1997

Later published as: Gunning, J. Patrick. (1998) "Herbert J. Davenport's Transformation of the Austrian Theory of Value and Cost." In Malcolm Rutherford (ed.). *The Economic Mind in America: Essays in the History of American Economics*: London: Routledge.

Herbert J. Davenport's Transformation of the Austrian Theory of Value and Cost

This paper is about Herbert J. Davenport's contribution to the Austrian theory of value and cost. The term "theory of value," in today's words, means "theory of price."[1] "Price" includes the prices of consumer goods and the prices of the factors of production. The theory is distinguished from a theory of barter exchange rates by the assumption that all exchanges entail the use of money. An all-inclusive theory of price would aim to discover every cause of prices in the market economy. No Austrian economist has tried to achieve this aim. The Austrians have excluded theft and deceit. Also, while being careful to recognize that money is not neutral, Austrians have presented the theory of price independently of the theory of money. By doing so, they have disregarded the demand for and supply of cash balances. Besides these, Austrian authors have typically excluded time preference as a cause in order to achieve simplicity. Finally, in this field, the Austrian theory has not tried to account for credit and the money based on credit.

My point is only that when we speak of the Austrian theory of value, we are not talking about an all-inclusive theory but a special theory designed to show the relationship between the

---

[1]In the terms of the interpreters of the Austrian theory, it is a theory of one species of objective value, as opposed to subjective value (e.g., utility) or other species of objective value (the power of a commodity to produce certain effects).(Bonar, 1888, p. 13; Endres, 1966, p. 85-86.)

prices of goods and factors in isolation of the above-mentioned influences. Following this lead, this paper also assumes fully defined property rights, no fraud, neutral money, absence of time preference, and no credit.

The word "cost" is included in the title of this paper to indicate that the theory of relative prices should also describe or explain cost as we understand it in everyday life. Cost in this sense means opportunity cost, which may be different from the prices that a producer must pay for the factors of production.

When modern Austrian economists use the term "cost," they invariably refer to cost as subjective, meaning that it is a cost as perceived by some subject. When they use the term to refer to the cost of production in the market economy, they refer to cost as it is perceived by some entrepreneur.[2] They may not realize that this mode of expression is distinctly modern. In the early Austrian theory of value and cost, as espoused by Carl Menger, Friedrich von Wieser and Eugen Bohm Bawerk; there were references to the entrepreneur. However, it was only with the publication of Mises's *Human Action* that the entrepreneur as a role became central to the Austrian theory.[3] Mises did not see his contribution in this respect as original. In saying that "Entrepreneur means acting man in regard to the changes occurring in the data of the market," he referred to J. B. Clark.(Mises, 1966, p. 254) Moreover he had favorable comments for Frank Knight's 1921 book on the entrepreneur, particularly as regards Knight's distinction between risk

---

[2]See, for example, Pasour (1977) and Vaughn (1980).

[3]See Lachmann, 1951, for a confirmation of the idea that the central economic concept in *Human Action* was entrepreneurship.

and (intersubjective) uncertainty.(Mises, 1966, p. 292) But Mises went far beyond these writers by embodying in the entrepreneur role all distinctly human action. It is precisely this fact that distinguishes the later Austrian theory of value and cost from the earlier theory.[4] However, Mises was anticipated on this issue. I will establish in this paper that American economist Herbert J. Davenport (1861-1931) presented a modern Austrian view of value and cost as early as 1908 and that he did so in the context of assessing the theories of Bohm and Wieser.

A common belief among modern American Austrian economists is that following the first generation (or first two) of Austrians -- Carl Menger, Friedrich von Wieser and Eugen Bohm Bawerk -- there was a thirty-year hiatus in the spread of Austrian economics by true Austrians to mono-lingual, English-speaking economists. During that time the only economics of the Austrian masters available in English was that of Wieser and Bohm. Their books had been translated into English even before 1900 and they had written a few papers for British and American journals. These books and papers, however, were not the best that Austrian economics had to offer. Wieser had been attracted to socialism and thus did not maintain his focus on the theory of price. Bohm on the other hand had made a serious error in his materialistic view of capital and in the period of

