

DISSOLVING A MUDDLE IN ECONOMICS,
or DR. MARX MEETS LORD RUSSELL*

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There are techniques of mathematical logic which are well suited to analysis and clarification of the concept of economic value. This essay reviews some important prior discussions of such value, exhibiting a confusion therein. Methods adapted from Bertrand Russell's analysis of the concept of number are used in this paper to lay down a sound definition of economic value.

The result is a definition which is (1) objective, (2) quantitative, (3) not open to the criticisms that cripple previous proposals, and (4) offers a conceptual clarification for economics.

I. Value

In her preface to the second edition of *An Essay on Marxian Economics*, Joan Robinson writes

... in spite of the offence which it has given, I cannot withdraw the remark at the end of Chapter III. The concept of *value* seems to me to be a remarkable example of how a metaphysical notion can inspire original thought, though in itself it is quite devoid of operational meaning. (*Op. cit.*, p. xi, emphasis in original.)

*The theory expounded here grew out of extensive discussion with Dr. Victor Elconin (West Coast University) and Professor Newman Fisher (San Francisco State University). Warm thanks go to Professor William Jacobs (Calif. State Univ., Los Angeles) for helping to christen Baros, Thermos and Megethos. I wish also to thank Professor J. Roger Lee (Calif. State Univ., Los Angeles) who, began nagging me to write, and subsequently improve, this paper.

The offending statement appears on p. 22 of Robinson's *Essay*; . . . no point of substance in Marx's argument depends on the labour theory of value. Voltaire remarked that it is possible to kill a flock of sheep by witchcraft if you give them plenty of arsenic at the same time. The sheep, in this figure, may well stand for the complacent apologists of capitalism; Marx's penetrating insight and bitter hatred supply the arsenic, while the labour theory of value provides the incantation.

To emphasize her claim about the metaphysical (i.e., I take it, the meaningless) character of the concept, Robinson puts the suspect term in italics in most of her book, and in particular in those places where, as she believes, the uselessness or actual disutility of the concept is most manifest (e.g., *op.cit.* pp. 26-28).

Robinson's fire is directed explicitly at Karl Marx's doctrine of value. According to Marx, on p. 37 of *Capital*, the exchange of commodities is ". . . an act characterized by a total abstraction from" the properties that make them useful, make them, as Marx puts it, use-values. He says, *loc. cit.*

A given commodity, e.g., a quarter of wheat is exchanged for x blacking, y silk, or z gold, &c. . . in the most different proportions. . . But since x blacking, y silk or z gold, &c., each represent the exchange-value of one quarter of wheat, [they] 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. . . is only the mode of expression, the phenomenal form, of something contained in it.

Farther on, discussing an exchange of two commodities, Marx writes that in the two different things

. . . there exists in equal quantities something common to both. The two. . . must therefore be equal to a third, which in itself is neither the one nor the other. Each of them. . . must therefore be reducible to this third.

. . . the exchange-values of commodities must be capable of being expressed in terms of something common to them all.

The "something" common to all commodities, Marx finds, is the labor expended in production. He says, *ibid.*, p. 38, that after abstracting from the useful properties of goods and from the distinctions among the various kinds of labor employed,

. . . there is nothing left but what is common to them all; all are reduced to one and the same sort of labour, human labour in the abstract.

Let us now consider the residue of each of these products; it consists of the same unsubstantial reality in each, a mere conglomeration of homogene-

ous human labour . . . all that these now tell us is, that human labour-power has been expended in their production, that human labour is embodied in them. When looked at as crystals of this social substance, common to them all, they are--Values.

So, according to Marx, the value of a commodity is the same as the amount of "human labour in the abstract" expended in producing it. How then, are amounts of value to be measured? Marx says, *ibid.*,

Plainly, by the quantity of the value-creating substance, the labour, contained in this article. The quantity of labour, however, is measured by its duration, and labour-time in its turn finds it standard in weeks, days, and hours.

The last two quotations may be taken as Marx's theory of value, summarized in his aphorism, "As values, all commodities are only definite masses of congealed labour-time" (*ibid.*, p. 40).

