relationships in the real world.

To revert to the usual example: $S = V_i t + 1/2at^2$; there are two equal quantities. But that doesn't mean that distance (or time, or acceleration) "is only a phenomenal form of something contained in it." Such an assertion says nothing concrete about the real world.

The mere use of an equals sign, the fact that "1 quarter wheat = x blacking," apparently holds coruscating layers and facets of meaning for Marx; it holds a wealth of varied significance. Truly Marx could see unseen things; but in the present case they are mere hallucinations.

Scientific laws

In effect, what Marx is doing is redefining the terms of scientific inquiry; so let us consider the scientific method for a moment. In broadest terms, what science asks is, How does the world (i.e., the natural universe) really work? That is the topic of science, most broadly stated.

And then as regards particular laws or areas of investigation, the inquiry could be put this way: the scientist is looking for a valid, preferably quantitative, generalization relating the phenomena involved, one which always holds true. This generalization often will be an expression of interrelationship between various factors, for example, F=ma, $E=mc^2$, E=ir. (It might be said that the scientist seeks the most inclusive generalization he can find, the one most basic to the phenomena and valid under the broadest range of situations imaginable. Thus Newton's $G=gmM/s^2$ was preferable to "What goes up must come down" as a law of gravitation.)

The formula or interrelationship can be seen as a statement of cause and effect: a force F acting on object m produces an acceleration, a, equal to F/m. But primarily, the valid generalizations form a basis for determining other instances of cause and effect: when the behavior of a certain body is examined in a *particular* case, the known generalized laws enable us to make statements about what might have caused the action and what may occur in the future. For example, the laws of gravitation, motion, force and so on can be worked with precisely and meticulously to enable us to launch rockets to the moon.

Marx's statement of the terms of the discussion does not mention any such search for a valid generalization, an empirical interrelationship, or cause and effect. He gives us instead a mystical expression concerning alter egos or "phenomenal forms." He doesn't say "We will determine what factors govern

exchange value," but "Exchange value is the phenomenal form of something contained in it." Not "A causes B," but "B is an outward expression of something inside A." The former is a scientific expression of cause and effect, the latter a metaphysical statement of philosophy. That is, what is seen in the real world, exchange value, will be explained by Marx in terms of something invisible – underlying, unseen relationships. Marx will not find interrelated real-world phenomena, but will explain one empirical factor, exchange value, by reference to something invisible and unknowable. This is a caricature of science, in accord with his pre-Aristotelian view of exchange value. The "common something" inside commodities will always remain invisible – it can only be known by specious logic and shifty rhetoric. The terms of Marx's discussion have more in common with Greek mythology and Gnostic mysticism than genuine science.

The ambiguous and abstract character of Marx's text is the only thing that allows his discussion to continue. If he had given an explicit, real-world statement of the problem like "certain factors determine, in a cause-and-effect sense, exchange value," then his readers would have had a clear idea of what he was attempting to discover, and definite criteria for accepting or rejecting his eventual answers. But with such vaporous, essentially meaningless formulations as "is a phenomenal form of," "contained in exchange value," and so on, Marx's answers can be as nebulous and vague as his questions. Marx is free to continue with his metaphysics, "dialectics," sophistry and specious rhetoric to prove almost whatever he wants. "There are no rules of architecture for building castles in the air," as Chesterton put it. (Or as the poet put it more earthily, "In the world of mules, There are no rules.")

This is the kind of thing that results when philosophical speculation is considered to produce valid scientific results. It is the method of the amateur, the dilettante without a grasp of even the most basic terms of scientific inquiry. The inquiry is reduced to "a thing of words," not an empirical, scientific investigation.

If Marx had been interested in an empirical investigation, in finding an *actual* correlation of factors in the real world, he would have been forced to resort to classical theory. For such cause-and-effect relationships can be established. One can identify the pertinent factors as such things as market factors; economic considerations like cost of manufacture and conditions of supply and demand; human economic behavior and the factors motivating and impinging on each agent involved in the market; and so on. One can find a direct correlation among supply, demand, and exchange value. On a cause-and-effect, empirical level, classical economics gives the answer.

Instead of working on that level, Marx embarks on a dissection of the commodity, a microscopic "analysis of a commodity" in metaphysical terms.

Using philosophical speculation and sham logic, he can produce the answer he wants. That is science among the Yahoos.

Hegelian Roots

Some mention should be made here of the similarity of Marx's theory to Hegel's "world view." It is true Marx explicitly rejected the possibility that he might share Hegel's philosophy in certain ways. As he says in the preface to his text, "To Hegel the life process of the human brain, i.e., the process of thinking, which, under the name of 'the Idea,' he even transforms into an independent subject, is the demiurgos of the real world, and the real world is only the external phenomenal form of 'the Idea.' With me, on the contrary, the ideal is nothing else than the material world reflected by the human mind and translated into forms of thought [a primitive viewpoint in itself!]."

While Marx explicitly rejects the Hegelian concept of the real world as a mere reflection or "phenomenal form" of the more valid "Ideal," in fact he adopts the concept. His exchange value is a "phenomenal form," if not of an "Ideal" exchange value, then at least of an invisible, more genuine "common substance" or common factor. The difference between that and Hegel's philosophy is slim. (This is not the only instance in his work where Marx "talks out of both sides of his mouth" – where he rejects a concept explicitly, in so many words, but accepts it and uses it implicitly. It may truly be said that at times in his works Marx can be seen not to know his own mind.)

For Marx, as a general thing this viewpoint prevails: there is an outward, visible realm hiding a mystical or spiritual or Gnostic reality. He disdains merely "phenomenal" things, which have as their only merit the fact that they actually exist in the real world. He clings to the inner, unseen reality which can only be inferred or deduced through his sophistical rhetoric, and endows it with a higher order of validity and authority. This is Gnostic mysticism, not science.

And this viewpoint, this belief in a "common substance" and the playing off of a "phenomenal" exchange value against an inner, not "Ideal" but at least more valid, virtue or substance "contained in" commodities, is deduced by Marx from nothing more than the fact that goods are exchanged, each for varying amounts of other goods (each of these "exchange values" being equivalent to all others). This is truly conjuring, pulling grand conclusions out of thin air. The correct deduction, the only justifiable conclusion, to repeat, is, "Therefore – nothing."