[4]One must regard Israel Kirzner's definition of entrepreneurship as subconscious, spontaneous alertness (Kirzner, 1973 and 1979) as a deviation from this path, however. In his notion of alertness, Kirzner seems to have isolated an important, intuitive aspect of human behavior which is implicit in all informed writings about entrepreneurship. However, this idea of the entrepreneur is narrower than Clark's functional concept. For a discussion of the relationship between Mises's and Kirzner's concept of the entrepreneur see Gunning, 1997a.

production. Menger's seminal work was not available in English. Thus, the English-speaking world was deprived of an opportunity to learn what was best in Austrian economics.[5]

Austrian historians of thought acknowledge that some Americans either absorbed early Austrian ideas or arrived at them independently. Mises was aware of and complimented Frank Fetter, an early 20th century American, for having anticipated his own unique view of time preference and interest.[6] Moreover, he complemented Frank Knight's handling of the competition and uncertainty concepts.[7] But so far as I know, the only Austrian economist to have shown at least some awareness of the work on value and cost in American economics was Richard Ebeling (1977).[8] But Ebeling was mainly concerned with writers who sought to present the early Austrian theory to an English-speaking audience. He cites no references to American writers after 1891 until Mises's American students began to write on the subject.

If my interpretation is correct, it should surprise the American Austrians to find that Davenport, an American contemporary of Bohm, fully articulated the ideas contained in the 19th century Austrian theory of value and cost, criticized them, and proceeded to advance the theory

---

[5]That Menger should be regarded as the primary source for early Austrian ideas in economics is argued in Streissler (1972) and Streissler and Weber (1973).

[6]Mises makes four positive references to Fetter in *Human Action* (1966). One might presume that Mises's references were the reason Rothbard resurrected some of Fetter's writings (Fetter, 1977) and that Gerald O'Driscoll (1980) wrote a brief paper about similarities. Fetter is also cited by Kirzner, 1975.

[7]See the index of *Human Action* (1966).

[8]Ebeling mainly presented a bibliography on the concept. He did not present the theory and did not describe the American commentary on it.

to a point that is similar to Mises.[9] Indeed, in my view, Davenport's exposition was superior to that of Mises, although it lacked Mises's grounding in epistemology.[10]

Part 1 of this paper reviews the Austrian theory as presented by Bohm and as later modified by Mises. Part 2 presents a lengthy review of Davenport's contribution. Part 3 presents some hypotheses on why Davenport's work has been disregarded. A major factor appears to have been Fetter's highly negative review of Davenport's 1914 book. Part 4 presents a conclusion.

1. BRIEF REVIEW OF THE AUSTRIAN THEORY OF VALUE AND COST

The early Austrian theory of value can be traced to Menger's *Principles* (1871). But Menger had little to say about cost.[11] Around 1890, the *Principles*, Wieser's *Natural Value*

---

[9]See, for example, Kirzner's discussion of "most economists in the early twentieth century" in Kirzner, 1992, p. 101-102. Kirzner discussion is only indirectly about cost.

[10]Mises is well known for his encyclopedic knowledge of economics. Thus, I was puzzled at not being able to locate any references to Davenport's work in Mises's writings. Aside from their familiarity with the writings of the early Austrians and of Fetter, the only link I could find between the two economists was a common reference to the work of Dutch economist N.G. Pierson. Mises mentions him in Mises, 1978, p. 111, as a contributor to the socialist calculation debate.(See Pierson's paper in Hayek, 1933.) Davenport's 1908 (p. 268ff) book has a long and critical footnote on Pierson's notion of cost. The footnote begins with the statement that the critique will shed "some light upon the later trend of cost doctrine with the Austrian school."

[11]As usual, however, what he did say was highly revealing.

> Freight costs, loading charges, tolls, excise taxes, premiums for marine and other insurance, costs of correspondence, commissions and other sales costs, brokerage charges, the entire cost of the commercial banking system, even the expenses of traders and all their employees, etc. are nothing but the various economic sacrifices which are required for the conduct of exchange operations and which absorb a portion of the economic gains resulting from the exploitation of existing exchange opportunit-