It is no news that Marx's theory is an elaboration of, but no essential advance on, the views of the so-called classical economists such as Adam Smith (see e.g., Bk. I, Ch. V of *An Inquiry into the Nature and Causes of the Wealth of Nations*). It is also no news that Robinson is not the first to reject the theory. For example, Bertrand Russell, writing in 1896, said of Marx's theory,

Marx's proof is fallacious in *method*; we can never be sure, by mere abstraction of differences, that we have hit on the *only* common quality of a number of things, or that the quality we have hit on is the relevant one. His proof is fallacious in *substance*, for commodities have also another common quality, utility namely, or the power of satisfying some need. (*German Social Democracy*, p. 17, emphasis in original.)

Critics of the Marxist view have picked at it on many grounds. For instance, Eugen Bohm von Bawerk, in *Karl Marx and the Close of his System*, presents what he takes to be a conclusive, destructive study of the labor theory, amplifying and completing the analysis he had made earlier in his *Capital and Interest*. One of the principal charges is that the labor theory is circular: it is proposed as an explanation of how commodities come to be exchanged in the proportions that they do, e.g., in the market, yet it is the exchange value that is used to determine the labor value in commodities. Indeed, it is argued, the Marxist qualification that value is to be measured by the "socially necessary" labor expended, "congealed" and "crystallized" in commodities, reduces still farther the

possibility of giving independent content to the labor theory apart from the concept of exchange value. This even though the former is supposed to provide an explication of the latter (see, e.g., Robert Nozick, *Anarchy, State and Utopia*, pp. 253-62). Again, critics hold that the conception of "human labor in the abstract", or of "homogeneous human labor", is unhappily vague and terribly confused, incapable of unambiguous explanation or specification.

Much of Böhm-Bawerk's *Capital and Interest* is a thorough criticism of a variety of competing theories of value, and not that of Marx alone. These are all, he finds, unsatisfactory, for the same sorts of reasons brought to bear against the labor theory: logical incoherence, lack of empirical content, being misleading or positively erroneous in explicating concrete economic phenomena, &c. To repair the deficiency, Böhm-Bawerk adopts the so-called "subjective theory" of value. He gives a succinct formulation in *The Positive Theory of Capital*:

... formally defined, value is the importance which a good or complex of goods possesses with respect to the wellbeing of a subject... goods can only have an effective importance for human wellbeing in one way, viz. by being the indispensable condition, the *sine qua non*, of some one utility which subserves it... we shall define [value], unambiguously and exactly, as : That importance which goods or complexes of goods acquire, as the recognized condition of a utility which makes for the wellbeing of a subject, and would not be obtained without them. (*Op. cit.*, p. 135.)

Moreover, he writes (*ibid*, pp. 135-6):

All goods have usefulness, but all goods have not value. For the emergence of value there must be scarcity... relative to the demand for the particular class of goods... goods acquire value when the whole available stock of them is not sufficient to cover the wants depending on them for satisfaction, or when the stock would not be sufficient without these particular goods.

The subjective theory is a major doctrine of the so-called "Austrian school" of economists, of which Böhm-Bawerk was a prominent early member. The theory seems to escape most of the criticisms specifically directed at Marx's labor theory, as well as those aimed at other extant "objective" theories. No doubt this explains in part, at least, why the subjective theory commended itself to the Austrian economists.

Unhappily for economists' peace of mind, the subjective theory is in its turn not without difficulties of its own. This is evident from a consideration of Ludwig von Mises' exposition:

If in accordance with an objective theory of value the possibility of an objective concept of commodity-values is accepted, and exchange is regarded as the reciprocal surrender of equivalent goods, then the conclusion necessarily follows that exchange transactions must be preceded by measurement of the quantity of value contained in each of the objects that are to be exchanged.

But modern value theory has a different starting point. It conceives of value as the significance attributed to individual commodity units by a human being who wishes to consume or otherwise dispose of various commodities to the best advantage. (L. von Mises, *The Theory of Money and Credit*, p. 38.)

The subjective theory does not try to make *quantitative* estimates of value. According to von Mises, *ibid.*, p. 39,

But subjective valuation, which is the pivot of all economic activity, only arranges commodities in order of their significance; it does not measure this significance.

From the subjective view, says von Mises (*ibid.*, pp. 46-47),

Value can rightly be spoken of only with regard to specific acts of appraisal. It exists in such connexions only; there is no value outside the process of valuation. There is no such thing as abstract value.

The proper notion of value, for the Austrian school, is "subjective use-value", and this, all parties seem to agree, is not susceptible to objective measurement. Therefore, von Mises writes (*ibid.*, p. 45), "If it is impossible to measure subjective use-value, it follows directly that it is impracticable to ascribe 'quantity' to it."