To continue, then: the proportions in which, say, corn and iron are exchangeable "can always be represented by an equation [having the form] "1 quarter corn = x cwt. iron. What does this equation tell us? It tells us that in two

different things – in 1 quarter of corn and x cwt. iron, there exists in equal quantities something common to both."

Not at all – the equation tells us nothing of the sort; it is precisely the point that it does *not* tell us what Marx says it does.

The equation "1 quarter corn = x cwt. iron" tells us only that people dealing on the market are exchanging corn and iron at those relative rates of exchange. People having corn to sell and people having iron to sell strike bargains to exchange the goods at the given rate (either in direct exchange, or more realistically, in separate exchanges, for money). Why they strike those bargains, or how they arrive at those particular proportions between corn and iron, we cannot say at present. That is, we can't know why, based just on the mere fact of the equation "1 quarter corn = x cwt iron." In short, we cannot accept Marx's terms of discussion – his adoption of the "pre-Aristotelian" point of view, identifying the problem as the search for a "common something." Especially, we can't accept that such a view is directly required by the mere statement that 1 quarter of corn is exchanged for x cwt. iron. Marx simply adopts his viewpoint arbitrarily, as an assumption, while purporting to deduce it from the equation above. There is nothing in the facts, or in his rhetoric and specious logic, that either necessitates, or even tends to support, his viewpoint. In fact the viewpoint was anachronistic and scientifically illiterate even at the time he wrote.

For anyone who cannot see immediately that Marx has in no way made a case for what he purports to prove, it will be difficult to show that such is the case. The proof of it is the total absence of anything supporting his conclusion; the difficulty is that it is hard to "prove a negative," as the saying goes.

It might give us insight into Marx's mindset to consider that his argument could have proceeded from an almost superstitious awe of the equals sign. (Primitive peoples often are amazed and bewildered by their contacts with advanced science and technology.) Marx sees marvelous things in the mere use of an equals sign; there is almost no end to the varied and ramified significances he finds in a mere lowly expression of equality such as "1 quarter corn = x cwt. iron." To Marx it holds the key to mysteries; it is conclusive proof of the "pre-Aristotelian" view of things. It tells us not only that two quantities are equal, but why they are equal and how they came to be equal. It is philosophically and scientifically fraught. Like a cargo cultist, Marx may have read great wonders into rather prosaic things.

Applying his argument

Marx's theory would require us, whenever we find formulae equating two quantities, to look for the third "common substance" to which the first two

quantities actually owe their equality. For Marx's argument is generic; there is nothing in it that specifically derives from the fact that exchange value is what is being equated. There is nothing that relates to exchange value alone; Marx's logic, what there is of it, applies equally well to all equations.

For instance, when we say that for a circle, $A = \pi r^2$, we have two algebraic expressions, one denoting the area of a circle, the other a product involving the circle's radius. These two expressions are equal – the equation is the formula for the area of the circle. So, What does this equation tell us? It tells us that in two different things – in A and in πr^2 – there exists an equal amount of ... what? There is no "common substance" in the A and the πr^2. Rather, what we have is a formula for calculating the area: it equals r (a distance) times itself, times a constant (a dimensionless number).

The area of the circle is not equal to πr^2 because both contain equal amounts of some prior substance. The formula concerns area, just as Marx's example concerns exchange value. The area, either denoted as A or calculated as πr^2 , is equal in either case; there is no other "substance" apart from area, or apart from this fact: the *area* (one quantity) of the circle can be calculated by πr^2.

This example is less than perfect. It is not a comparison of two different quantities, exactly; it is a formula for finding one quantity. That is, it is an equation that is always true by the mathematical nature of circles. True, it has two different algebraic forms, but the essence is that there is just one area.

By contrast, when one good is traded for another, so that "x commodity A = y commodity B," it is happenstance; it is due to *ad hoc* or circumstantial factors, not mathematical necessity.

This brings up a fairly significant point: quantities may be equal for different reasons. The equals sign doesn't in itself give us the real-life context or situation which (despite what Marx believes) alone can tell us why they are equal.

$A = \pi r^2$ for example, is mathematical truism; A always equals πr^2 , by the nature of circles, or by the mathematical nature of the whole system of geometry, from the axioms on up. It is logical necessity. (In fact, to show that an equation is always true, not just true in the particular current instance, the ≡ sign is sometimes used. That is, the formula might be better expressed as $A \equiv \pi r^2$).

A better analogy to Marx's reasoning might be, "In a particular instance, angle A = angle B." For example, in two different triangles, if angle A is an acute angle in a right triangle, and angle B is likewise, and if the sides opposite either angle are equal, then in these particular circumstances, angle A = angle B.

What does this equation tell us? Other than just "size of angle," other than the extent of the displacement between two straight lines, what "common substance" exists in equal amounts in angle A and angle B? There is no third common substance. Angle A equals angle B not because they both "contain" some third substance in equal amounts, but just because they happen to be angles

of the same size; the measure of the displacement between the sides of the angle – the magnitude of the angle – is the same in both cases. Just as when two people exchange corn and iron, there is no need for mystification or for invisible third quantities; it's a straightforward matter.

An even more "happenstantial" example might be: I am precisely the same age (let us say) as my next-door neighbor. Now obviously that means we both "contain" the same amount of time. Age is measured in units of time; so that is the "substance" in question, just as exchange value is at issue in Marx's example. But if "my age = your age," that means we both contain equal amounts of what? What third substance, apart from time, is responsible for the fact that we contain the same amount of age? There isn't any third substance, and one should not attempt to pull one out of the hat. (Time isn't the third substance; time is just the unit of measurement for our ages.)

The fact is that Marx's entire understanding of the implications of the equals sign (not such a complicated concept, one would think) is bizarre and distorted. Marx is always good with orotund rhetoric and metaphysical mystifications, but any time his text gets close to real science or mathematics, he shows his abysmal scientific ignorance.

Dialectical form of reasoning

It remains to be said that Marx's "dialectical" form of reasoning is in this instance hopelessly inadequate. Judging from the present argument, what that consists of is the mere outward form of Socratic dialogue. That is, Marx first asks himself a question, and then answers it; this presumably constitutes conclusive proof.