(1888), and Böhm-Bawerk's _The Positive Theory of Capital_ (1889) were all available in German. James Bonar was apparently the first to present the Austrian ideas in English to an American audience in an 1888 *Quarterly Journal of Economics* paper.[12] In 1891, William Smart published a book in England on the Austrian school. Also, in 1891, Wieser wrote a paper in English for the British *Economic Journal* explaining the Austrian theory.[13] In the U.S., there followed a criticism by S. Macvane in the *Quarterly Journal of Economics* in 1890, to which both Bohm and Wieser responded.[14] In 1893, Macvane replied with two papers, one in the *QJE* and the other in the *Annals*. Meanwhile, Bohm wrote a paper introducing the Austrian School for the 1891 *Annals*. Also in 1893, Simon Patten published a paper relating to the Austrian theory. All this stir led to no less than three defenses of the Austrian theory in 1894 in the *QJE*, *Annals*, and the brand new *Journal of Political Economy*. The first, by David Green, was a refutation of Macvane's 1893 *QJE* paper. The second, by Bohm (1894a), included a long and scholarly survey of the literature, which discussed the Macvane and Patten papers as well as papers and books by German, Italian, and British writers. The primary target of his paper, however, was Marshall's doctrine of real costs. I discuss this paper below as representative of the early Austrian theory.

---

ies."(Menger, 1981, 189)

[12]See Ebeling, 1977. Bonar also published a review of Bohm's *Positive Theory* in 1889. For a recent discussion of the difference between Wieser and Bohm, see Elzas, 1988.

[13]Edgeworth criticized Bohm in an 1892 issue of the *Economic Journal*. Also Marshall had sought to deal with the Austrian ideas in the second edition of his *Principles* (1890) and in a later book *Elements of the Economics of Industry* (1892). Bohm wrote a paper for the *Economic Journal* in 1894b. Much of this is discussed in Bohm, 1894a. Because I am interested in the developments in America, I shall not pursue the British discussion.

[14]See Bohm, 1890 and Wieser, 1892.

The third was Davenport's first paper. It differed from the rest in that, although it contains a clear statement of the doctrine of subjective value, it did not mention the Austrian school. Davenport went on to publish three major academic books over the next twenty-two years, each representing a progressively higher stage in his subjectivism. I will describe these stages below.

The Early Austrian Theory

As mentioned, the term "value" in the Austrian theory means what we now call relative prices. The Austrian theory concerned the causes of the prices of goods and factors of production. It argued that the ultimate cause was the choices of individuals. By definition, choices are always made on the basis of utility. Every choice entails foregone utility. In the market economy, such choices lead to a tendency, argued the Austrians, to make prices equal to marginal opportunity costs. Since opportunity costs are nothing but foregone utility, the ultimate cause of all prices is marginal utility.[15]

The main opponents of this view at the time argued that labor and waiting are the sources of value. They defined these things in terms of either (1) quantity, (2) price, or (3) pain or disutility. In his 1894a paper, Bohm disposed of the first by saying that it is impossible to form a clear idea of the quantity of labor. Because of specialization, labor differs in nature and quantity as among individuals. As a result, we cannot use the quantity of labor to help us explain the

[15]We should exempt Menger from this characterization on the grounds that he did not express the Austrian theory in terms of "marginal." See Streissler, 1972.

prices of goods.(p. 327)[16] He accepted the second and went on to argue that the equilibrium market price of labor is merely foregone utility. In equilibrium, the price of labor equals, for the most part, the marginal utility of the alternative goods that could be produced with the labor, in terms of money. The main question that Bohm addressed was the extent to which labor disutility (the third source) was also a contributing factor to the cost of production. He answered basically that although Crusoe might produce goods up to the point where the marginal utility of the goods equals the marginal disutility of the labor expended, the production of goods in the market economy requires different kinds of complementary labor and other factors that are limited in supply. As a result, most people who perform work are not given the opportunity to work for as many minutes as they would like at the wage that is paid by the employer. Thus, for most types of labor, the subjective marginal utility of the goods that can be bought with a dollar earned is higher than the combined marginal disutility of labor required to produce them. It follows that while marginal disutility of labor is a source of cost, it is substantially less significant in determining wage rates than the marginal utilities of the alternative goods that could be produced with the labor.(p. 327-343)

It should be noted that Bohm's theory of value and cost, based on marginal utility, is not contradicted by the idea that cost is partly determined by the marginal disutility of labor. After all, marginal disutility is just as important as marginal utility. The idea of positive and negative utility implies a standard for defining zero, which is not an essential part of the subjective theory

[16]He did not directly discuss abstinence but the argument would presumably be similar. One person's abstinence cannot be compared with another's in terms of quantity.

of value. Bohm did not stress this point, although it came through clearly in Davenport's argument that it is better to regard the foundation of economics as sacrifice than as the utility entailed in a choice.(1902, p. 383, 1908, p. 330) Menger also used this term, as quoted above in his brief discussion of cost.