This subjective doctrine is open to the charge of circularity just as the classical theory is. For, what more is discovered about value in exchange, on this view, other than that traders exchange commodities in various ratios? The circularity becomes more patent upon recalling that what people do is not always what, in any reasonable sense of the term, they *want* to do. After all, people often act compulsively, impulsively, under duress, etc. Thus, the Austrian school must concede that many exchanges occur in ways that do not necessarily reflect the subjective valuation of the principals, unless the term "subjective valuation" is being persuasively redefined as the notion it purportedly helps explain.

So, both the classical and the Austrian schools propose to explain the economic conception of value in self-stultifying and unfortunately speculative ways. In part, this derives from a

confusion, avoided in the theory expounded below, between what a quantity *is* and what may be causally or functionally related to some concrete situations being appropriately characterized by determinate values of that quantity. This may be seen more clearly by analogy with a similar situation that might be imagined arising about the notion of *volume*.

II. Confusion

Imagine the savant Baros announcing the results of his cogitations. "Volume is a sublation," he announces. "It is the reciprocal negation of that which is the agent of compression, as is evident from my experiments. Thus, volume really is nothing but pressure expressed in an outward phenomenal form of inversion; it *is* pressure."

At once Baros is challenged.

"You have neglected the intensity of the Pholgistication, not to say anything of its accumulation. In fact, volume is a direct manifestation of *la motrice de feu*. For as one fires up a gas, that gas exerts itself to fill all space, and inversely as one damps the fire, the gas retreats and coils in upon itself. In a word then, volume is nothing more or less than temperature, that only, and directly." This from Thermos.

Impatient, scornful, Megethos interrupts. "Bah!" says he, "You have both been misled, deceived by the epiphenomena. You fight over the shadows and meanwhile the horse has run away--to my stable. Merely consider, my learned friends, that as you increase or decrease the amount of matter, the gas obediently increases or decreases its extension. Ergo, volume is nothing else than mass."

I venture that my three sages are disputing with only a little more silliness than the economists arguing about what value "really" is. It is not hard to resolve the perplexity in which Baros, Thermos and Megethos find themselves. It suffices to point out that since everything is what it is and not another thing, then volume in particular is--volume, and not anything else. Volume is a geometrical magnitude. This or that influence - pressure, temperature, quantity of matter, or what have you - may be causally or functionally related to the volume of a physical thing, as in the ideal gas law. But that ought not, and I am sure usually does not, lead anyone to think volume *is* any one or any combination of those other things.

Analogously, it seems to me, the economists' argument whether value is really congealed labor, or subjective marginal utility, or objective usefulness, or whatnot, is equally futile. It is tempting to say, as G.E. Moore might have, that value is value, and that is all there is to it. Indeed, I think it is true that value is value, but I also believe there is just a bit more to say about it.

III. Abstraction

My thesis is a simple one: The economic value of a thing is just what it will fetch in the market. Since the idea is so simple it may easily be misunderstood. So I here improve the opportunity to amplify and complicate.

To prepare the way, I review Bertrand Russell's celebrated definition of natural number (see *Principles of Mathematics*, Ch. IX). What, for example, is the number of justices on the Supreme Court? Well, it is the number of players in the starting lineup of the St. Louis Browns or the Jersey City Giants. It is also the number of major planets in this solar system, the number of eggs left from a dozen after making a three-egg omelet, the number of chapters in any book of Plotinus' *Enneads*, the number of syllables needed to complete a *haiku* after eight have been set down, &c. All the sets mentioned just now *have the same number*. The metaphysical question that arises is, what is that number that all these sets "have"? What sort of thing is it? What realm of being does it inhabit?