His "dialectic" with himself is: "What does this equation tell us? It tells us..." and so on. Now, there may be points to be made in favor of the Socratic method. (As a teaching method, a means of getting students to think, it is excellent. However, as a method for deriving factual matters – as science – it is inadequate; it is nothing like the modern scientific method.)

But surely no Socratic dialogue was ever as thin, substanceless, shallow, and meretricious as Marx's imitation of it. Arm-chair philosophizing or the use of "thought experiments" is in general an unscientific method; but surely before Marx it had never sunk so low. In his case it reduces to simple unsupported assertion. It should be apparent to anyone with even a modicum of scientific understanding that it is not proof.

To recap then: exchange value is in principle a straightforward concept, understandable without Marx's mystifications of it. It is indeed "the proportion in which [commodities] of one sort are exchanged for those of another sort." If "1

quarter of corn = x cwt. iron," what that tells us is that corn and iron are exchanged in that relative proportion. It tells us that corn is selling at a certain number of dollars per quarter-ton, which sum will likewise buy x hundredweight of iron. That is *all* the equation tells us. For the reason why those prices obtain, we must go outside the equation itself, to a study of economic factors. And ultimately, the answer has been convincingly supplied by classical economics.

Marx's overall method

"You'll have to think of a fresh theory now, Doctor."
"It is not necessary. My theory was a perfectly good one. The facts were misleading."
"The Lady Vanishes"

We have already seen how Marx goes on to demonstrate the existence of a "common something," first algebraically from the fact that two quantities equal to each other "must therefore be equal to a third," and then by geometrical illustrations. Nothing more needs to be said about those proofs, but perhaps a perspective of his overall argument can be added.

The question, as it has emerged from Marx's text, is, "What is the common property existing in all goods, the amount of which in any given item determines its exchange value?" The realm of inquiry has, that is, been restricted to the "internal contents" of the commodity itself, to those properties or phenomena which can be considered (whether plausibly or implausibly) to be properties *of* the commodity, contained in it. That the question could resolve into this state is a consequence of a whole series of naturalistic or mechanistic assumptions made by Marx about exchange value. Exchange value is treated, first of all, much like any other physical property of objects; and purely mechanistic relationships or laws, correlations between objective quantities, are hypothesized. "The exchange value of commodity A equals that of commodity B" is treated as a statement of physical science, much like "$S = V_i t + 1/2at^2$"; it is represented as simply an impersonal correlation between physical entities – part of the natural order of things. A dynamic quantity which arises as a result of human activities is treated like an objective aspect of nature. This is an abuse of the nature of exchange value. Human behavior, markets, economic exigency – these do not make an appearance in Marx's analysis. Marx's theory is a misrepresentation of the very nature of the subject.

Let us recapitulate Marx's argument step by step: first, exchange value is, "at first sight," defined as the relative proportions in which different goods are

exchanged. These proportions, i.e. these exchange values, vary, but use-value (useful physical properties) is constant. Therefore use-value doesn't determine exchange value. However, while use-value doesn't determine exchange value, some property of the various economic goods must do so – some "common substance" inside all goods must serve to establish their relative values. (That is, Marx accepts the view examined by Aristotle, and rejected by him on the grounds that there is no common physical factor in all commodities. Aristotle was wrong, Marx tells us: he simply failed to discover the common factor because he was blinded by cultural conditioning.) We know this because the very fact that two goods can be determined to be of equal exchange value proves there is "something equal" about the goods that causes the equality. This is so for no better reason than that Marx sees it that way. (To him, it is a conclusion self-evident from the bare facts.)

If the exchange value of commodity A equals that of commodity B (i.e., x amount of commodity A equals y amount of commodity B), this in itself proves that there exists in equal amounts some value-causing substance in each. The amount of this "common substance" possessed by any commodity determines its exchange value: x amount of the mystery factor translates to a corresponding amount, say kx, of exchange value. Thus the relative amounts of this common substance contained in various goods constitute the real, inner relation "contained in" exchange value. If exchange values are equal, it is because the amounts of this other common property were first equal; exchange value is a "phenomenal form" of the amount of the common substance.

Marx would have it that all this is self-evidently true from the simple fact that relative worth can be determined or established: from the simple fact that the statement can be made, "1 quarter corn = x cwt. iron."

In other word, while use-value (considered a property or substance *in* goods) is not the key to exchange value, some other common property, some other entity which can in some sense be deemed a property of, or a substance "in," the commodity, must be the key to the determination of value. It only remains to identify that common property.

Thus the argument so far. The salient fact is, Marx's analysis is entirely beside the point. It evades the real issue and diverts the discussion into a series of contrived irrelevancies.

The real issue is what actually determines exchange value in the real world, that is, in objective fact. The point of the discussion is not to create a fictional theory from whole cloth, to devise a contrived and arbitrary system from chosen assumptions.

The real issue, to repeat, is what in objective fact determines exchange value. That is, after all, what modern science seeks to tell us: what actually governs the behavior of various phenomena; *how the world really works* – as

opposed to philosophical speculation and the creation of abstract, hypothetical systems.

Marx ignores the task science assigns itself, of finding out what really happens in the world. He shuns the scientific method and manages to dismiss without consideration all such objective, external considerations as market conditions, costs of production, supply and demand – all the empirical phenomena which have so convincingly been shown to have a bearing on exchange value.

Instead, he reverts to the purely "dialectical" method of pre-scientific ages, a method of words only, of abstract logic applied to arbitrary assumptions in isolation from all but the most rudimentary facts. This method amounts to the creation of a hypothetical world, an imaginary closed system contrived in a vacuum. In the process of creating it, Marx does violence to the nature of exchange value, reducing it to a physical quantity existing in nature. And he does violence to science itself, by adopting the method of armchair philosophizing or "dialectics" rather than science.

Let us examine some of the specific characteristics of Marx's text which are departures from genuine science (apart from the main one, that it is simply the creation *ab nihilo* of a fantasy world).

First of all, Marx's system is *deductive*, in contrast to the scientific method, which could be called *inductive*. Marx's reasoning proceeds very much in the manner of say, a geometry textbook. There is a setting forth of certain axioms and definitions (with one or two objective facts being allowed into the discussion); and from this basis all further results are deduced, with each further "theorem" being based on what has gone before it (with whatever further definitions and assumed axioms are necessary). The entire configuration of the theoretical system that emerges thus depends entirely on the axioms and definitions chosen; the system is arbitrary and purely theoretical. Marx's theory is a "formal system," in the sense that it is a system of formal logic, produced "for argument" only – it is theoretical and "formal," as opposed to empirical and actual.