I would like to describe a methodological element in Bohm's analysis, since it provides the starting point for the Austrian theory as it developed later. As implied above, Bohm began his argument about whether cost could be associated with the marginal disutility of labor with a discussion of the meaning of cost in a Crusoe situation. Then he proceeded to consider what he called the "synchronously reckoned money cost of the entrepreneur."(325, 363) This is the cost that competing entrepreneurs would cause to emerge in the market. It is the equilibrium cost. In order to understand this cost, one must put himself in the shoes of the entrepreneurs. Many errors, Bohm implied, had resulted from the failure to distinguish correctly between the "synchronously reckoned" cost and "historical cost." It would...be a very serious sin of omission, on the part of economic science, to attempt an explanation [of prices] without any reference to the characteristic circumstance that these prices represent the present cost to the entrepreneur."(366)

Finally, I would like to point out a continuity between (1) Menger's initial point that for an item to be a good, someone must have knowledge of the causal connections between the item and the want it can be used to satisfy (Menger, 1981, p. 52) and (2) Bohm's reference to the entrepreneur. Bohm did not discuss the possibility that the concept of the entrepreneur might be used to represent, in part at least, what Menger had meant by knowledge of the causal

connections. For Mises, however, appraisement of the factors of production and dealing with uncertainty were the central characteristics of the entrepreneur function.[17]

The Misesian Theory

In a companion paper (Gunning, 1997b) I describe how Mises's image of entrepreneurship in the market transformed the Austrian theory of value and cost. I shall not describe it again here. However, some amount of repetition is necessary in order to show the reader the difference between the early and later theories. I repeat the section that shows how Mises might have traced cost from the standpoint of a particular entrepreneur in a particular market for a first order good to the markets for higher order goods. This will enable us to clearly see the difference between the idea that prices and costs equal marginal utilities and the idea that prices and costs are phenomena of subjective evaluation and appraisement. We begin by noting that the cost of producing a marketable consumer (first-order) good, as perceived by the entrepreneur who produces it, consists for the most part of the prices of the marketable factors of production needed to produce the good. Let us call this entrepreneur the first entrepreneur. The prices of the factors that he faces are determined in factor markets through entrepreneur bidding.

---

[17]Kirzner, 1992, chapter 4, is nevertheless correct to point out that Menger's focus was on the relationship between consumer evaluation and the prices of factors and not on entrepreneurship. Menger simply did not develop the knowledge theme and neither did Bohm. As Kirzner points out (1992, p. 102) and so far as I know, the stimulus for further development by Austrians was the economic calculation debate. But that debate was less about the production and use of knowledge than about how money and prices are necessary for the transmission of valuations and appraisals. It was not until 1937 that Hayek shifted the focus toward knowledge and 1940 that Mises shifted it toward entrepreneurship.

Since the first entrepreneur must bid higher than the next highest bidding entrepreneur, we can say that the cost of a given marketable factor is equal to the highest price bid by a second, *marginal* entrepreneur -- marginal in the sense that he is the entrepreneur who would have bid the highest price for the factor if the first entrepreneur did not. Following the trail to this second entrepreneur, we proceed to ask what led him to attach such a high appraisal to the factor. The answer is that he anticipated that if he combined this factor with other complementary factors, he could earn a profit. Thus the cost to the first entrepreneur depends on the profit that the second entrepreneur believed he could earn with the factor.

Now we might stop here and conclude that the second entrepreneur's anticipated profit from using the factor is, in some sense, a measure of the marginal utility that would result from using the factor in that employment. We could go on to reason that costs are the same as marginal utility by assuming an equilibrium in which all profit is zero. But this surely is insufficient, if not contradictory. The cost of a factor is not equal to its marginal utility in other uses for five important reasons. The first is that the presence of entrepreneurship is incompatible with the assumption of equilibrium. We can construct an image of entrepreneurs in which some entrepreneurs' anticipated profits from using a factor enter as costs of production in the calculations of other entrepreneurs. Or we can construct an image in which there is no entrepreneurship and therefore no cost calculation. The two images cannot legitimately be mixed.