Russell, following Frege, noted that, whatever else may be true of the several sets that "have" the same number, a necessary condition for two sets to have the same number is that the elements of the sets can be matched in a one-to-one correspondence. For instance, the set of fingers on a child's hand is put in one-to-one correspondence with the set of pigs in the nursery game that begins "One little piggy went to market. . . ." Given any set of individuals, then, there are indefinitely many other sets with which the given set is in one-to-one correspondence. It is said that such sets are *similar* to one another. On Russell's view, all the sets similar to one another in the sense just prescribed form a class of sets, a subclass of the class of all sets of individuals. Thus, there is a class among the members of which are the set of Erinyes, the set of principals in a

menage a trois, the set of instruments needed to play the *Ghost Trio*, and so forth. Such a class is an *equivalence class* with respect to the relation of similarity, since: (1) every set is similar to itself, (2) if one set is similar to another, then that other is similar to the one, and (3) if one set is similar to a second, and the second to a third, then the first is similar to the third. In other words, similarity is reflexive, symmetric and transitive, i.e., it is an equivalence relation. Certainly one thing the sets belonging to one of these equivalence classes have in common is that they all belong to the same club. Moreover, membership in such a club is determined by what appears to be essential and primitive in the notion of "having the same number".

Russell's proposal, then, was to construe the number a set "has" as just that equivalence class to which it belongs. The number three, for instance, is the equivalence class of which the set of Erinyes is a typical member, and the number nine is the equivalence class of which the set of Supreme Court Justices is a member, and so on. To complete the tale, Russell then construed the term "number" as referring to the class of all such equivalence classes.

From the Russellian standpoint, numbers have been shown to be definable as logical constructions from less problematic entities, and the speculations of metaphysicians and numerologists are seen to be beside the point for the purposes of mathematics and its applications.

Russell's method may be characterized in general. He forms a *partition* of the overall class (for the case of number, the class of sets of individuals) into subclasses which (1) are jointly exhaustive of the overall class, (2) are mutually disjoint, and (3) are equivalence classes with respect to an appropriate equivalence relation (in the case of number, that relation is similarity). He then defines any specific entity of the required sort (e.g., the number three) as an appropriate one of those equivalence classes, and interprets the general concept (e.g., number) as the class of all such equivalence classes. That general concept and its specific instances, then, are *abstractions* from the more concrete entities that go to form the equivalence classes.

This method of abstraction is of quite general application in mathematics. The procedure has been adapted, for example, to explicate the concept of physical quantity, e.g., length, dur-

ation, temperature, &c., as that concept is employed in the natural sciences (see Chapter Six of my dissertation, *Space, Time and Measure: A Study in the Philosophy of David Hume*). Here I propose to apply the same point of view to analysis of the concept of economic value.

IV. Exchange

That one quarter of wheat exchanged, at a given time, for x blacking or y silk or z gold, &c., was taken by Marx to show that those quantities of those commodities were of equal value. Had he stopped there and thought a bit Marx might well have avoided the metaphysical muddle embodied in the notions of "human labor in the abstract" and "crystallized human labor" and the rest.

Suppose that a pint of milk, a pound of bananas, 0.0001 ounce of gold, . . . , are commodities that on Marx's view have the same value. Thus, they belong to *the same equivalence class with respect to the relation of exchangeability*. Similarly, a ticket to a concert, a copy of a best-selling novel, an eye-jangling sport shirt, . . . , may be equally exchangeable, belonging to another equivalence class with respect to exchangeability. Again, an automobile of a certain make, an elaborate recording sound system, an airline ticket around the world, a set of tools, an acre of desert land, . . . , may also be exchangeable, all falling into yet another equivalence class. In general, at any time, the class of commodities is partitioned into subclasses such that all the members of any one such subclass are exchangeable, even-stephen, one with another. For the purposes of economics, the exchange relation is a equivalence relation. For, (1) any commodity is exchangeable for some commodity or other, (2) if one commodity is exchangeable with another then that other is exchangeable with the one, and (3) if one commodity is exchangeable with a second and that second with a third, then the first is exchangeable with the third. From these conditions it follows, by a simple exercise in quantificational logic, that exchangeability is reflexive, symmetric, and transitive, and hence that it is an equivalence relation. It is not unreasonable, therefore, to *define* the value of a commodity as *that exchange equivalence class to which it belongs*, and to define the class of values in general as *the class of all such equivalence classes*.

Since economists have always known that commodities that exchange evenly, like Marx's quarter of wheat, x blacking, y silk, z gold, &c., are of equal value, it is by no means a surprise to discover that that is what value amounts to. No farther elaboration, with tales of labor expended, subjective wants expressed, actual utilities, or whatnot, either need or should have been told *in order to understand what value is*.