As opposed to this let us say, "top-down" approach, genuine science is a "bottom-up" approach. Archetypically, it proceeds by massive accumulation of the facts through observation or experiment; the scientist attempts to discern the regularity or underlying law at work in the facts: the reasoning is inductive. (A good example is the work of early astronomers and their tables of observation of the stars; a massive accumulation of data was necessary for Kepler's derivation of the laws of motion of the planets.)

And while in modern science the actual work of discovering the hypotheses does not proceed in such a clear-cut inductive manner, the process of verification of a hypothesis is inductive; experimentation or observation is done exhaustively

until one can say with some degree of confidence, "It has happened this way in every case we have observed; let us conclude that it always happens this way."

The distinguishing feature, then, is that science is above all a report of the facts, often taking the form of the discovery of order implicit in the facts, or the discerning of valid generalizations which can be drawn from the facts. It is not the creation of a theoretical system in reckless disregard of the facts, which is Marx's method.

His method is one of abstract logical deductions from chosen assumptions. And there are three main problems with his use of this method: first, his assumptions are bad; second, his logic is bad: third, the method itself is bad – it is not science and says nothing accurate about the real world.

Besides being deductive, Marx's system is prescriptive (as opposed to descriptive). He adopts a general approach of bullying or browbeating reality. Marx creates a theoretical system, which he then grants presumptive authenticity as a representation of the real world; he imposes his theory by fiat, by brute force and overbearing rhetoric. His attitude seems to be, "My theory is correct; it is the facts that are mistaken."

Marx's text proceeds not so much by a seeking out of the facts, as by shutting out the facts so that he can proceed with creating his hypothetical world. But rather than admit that his result is a formal, not actual, system, that it in no way describes the facts of the real world, Marx blithely assumes that his theory, his word, is authoritative. His theory overrules any objections of the real world.

This kind of bullying of reality, needless to say, is not science. Marx's method in this regard is similar to the Medieval method: the Scholastics also assumed their deductions were authoritative. For example, in Medieval times it was posited that the orbits of the planets are perfect circles. This theory was derived as follows: God is perfect, and God made the planets; therefore He must have given the planets perfect orbits; and the circle is the most perfect plane figure. Therefore the orbits must be circles.

There are many questionable assumptions in this argument, and not just about the planets. For one thing, we might ask by what standard the circle is more "perfect" than an ellipse. Not mathematical standards, surely.

At any rate, the point is that the Scholastics proceeded by deductions from chosen assumptions. They assumed that their logic was the final word on the subject: that if they deduced it, it had to be correct. Their intellectual presumption may have been less than Marx's, but still the attitude is there: "logic compels the facts." They did not undertake the task of *finding out*. They didn't consider the possibility that the real world might not fall in accord with their derived conclusions.

Marx's method is the same – he turns his attention from the real world to the constructing of a fantasy, and seeks to enthrone this fantasy as reality (or if not

as the real or "phenomenal" world, then as an "inner" reality, on a higher order of validity than the real world). In fact, from this point on in Marx's text, his subject will not actually be the real world, which is now displaced as irrelevant, but rather the hypothetical system he has produced from his own imagining. He will base his logic and reasoning on the already-deduced "theorems" of that fictive system.

This amounts to a fatalistic superstition; it is mysticism to suppose that the world is subject to philosophizing, or that words on a page, the written manipulation of logic and contrived categories, can be definitive about reality. It is fatalism, based on the presumption that such thought-experiments can provide, in the absence of any empirical data, valid conclusions about the real world.

Marx produces his answers from nothing, by working up rhetoric and specious logic into the consistency of an argument. It is the height of superstition to take the resulting product as a true picture of the real world.

The Mystery Factor

What we have so far, then, is this: the subject of exchange value, i.e. of what governs or determines the magnitude of exchange value, has reduced itself to the search for the "common substance" or mystery factor within goods. Marx's viewpoint is that "the exchange values of commodities must be capable of being expressed in terms of something common to them all, of which things they represent a greater or lesser quantity."

Thus Marx expresses it, in his typically garbled prose. The critical phrase is "must be capable of being expressed in terms of" some common factor. That is not the same as saying exchange value "is caused by" or "is a direct consequence of" or "is created by" the amount of the common substance. It does not express any observed statistical correlation between two factors, nor a cause-and-effect relationship. In fact, it doesn't explicitly posit any specific real-world relationship. As stated above, it may always be possible to *express* something in terms of something else; but what we want to know is exactly what kind or relationship or causation Marx has in mind: exactly how the amount of the "common something" results in a corresponding amount of exchange value. Marx's formulation doesn't tell us.

In fact, it is probably not in Marx's interests to give an explicit statement of the relationship he posits between exchange value and the "common something". Any relationship explicitly stated is subject to being shown false; therefore mushy, amorphous rhetoric serves Marx’s purpose much better. Expressions like "phenomenal form"; statements that exchange value as a quantitative relation "contains" another relation related to the "common substance"; or ambiguities

such as that exchange values "express" the amount of the common substance – none of these actually denote any real-world entity or relationship. They are rather part of the semi-mystical jargon of the dialectician sophist. By the use of them Marx constructs a hypothetical world based on phantom entities and relationships.

At any rate, Marx now turns to the task of discovering the identity of the mystery factor, the value-determining factor within commodities. He continues:

"This common something cannot be either a geometrical, a chemical, or any other natural property of commodities."

That is an unexceptionable, even obvious, statement. No one would ever suppose exchange value was determined by the shape, or geometric configuration, of commodities. ("Square goods are more valuable than round goods," etc.?) Nor could the answer be chemical. ("Acidic compounds are worth more than basic; organic more than inorganic," etc.?) The suggestion is childishly simple-minded.

The function of this statement is apparently not to supply information, but to supply a semblance of an argument, a straw man to knock down. This is the more evident in that Marx does not feel compelled to discuss any other, more normal, possible explanations of exchange value, like supply and demand. He discusses only a possibility ridiculously easy to dismiss. Marx is in a world of his own at this point in his argument; readers will find little in his text resembling the real world as he takes his "fantastic voyage to the center of a commodity."