The second reason, which was recognized by Bohm, is the disutility of labor. The complementarity of factors prevents most workers from being employed up to the point where

the marginal disutility of labor equals the wage. Thus, the entrepreneur's cost of the last minute of an employee's labor does not equal the worker's disutility of working for that minute.

Third, we have the problem of "utility margins." How many additional units of the second consumer good could be produced if the second entrepreneur gained control of the factor that is now being used by the first entrepreneur to produce one more unit of his good? The inability to answer this question in a definite way for the general case is why we should conceive of cost not as based on of marginal utility -- as Bohm and Wieser were prone to do on occasion -- but on the less quantitative and less continuous idea of sacrifice, or subjective value. To be sure, some consumer gain is lost because the second entrepreneur cannot use the factor for which the first entrepreneur bids higher. But we should not pretend that the concept of *marginal* utility in any way helps us comprehend that loss.

The fourth reason is the complementary of factors. Although entrepreneurs attach definite appraisals to factors -- in other words, although they compute a contribution of each factor to the business revenue -- we cannot directly relate this computation to foregone utility because of the "insolubility of the problem of physical imputation."(Mises, 1966, p. 494)

The fifth reason -- and this is the most important one in the transformation of the Austrian theory of value -- is that the alternative cost clearly depends not only on the entrepreneur's estimate of consumer utility but also on the assumption that there is an entrepreneur in the first place! Suppose that we take away the second entrepreneur and put the third highest bidder for the

factor in his place. Then the cost to the first entrepreneur would be lower.[18] This is not simply a displacement problem of complementary factors of production. What is displaced is not a physical factor but one of the unique human agents, who "represents a different aspect of the consumers' wants."[19] The agent is someone who we assume is a maker of prices and costs.

This example illustrates a source of prices and costs that was entirely missing from the early Austrian analysis, namely, the limited supply of unique appraising and price-setting entrepreneurs.[20] Thus it is that Mises transformed the old Austrian theory of value and cost, based on marginal utility, to a theory based on the appraisals and decision-making of entrepreneurship, although I am not aware of his actually making a claim that he had done so.

2. DAVENPORT

Davenport (1861-1931) was born in Vermont in 1861. Joseph Dorfman (1949, p. 375-376) writes that he was descended from two Puritan Statesmen. It appears that he was mostly

---

[18]I am, of course, speaking loosely here. The difference between the costs in a market economy with n entrepreneurs and those in the same economy but with n-1 entrepreneurs should be described in terms of a different configuration of all prices and costs. In terms of our example, instead of saying that the cost of using this factor would be "less," I should say that the cost of using many, or possibly all, factors would be different. But it is not necessary to go into such detail in order to make the essential point.

[19]Mises, 1966, p. 338.

[20]Menger, 1981, p. 172, clearly recognized that entrepreneurial activity was limited. However, as stated previously, he did not focus on appraisement.

self-educated. In 1882, at the age of 21, he entered Harvard Law School and attended for two and a half years as a special student. He studied at an accelerated pace and passed the final examination. Because he was a special student, however, the school did not grant him a degree. Then he went into business in South Dakota. He spent 1890-91 in Europe attending first the University of Liepzig and then L'Ecole des Libre des Sciences Politiques in Paris, after which he returned to business in South Dakota.[21] In 1894, when he published the above-mentioned article on relative price, he had at best the equivalent of a modern masters degree at universities where (I believe it can safely be assumed) no distinguished contributors to the Austrian theory of value and cost were located. Perhaps he had read the Austrian theory of value while in Europe or while studying for his degree in South Dakota.[22]

Although this paper is not about Davenport's life, a few more words are worth writing in order to further indicate his apparent independence and self-reliance. Following his 1894 paper, he obtained a formal undergraduate degree from the University of South Dakota around 1895, having taken "all the examinations for the four-year course" although he "apparently attended no

---

[21]Philip Newman (1952, p. 246) says that he spent two years in Europe, one year at the University of Leipszig and the second an the University of Paris. He goes on to say that he lost all his money in the Panic of 1893 and had to become a high school principal. After 4 years of boredom, he sought a job as a professor, but lacked a B.A. But Newman appears to have his timing mixed up because he has Davenport writing his textbooks five years after the 1893 panic.