Value so construed is a quantitative concept, for it is easy to define addition, subtraction, negation, multiplication and division by real numbers, and the rest. To illustrate, if A is one value and B another, then $A + B$ is the value of the composite commodity composed of any one element of A together with any one element of B . An example may be useful: let A be the value of a quart of milk and B the value of a dozen eggs; then $A + B$ is the value of the composite commodity one-quart-of-milk-with-one dozen-eggs, which is, perhaps, the same as the value of one pound of hamburger. Again, if A is the value of a gallon of gasoline, then $1.5 A$ is the value of a gallon and a half of gasoline, which may be the same as the value of a pair of socks. It is even possible to introduce the notion of negative values. Thus in order to "exchange" a load of trash or garbage, the person who wants to dispose of it may have to *give* some other commodity, money for instance, to have it taken away.

The present proposal also helps to understand money. The pint of milk, pound of bananas and 0.0001 ounce of gold with which I began were all supposed to worth \$.25. In the days before clad coins and unbacked paper currency, gold and silver counted as money. But gold and silver are commodities, like any others, useful for some purposes, like filling teeth or making jewelry, and esteemed by some or scorned by others just as chocolate bars or racing cars may be. The precious metals, however, have certain virtues over other commodities, bananas say, for business purposes. They don't spoil, they are easily handled, and they are nearly universally acceptable in trade for other commodities. It is therefore convenient to use standard quantities of them as representative of the various equivalence classes into which those standard quantities would fall. So the \$.25 which I took to be the price of a pound of bananas would *be*, in the days of real money, a definite quantity of gold or silver or else a guaranteed certificate attesting a valid claim to such a quantity of gold or silver. Money therefore, is no more nor less than a standard commodity uni-

versally recognized as exchangeable in appropriate amounts for other commodities. In more abstract mathematical terms, a sum of money is a standard representative of the equivalence class to which it belongs.

In more detail, the various denominations of money may be regarded as providing units in which to measure values, just as the various multiples and submultiples of the meter, inch, or what you will, allow expressing the measure of other lengths relative to those selected lengths. For instance, the measure of foot in inches is a pure number, 12; the measure of the circumference of the Earth in miles is approximately 25,000; &c. Similarly, the measure of *the value of a pound of bananas* in cents is 25, according to my example; *the measure of the retail value of a gallon of gasoline* in dollars is, say, 0.609; &c. This choice of money (i.e., gold or silver or wampum or clam shells or whatever) to provide units of measure is, however, purely a matter of convenience, and sometimes other commodities provide more useful measures. Thus, quite frequently in *The Wealth of Nations* Adam Smith uses standard quantities of grain (he calls it "corn") to provide a measure for comparison of economic values at different times and places. Often another commodity, working time, is used to measure economic values. For example, in the San Fernando Valley edition of the *Los Angeles Times* for 6th September 1975 there is an advertisement urging readers to buy automobiles. The persuasion includes the following:

8. The cost of a new car now takes less from today's paycheck than it did 10 years ago. Then it took the median wage earner 5.1 months to earn the price of a base four-door car. Today, he can earn a four-door car in 4.4 months.

That is to say, according to the advertisement, in 1975 the number 4.4 is *the measure of the value of a base four-door car* with respect to the working month as unit. (For some amusing examples, see Ch. XXXIII, "Sixth Century Political Economy", in *A Connecticut Yankee at King Arthur's Court* by Mark Twain.)

This admittedly sketchy account may be summarized as recommending that the class of economic values be thought of as a semantical interpretation of the abstract theory of continuous quantity, that is, of what the physicists call "scalars". The class of economic values is a scalar class, i.e., *a continuous, ordered, additive Abelian group with natural number co-*

efficients, for which a class of measure operators isomorphic with the real numbers is defined. (A full account of that theory, including a development of the theory of real numbers may be found in the aforementioned Chapter Six of my dissertation.)

V. Retort

I have already answered the objection that the present proposal ignores the essence, the very meaning, of economic value, that it evades or denies what in the last analysis value ultimately is. That answer, again, is that what others nominate for the office may for all I know be causally or functionally related to value as I have defined it, but they are *not the same* as value. Unlike the other candidates, such as subjective marginal utility or the labor theory, this account defines value objectively according to the actualities of economic exchange; it is not open to Joan Robinson's charge of being either "metaphysical" or devoid of what she calls "operational meaning"; and it separates the question of what value *is* from the question of what *causes* a given commodity to have the value that it does (compare my parable about gas volume, above Sec.II).