Marx continues, stating the reason physical properties cannot be the "common something": "Such properties claim our attention only in so far as they affect the utility of those commodities, make them use-values. But the exchange of commodities is evidently an act characterized by a total abstraction from use-value."

That is, physical properties do only one thing – or as Marx puts it, they "claim our attention" for only one thing. That thing is, they create or cause the commodities' use-value. And use-value, as we presumably already know, is entirely unrelated to exchange value, or "is...characterized by a total abstraction from exchange value." Thus, since the only thing physical properties do is cause use-value, they can't determine exchange value; that is, natural properties don't determine the magnitude of exchange value.

That is a perfect bit of circular logic. Physical properties cannot be the cause of exchange value, because (he assumes, without proof) they only cause use-value. And the reason he knows they only cause use-value is that they don't determine anything else, including exchange value. This is actually an infinite regress: how do we know physical properties don't cause exchange value? Because they only cause use-value. The question then becomes, How do we know they only cause use-value? Marx had to eliminate them as causers of

exchange value before he could state they only affect use-value; but we don't know how he did that. His answer is, "It's turtles all the way down."

In other words, his "argument" amounts to assuming without proof that physical properties can't cause exchange value. For suppose they *did* cause exchange value; then his original assumption, that they "claim our attention only in so far as they affect" use-value, would be negated.

That is, Marx might just as easily have written, "The cause of exchange value cannot be a physical property, because physical properties only affect use-value; and I know they don't affect anything else, such as exchange value, because I say so." There is no proof, or argument, or "probative" power in that statement; it's just a pronouncement issued *ex cathedra*. Marx *appears* to be giving a reasoned argument; but the result of his argument is actually implicit in his original premise or assumption; and he had adopted that assumption without supporting evidence of any kind.

(A qualification: he has shown that *use-value* is unconnected with exchange value; and that is so because, he implies, physical properties, which cause use-value, are fixed constants. Thus one could conclude that physical properties don't cause exchange value (which fluctuates). But Marx doesn't explicitly do so.)

The passage under consideration does help us be sure what Marx meant in a previous statement. Marx has said that exchange value cannot be "intrinsic," or "inherent in commodities," but is "accidental and purely relative." Only now do we see that what he explicitly meant to rule out (by saying it couldn't be "intrinsic," etc.) was use-value (as created by physical properties) as the explanation of exchange value. This present statement lets us know what Marx intended by at least one specific instance of his previous orotund rhetoric.

It is interesting to note that Marx makes the same argument, albeit in elliptical form, going in both directions. First his argument is: Exchange value is constantly changing, and thus it must be unconnected to anything "intrinsic" or "inherent" (and thus constant) in commodities. This means primarily, it is unconnected to physical properties, and by implication, use-value.

Then later, the argument goes in reverse: Exchange value is "totally abstracted" from use-value, and since the only thing physical properties do is create use-value, i.e., since that is their only function, it follows that they don't account for exchange value. (The fact that he takes the argument both ways, first showing that exchange value is unrelated to use-value and then that it is unrelated to physical properties, is not circular logic. It is only redundant – it was not necessary to make the latter argument, going in reverse.)

Let us consider some more of the particulars of Marx's argument. He says, physical properties "claim our attention only in so far as they affect the utility [or, are the source of utility] of those commodities, make them use-values." That is, when we think of physical properties, we are allowed to think of them in only

one regard – as creating use-value. Marx is in charge of the discussion, you understand, and he hands down this decree: physical properties have only one characteristic, and they are to be regarded in only one light; they create use-value. No other aspect or viewpoint is to be entertained. This is apparently so because, Marx would have it, there actually is no other aspect or viewpoint; but that is an assertion unsubstantiated by his text. What this stricture of Marx's amounts to is an arbitrary fiat, another example of how Marx bullies the discussion.

Marx channels the entire discussion into a narrow, pre-selected track; certain things must only be considered and discussed in definite, specified terms. The discussion must not stray into the broad world at large, allowing varied aspects and intrusive facts to intrude. Again: Marx's argument proceeds as much by what he excludes from consideration as by what he positively asserts.

It might be asserted plausibly that this passage has one characteristic typical of the workings of Marx's mind in general. He is compartmentalizing reality; specifically he is compartmentalizing physical properties and use-value. And this is a typical expression of the excessively compartmentalized nature of his thought processes in all regards (not necessarily a conscious effort at deception). Marx had an artificially neat, "bureaucratized," compartmentalized approach to all things; he saw clear-cut, non-overlapping dividing lines in a multitude of phenomena discussed throughout all his works. (Other examples are the four definitive epochs into which he divides human history, and his clear-cut, non-overlapping social classes – really more like castes as he describes them.) In sum, Marx could be said to have had an excessively regimented manner of thought.

Along with this went a tendency to confuse the conceptual and the actual. That is, because Marx can, in the passage, *conceptually* link certain phenomena, in his own mind, only in certain definite ways, he takes this conceptual constraint to be due to the nature of the actual phenomena themselves. Because he *considers* physical properties only in their role as creators of use-value, he concludes that they do in *fact* only cause use-value: that they have no other characteristic. This is a confusion of the conceptual with the actual, of the contents of one's own mind with reality – a constant confusion in Marx's work. (But perhaps the situation can be looked at another way, as an aspect of dialectics: under the rules of that "mode of thought," it is legal to adopt whatever argument serves one's purposes, without regard to its validity. If you want something to be seen only in a certain way, you decree that it can only be seen that way. The important thing is to ensure the proper result; that's dialectics.)

Let us also consider for a moment the statement, "the exchange of commodities is...characterized by a total abstraction from use-value." Marx has proved this statement, to his own satisfaction at least; he has managed to deduce

it within the context of his closed system. But how does it compare to the real world? (It is useful, every once in a while, to lift our eyes from Marx's abstractions and consider the real world. "Paper will accept anything," as the Russian proverb has it. It is important not to be lulled by the hypnotic droning effect of words alone, but to mentally cross-check even the most seductive line of reasoning against our own experience of the world around us. It is hoped the reader will accept that world and its factual data as at least as valid as Marx's convoluted hypothetical system.)