Another possible objection is that on this account the value of a commodity may well vary from one time to another or from one place to another, and this, it may be thought, is not compatible with the notion of an object's having value. Once more I reply with an analogy. Length, for example, is a geometrical magnitude, and the class of lengths is a scalar class, namely, the class of sets of congruent line segments. That is what length *is*, for all purposes of mathematics, natural science and engineering. That is in no way inconsistent with the fact that the length *of* some physical object may be a function of other variables, such as temperature or mechanical stress. At any time, for instance, a rubber band has some length or other, but if it is stretched its length changes, in accordance with Hooke's Law perhaps. Similarly, at any time the value of a commodity is what it is, namely, the exchange equivalence class to which it belongs. That is in no way inconsistent with the fact that at some other time, for God knows what reasons, that commodity may well be placed in a different exchange equivalence class.

The complaint of von Mises, quoted above in Sec. I, that on an objective theory such as this "...exchange transactions

must be preceded by the measurement of value contained in each of the objects . . . to be exchanged," is easily met. There is no need for such a prior measurement, for *the consummation of the exchange is the required operation of "measurement"*. That is, the exchange itself is what puts the commodities in their several equivalence classes.

Another objection is that different quantities of "the same" commodity do not always exchange in direct to proportion to those quantities. For instance, milk bought in a half-gallon container costs, say, \$.68, while two quarts cost \$.35 each, i.e. \$.70 for the same quantity of milk. The reply is simply that the commodity being bought is not merely a physical quantity of milk. In the first case the commodity is a *half-gallon of milk in a half-gallon container*, whereas in the second case the commodity (a composite one) is a *half-gallon of milk packaged in two one-quart containers*. There is no obvious reason why these two different commodities must fall into the same exchange equivalence class, i.e., have the same value. Similarly, the exchange value of a tank-truck load of gasoline is not a simple multiple of the retail value of a single gallon of the stuff, nor does any theory I know of require that it be.

Again, the value of a commodity may differ at different times. In California, the value of a gin-and-tonic dispensed in a bar may be \$1.25, before the 2 AM legal closing hour, but after 2 AM, the price may be--well, who knows? In other words, the value of a commodity at any time or place is what it is, the exchange equivalence class into which it falls, although that value may easily be a function of such variables as time, place, legal conditions, relative scarcity, labor expended, &c., &c.

VI. Virtues

The account I have given restores the term "value" to a decent modicum of respectability for the purposes of economics. It is not open to Robinson's charge that it is a metaphysical concept, except insofar as the quibbles about the notion of class by nominalists like Quine are taken seriously. It is also not open to her charge that the concept is "devoid of operational meaning". I construe her use of the word "operational" to mean "having significant content", and on the present account the term "value" *does* have significance.

But the principal virtue of this story is that it is trivial. The present theory provides an opportunity for conceptual clarification, which, once achieved, makes the theory look like what it is: a careful statement of what should be obvious.

REFERENCES

- Bohm von Bawerk, Eugen Ritter, *Capital and Interest*, W. Smart, translator. London: Macmillan and Co., Ltd. 1890.
- _____, *Karl Marx and the Close of his System*, Paul Sweezy, ed. New York: Augustus M. Kelley, 1949.
- _____, *The Positive Theory of Capital*, W. Smart, translator. New York: G. E. Stechert and Co., 1891.
- Clemens, Samuel L., *A Connecticut Yankee in King Arthur's Court*. New York: Charles L. Webster Co., 1889.
- Marx, Karl, *Capital*, v. I, S. Moore and E. Aveling, translators, F. Engels, ed. New York: International Publishers, 1967.
- Robinson, Joan, *An Essay on Marxian Economics*, 2d. ed. New York: St. Martin's Press, 1966.
- Russell, Bertrand, *German Social Democracy*, 2d. ed. New York: Simon and Schuster, 1965.
- _____, *The Principles of Mathematics*, Cambridge: The University Press, 1903.
- Smith, Adam, *An Inquiry into the Nature and Causes of the Wealth of Nations*. New York: Modern Library, 1937.
- Trivus, Sidney, *Space, Time and Measure: A Study in the Philosophy of David Hume*. Doctoral Dissertation, University of California, Los Angeles. Ann Arbor: University Microfilms, 1974.
- von Mises, Ludwig, *The Theory of Money and Credit*, H. E. Batson, translator. New Haven: Yale University Press, 1953.

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