Is the actual act of exchange, or let us call it the actual purchase of an item of merchandise, totally "abstracted from" considerations of use-value? Does the useful nature of the goods never enter the mind of the buyer? Are we to believe the buyer wants bread or apples, but that the thought never crosses his mind that these commodities are useful as food? Such an assertion is far-fetched. It is more realistic to say that, far from being totally unconnected to exchange, use-value is the ultimate reason for all exchange – that it is for their useful properties that goods are purchased, and that use-value is the source of all demand and thus of all exchange as such.

To be fair, we might assume generously that in saying use-value is totally abstracted from exchange, he means in a quantitative sense: use-value does not determine the magnitude of exchange value. That is after all what his whole argument is pointed at – use-value remains constant in magnitude, while exchange value varies, and so on. Marx's prose puts the case a little too definitively, but we can overlook that.

The fact remains that first, it is not obvious that use-value remains a constant; it is not precisely quantifiable. And as previously stated, use-value, even though constant, may be one factor among several that determine exchange value; it may set a base magnitude for exchange value, over which other factors superimpose a modulating influence. Though not the complete answer, use-value itself may still be related to exchange value. (In any case, use-value is not, as Marx conceives it, a natural property contained in the commodity. Usefulness is defined in relation to human *use* of the product; it does not exist in isolation as an actual physical entity. It is not a phenomenon on the same level with exchange value.)

Whatever determines the magnitude of exchange value, it is use-value which is the ultimate reason for trade, for demand, for exchange, and for exchange value. The two are not entirely unrelated. And anyway, Marx's ultimate subject is exchange itself; and even if use-value can be entirely divorced from exchange value, it must yet be seen as the motivating factor for exchange as such.

Another consideration in examining Marx's dismissal of use-value is his monistic approach to the subject of exchange value. For him there are not various facets or aspects of exchange value, various questions to be answered. It

is all one question; Marx wants to find "The Answer" to exchange value, The Key, the all-revealing solution. He never articulates a particular question, and therefore makes no distinction among various questions, or various aspects of the issue.

There is of course the question of the *magnitude* of exchange value, i.e., of what factors determine it. But we may discern or distinguish another question, namely, that of the *source* of exchange value. This latter is not necessarily subsumed in the former.

To be explicit: the reason for all exchange, the source of all exchange value, is (arguably) demand for products, which in turn may be seen as due to the usefulness of the products. It is for their useful properties that people buy goods (that is, useful either in the strict, utilitarian sense of being good to eat or wear, or in the broader sense of being good to look at or listen to, like art or music).

This question of the *source* of exchange value can be distinguished from that of what determines the magnitude of exchange value. This is not a difficult concept. By analogy, we can identify the source of motion when an object is dropped: it is gravity (a force F existing between two objects of mass m_1 and m_2, at a distance from each other of s, which is found by the formula $F=g*m_1*m_2/s^2$). That is the source of the motion – that force. But the magnitude of the motion, the distance S traveled at any time t, is different: a different answer, and a different kind of question. The magnitude of motion (the distance traveled) is given by the formula $S = V_i t + 1/2at^2$, and it is of course determined by the various factors in the formula. So it is not difficult to distinguish between the source of a phenomenon and its magnitude.

In the same way, use-value is an ever-present consideration in human minds, in the matter of exchange; it cannot be considered to be entirely unrelated to exchange value, for it is the source of demand, and ultimately, exchange; and without exchange there is no "quantitative relation obtained in exchange," no exchange value.

The magnitude of the exchange value is another matter. Here market conditions are determinative. While use-value in an abstract sense may be constant, the amount a person will be willing to pay for the useful product will depend on conditions that vary; and so will the amount the seller will be willing to accept. These mundane, fluctuating considerations assert themselves on top of use-value, which is a putative constant, like the modulation applied to a fixed radio signal making it produce particular broadcasts. The underlying, abstract, qualitative phenomenon, "demand on account of usefulness," or simply use-value, may be constant. The quantitative market considerations, constantly varying, are derived from it and determine the magnitude of exchange value.

(For example, the usefulness of bread, let us say, is constant, at least in the sense that it is edible; its physical characteristics are constant. But the *amount*

someone will pay for a loaf of it will be much greater in conditions of greatly-decreased supply, as during a war or famine. We see again how exchange value is determined by more objective, quantifiable factors than use-value. Usefulness, "use-value," is less definitive and less quantifiable.

To put it another way, we could think about the exchange value of a rabbit. Marx will attribute exchange value entirely to contained labor. To him, the magnitude, the source, and everything else about the exchange value of the rabbit is entirely due to the labor that went into hunting it. But the reason one buys a rabbit is for its usefulness; the source (as opposed to the magnitude) of its exchange value is the mere fact that it *is a rabbit*. It will be helpful to keep this distinction, which Marx fails to make, in mind.)

Marx goes on to further document his case that use-value is "totally abstracted from" exchange value (and that thus by inference physical properties are also unrelated to exchange value, since their only function is to produce use-value):

> Then one use-value is just as good as another, provided only it be present in sufficient quantity. Or, as old Barbon says, "One sort of wares are as good as another, if the [exchange] values be equal. There is no difference or distinction in things of equal value... An hundred pounds' worth of lead or iron, is of as great value as one hundred pounds' worth of silver or gold." As use-value, commodities are, above all, of different qualities, but as exchange values they are merely different quantities, and consequently do not contain an atom of use-value.

The significance of this passage is mostly lost to us today (much as is that of "Old Barbon"). It seems to concern a point which, if it ever had economic significance, is by now settled and moot, so much so as to be a truism.

The passage, remember, is an amplification of the statement, "the exchange of commodities is evidently an act characterized by a total abstraction from use-value." The point Marx is making here is apparently this: all commodities have different use-values, different uses (that is, they are different *commodities*); yet they may have the same exchange value. Therefore it follows that use-value must be unrelated to exchange value. Marx says then, use-value is irrelevant to exchange value: "one use-value is just as good as another, provided only it be present in sufficient quantity."

That is, one *commodity* is just as good as another, provided you have enough of it to equal the other's exchange value.

(Marx now uses the term "use-value" to denote the identity of the good itself. Every commodity has its own usefulness – there is a one-to-one correspondence

between uses, or use-values, and commodities. Thus while referring to the useful character of goods, the word "use-value" can by extension serve to identify a distinct commodity. Every commodity has its own, or *is* its own, unique "use-value.")

Marx's statement then becomes, "the exchange of commodities is... characterized by a total abstraction from what the commodities are." That is, exchange value functions the same for all commodities; what the commodity is makes no difference. And similarly, Marx's statement means "one commodity is just as good as another," provided its exchange value is great enough.

And his statement means, "As use-values, commodities are, above all, different commodities." Marx uses the term "different qualities" to say there is only a qualitative difference between different commodities, while with respect to exchange value there is a quantitative difference. The main point is, the type of commodity or its particular characteristics is unrelated to exchange value.)

Barbon says, "One sort of wares are as good as another, if the values be equal." That is, one kind of wares are as valuable as another if their values are equal. Or, "There is no difference or distinction in [the exchange value of] things of equal [exchange] value" – not exactly an earthshaking revelation. We are told that a hundred pounds' worth of lead or iron is worth as much as a hundred pounds' worth of silver or gold – to be specific, a hundred pounds. But the fact remains, this doesn't prove use-value is unrelated to exchange value (though as has been stated, the two are not phenomena on the same level).

One fallacy in Marx's argument is then the constantly-changing meaning he imputes to the term "use-value." As to a direct definition of it, all we have is Marx's introductory comment that "the utility of a thing makes it a use-value," i.e., a useful object. A use-value is a commodity or economic good valued for its usefulness.

It is use-value in the abstract sense, use-value as an attribute of the commodity, rather than as a term synonymous with the commodity, that interests us and that might possibly be thought to influence exchange value. What Marx evades is any consideration of use-value as a quantitative entity.

Marx's use of the term "use-value" is misleading. The reader tends to think that he is seeing a discussion of links between the *degree* of usefulness of a product (however measured) and its exchange value; but all Marx really says is that different products can have the same exchange value, depending on the amount of them that one has. He doesn't prove as much as it at first seems.

In any case it is a deception to redefine the term as meaning "what the commodity is," i.e. to use "use-value" as if it served to denote one particular commodity as distinguished from others. This semantic confusion is facilitated by the fact that Marx uses "use-value" in its original sense not to refer to a property *of* the commodity, its usefulness, but as a term applying *to* the

commodity, labeling it a "use-value" or useful thing. This wretched mangling of language enables him later to strip the term of any meaning *except* "a particular commodity."

Marx's argument, while serving his own purposes, avoids the genuine issue. What most people would probably think of in terms of a connection between use-value and exchange value, is that the *amount* of usefulness might affect the amount of exchange value. The idea is not "use-value" in a qualitative sense, denoting "what the commodity is," but rather the amount or degree of usefulness. Marx evades that issue. (It is in any case useless for Marx to look for a quantitative correspondence between a quantitative entity and a qualitative one, as Marx points out. But he ignores the quantitative aspect of use-value.)

It seems that the possibility of considering the amount of use-value in a product is one thing Marx writes expressly to dismiss. "Use-value," in his lexicon, now refers only to a particular commodity; it singles one out as distinct from all others, and the term loses all previous, generic meanings. "As use-values, commodities are, above all, of different qualities" – that is, they are different things, "but as exchange values they are merely different quantities, and consequently do not contain an atom of use-value."

This is more of Marx's arbitrary compartmentalization of reality; he attributes to the real, external world the neatly categorized and conceptualized divisions worked out in his own mind. He confuses the conceptual with the actual; because for analytical purposes he conceives of use-value as a separate thing, divorced entirely from exchange value, he assumes that in fact and in reality they are divorced. Thus he invests this assumption with the force of his own decree: from this point on, Marx commands, use-value can only be considered in one regard, as doing one thing only and as having only one characteristic: it distinguishes one commodity from another, that is, it makes a qualitative difference. It is forbidden to contribute anything quantitative to the commodity.

But one cannot separate use-value and exchange value so neatly in real life as in mental conceptualizations. The one may not determine or govern the other, but they cannot be entirely divorced, since they are both united inseparably within the physical body of the actual commodity. Use-value and exchange value cannot be considered separate and discrete simply because "*as* use-values" they are one thing and "*as* exchange values" they are another. That is to substitute the isolated or "abstracted" concept for the broader reality: we are still dealing with the *commodity*, after all.

If "as exchange values" goods are "merely different quantities" and do not "contain" any use-value, still as commodities they contain both use-value and exchange value. The two elements cannot be divorced from each other, because

they are united within the realm of the commodity. And Marx's dogmatic decree, his artificial compartmentalization of reality, cannot change that reality one bit.

There might be some merit in separating exchange value from use-value, if Marx had meant that they are not parallel terms and cannot be quantitatively correlated. This is so because exchange value is objective and quantitative, while usefulness is subjective and, if not qualitative, at least not objectively measurable. But that is not what he meant; indeed, he treats them as parallel terms and will go on to make use-value a sort of perpetual straw man in his analysis of exchange value and other phenomena.

Marx considers the two phenomena to be parallel terms, so he doesn't separate them irretrievably. In the present instance he only forbids the reader to find a causative connection between the two, or to think in terms of *how much* use-value a commodity has. This is very much his method – use-value is sort of a poor step-sister, on an equal footing in conceptual terms, always a candidate for being the answer to a given question in Marx's text, but somehow never actually making it as such. It is a straw man or foil, to be set up and knocked down; our expectations are always kept alive for it, but it never actually is chosen for any role.

Thus our attitude to Marx's elimination of use-value is ambivalent. We never thought it could directly determine exchange value in a quantitative sense, and on such a naturalistic, impersonal or automatistic level as Marx envisages. In fact, Marx's whole search for a value-creating "substance" is a farce. On the other hand, we do not consider use-value to be on a parallel level with exchange value, and at the same time we reject the logic (or actually, the dogmatic decree) of Marx's dismissal of use-value.

Nor is Marx's continual redefinition of the term, his randomization of the meanings of words, a helpful feature. Marx's text is with use-value as with so many other topics: not right or wrong in a straightforward sense, but bizarre, muddled and incomprehensible.

In other words, how could he be sure that even while dealing in different commodities, or, in his lexicon, different "use-values," one might not have the same *amount* of usefulness or utility or "valuableness on account of usefulness" in the different goods? Then in this sense he would have the same "use-value" in each different commodity, and the same exchange value, and there might indeed be a connection between exchange value and use-value. By switching the meaning of the term "use-value" to mean that different commodities are *ipso facto* different use-values, he manages to make a point he could not have made if he had used the term in the (in principle) quantitative sense, which is the normal sense of the word. Marx's argument depends on mere manipulation of word meanings, and is thus a form of sophistry.

"What the commodity is" is not a quantitative difference, but a qualitative one. Thus his straw argument, comparing use-value to exchange value ("the use-values are different, the exchange values are the same," so to speak) is even less appropriate than if the original meaning of the word were used. There is the illusion of quantitative comparison: "these two things have the same amount of one type of value, but different amounts of another." Indeed, that is the whole point of the exercise; Marx is looking for a quantitative relation explaining exchange value. But "different use-values" is not a quantitative statement at all.

In any case, Marx has made the point that exchange value is not dependent on use-value, in the sense of what the product is. One use-value is just as good as another if the exchange value is sufficient. This sentiment is seconded by old Barbon, and in regard to this line of argument it can only be said that Marx has an inexhaustible affinity for banality. He finds marvelous depths of significance, great intricacies of meaning, in the most pedestrian observations. (And so do his followers to this day. They marvel at such profundities as, "Political power comes out of the barrel of a gun" and Lenin's all-purpose saying, "Who, whom?")

Identifying the "Common Something"

"If then we leave out of consideration the use-value of commodities, they have only one common property left, that of being products of labor."

Marx makes a quick finish to his argument. Here we see the glib finale of Marx's chain of deductions: exchange value implies the existence of a "common substance," which cannot be use-value (which is constant), and which therefore must be, by process of elimination, the only remaining common property of all commodities: labor. It is a suspiciously facile argument, and suspiciously definite.

What is absent from the argument is first, any indication that Marx's logical deductions are honestly arrived at. Is he actually considering all the reasonable candidates for the role of "common something"? Is his text a serious and sincere logical exercise, or a glib excuse for advancing his chosen candidate for the key role, labor?

These points are related. Marx's approach is not scientific, that is, not empirical. Overall it is not an examination of all the possible *factual* data, no more here than elsewhere. *Of course* Marx does not actually consider all the properties of goods which might plausibly constitute the "common something." His approach is not to honestly evaluate all the data, but to make his discussion reach the end he desires for it.

There is no thorough searching out of the facts of the matter, no attempt to discern an objective correlation between real-world factors that constitutes a law of exchange value. Rather, Marx's method is logical, not empirical. His theory does not describe the real world, but prescribes an arbitrary system, the product of Marx's hypothetical assumptions and deductions about what the real world must be like.

This self-contained system, a logical construct or fantasy world, is what Marx will be dealing with – it is the field of inquiry for the rest of his text. Every question will be answered by reference to the assumptions and deductions, the axioms and theorems, of this self-contained logical construct.

Thus Marx writes not so much science as science fiction: he eschews description or investigation of the real world, and invents a fictional world with definite characteristics from his own imagination. Marx creates his own world as he wants it to be.

Let us consider the minimal landmarks of his argument. To his chosen assumption of the "pre-Aristotelian" point of view with regard to exchange value, he adds only two further ingredients, use-value and labor. (Those are the only two possible candidates he considers for the role of "common something.") He adds these ingredients and grinds his logic mill; use-value falls out and is rejected; only labor remains, and it is therefore by default the missing "common something."

One objection to this course of reasoning was made cogently by von Böhm-Bawerk: "It strikes one as strange that instead of submitting the supposed characteristic property to a positive test... Marx tries to convince us that he has found the sought-for property, by a purely negative proof, by showing that it is not any of the other properties."

That is, Marx uses abstract logic, rather than a factual investigation, to determine the facts. It has been stated that there are three things wrong with this method of logical deduction from chosen premises: Marx's assumptions are bad, his logic is bad, and the method itself is bad. It is as true here as elsewhere. Let us turn now to his logic.

Marx's announced purpose is to consider all the possible properties of goods which might be the "common substance," and thus to identify the correct one. We may ask a few questions about how he chose the very minimal set of possibilities he deigns to consider.

Actually, we could do no better than to continue quoting von Böhm-Bawerk's "cross-examination" of the theory. He first quotes Marx's deduction:

> "If the use value of commodities be disregarded... there remains in them *only one other property, that of being products of labor*." Is it so? I ask today... is there only one other property?

> Is not the property of being scarce in proportion to demand also common to all exchangeable goods? Or that they are the subjects of demand and supply? Or that they are appropriated? Or that they are natural products? For that they are products of nature, just as they are products of labor, no one asserts more plainly than Marx himself when he declares... that "commodities are combinations of two elements, natural material and labor." Or is not the property that they cause expense to their producers – a property to which Marx draws attention in the third volume – common to exchangeable goods?
>
> Why then... may not the principle of value reside in any one of these common properties as well as in the property of being products of labor? [14*]

These are pertinent questions, and difficult to answer convincingly and rationally. (They weren't answered convincingly when posed, either. It seems that in his time, Von Böhm-Bawerk was not so much responded to as howled down and vilified.)

The answer, realistically, is that two possibilities were all Marx needed to reach his pre-conceived conclusion, any others being superfluous, if not actually harmful to his case. The impression is very strong that Marx didn't desire to consider other possibilities besides labor, even supposing he thought of them; but it is doubtful that he was very diligent in thinking of them. What he needed was just two possibilities to consider: his chosen one, fore-ordained for the role, and one alternative to consider and dismiss, just for the sake of presenting a superficial appearance of "dialectical" argumentation. Such a dilatory argument, advanced for appearances' sake only, allowed Marx to avoid the blatant and obvious method of simply issuing a pronouncement, "Exchange value is hereby decreed to be due solely to contained labor."

In another sense, his argument is perhaps quintessential dialectics. It is the "clash of opinion" which supposedly gives rise infallibly to the correct answer; and two opinions are all that are necessary for a clash. Thus we have one considered possibility, to serve as a straw man by being set up and knocked down, and one "clashing" opinion, this being Marx's previously-arrived-at answer, brought in once the straw man is disposed of. These are all that are needed for a conclusive and valid "dialectical" form of reasoning.

* This is a different translation of Marx's words; the italics are von Böhm-Bawerk's.