[22]His 1908 book had a chapter on Say in which he makes a qualified argument that Say was more advanced in his thinking about utility and the entrepreneur point of view than all the modern writers on the subject.(p. 115) In that chapter, he quotes correspondence between Say and Ricardo on the cause of market prices.(p. 110) Thus, it is possible that he learned about the theory of value and cost by reading Say. In any case, his 1894 paper contains only two references, one to Courcelle-Seneuil and the other to Jevons.

classes."(Dorfman) He proceeded to publish two books, one in general economic theory (1896) and the other ostensibly designed as a high school economics text (1898). In 1897, he entered the University of Chicago, where he completed his Ph.D. in one year. He moved off to Nebraska to be a high school principal then returned in 1900 to join the faculty of the University of Chicago. While there, he formed a close friendship with Thorstein Veblen, which was to last for the rest of Veblen's life.

The *Outlines* and Relative Marginal Utility

Davenport made the subjective value theory the foundation of his first book *Outlines of Economic Theory* (1896), although he did not credit the Austrians with the theory! For example, although he quoted Bohm's *Capital and Interest* in several places, he did not mention Menger or Wieser. And he quoted Marshall and Sidgwick more often.[23] Moreover, he criticized Bohm's theory of interest.[24] Thus, when I say that he used the Austrian theory, I do not mean to imply that he learned the theory from the Austrians, although this is possible.

---

[23]One might surmise that in preparing his book, he read several treatises but remained largely ignorant of the Austrian school as a whole as well as other schools.

[24]Davenport, 1896, p. 134-136. His criticism was against the view that interest is the market premium of present over future goods. Although he pointed out that this view was an improvement over earlier formulations, it neglected to distinguish between loans made to consumers and those made to producers. Modern Austrians may not appreciate this point, since they have attributed the same theory that Davenport criticized to Mises. However, although Davenport did not fully articulate his view until later, his point was that in an economy with production, the market premium of present over future goods cannot be calculated unless one take account of the appraisals of entrepreneurs who are contemplating financing the production of goods for future consumption. His argument was in no way based on the idea of physical productivity for which Mises criticized Bohm and Hayek. See Mises, 1966, p. 527-28.

Generally speaking *Outlines* represents an early stage in Davenport's thinking. However, one feature of this book that takes on special relevance when we look at his later work is his conception of the entrepreneur. In *Outlines*, he preferred to use the term "imprenditor." After mentioning the usual qualities that we have learned to associate with the entrepreneur, he says:

> The employer (imprenditor) class exist because, by reason of the possession in peculiar degree of capital owned or hired, or by reason of superior ability in management, or by reason of economies in production possible only in industries conducted on a large scale, they are able to procure from labour larger utilities, and to provide for it larger recompense, risks being considered, than labourers could obtain from society without the intervention of the employer. It is always open to employees, if the imprenditor system seems to work them ill, to return to the system of decentralized industry where each labourer may be his own employer.
>
> The demand of the employer is an intermediate form of the demand of consumers for the goods produced. The employer may be regarded as *the agent or representative of the social demand*, engaged in the purchase of the results produced by labor, and compelled by competition, if effective, to recompense labourers approximately in proportion to the services rendered.(151, italics added)

Here is a clear statement of the entrepreneur as an agent and servant of the sovereign consumer. And this statement was made long before Knight.[25]

In speaking of real employers, as opposed to those of economic theory, Davenport goes on to point out that the differential profits of employers often result "from superior ability and readiness in tricks of adulteration, in the lying of advertising, and in oppression of employees."(152) This statement is also a prelude to Davenport's later work and hints of the reason why Fetter found that work unacceptable.(see below)

---

[25]See Gunning, 1993. I wrote in that paper, following a hint by Yoram Barzel, that Knight was a precursor of the modern theory of agency. When I wrote that paper, I was only vaguely aware of Davenport's work. It is clear to me now that while Knight dealt more thoroughly than anyone with the concept of entrepreneurial judgment, Davenport's formulation of the entrepreneur concept was in most respects superior to that of Knight. It is not surprising, then, to find that Davenport also conceived of the entrepreneur as an agent. This particular passage predates Knight's notion of the entrepreneur as an agent by twenty-five years.

Davenport's book was well received[26] and undoubtedly was the reason why J. Laurence Laughlin was able to arrange a fellowship for him at the University of Chicago (Dorfman, p. 380). The book also contained a subjectivist-based theory of credit, capital, and interest, which will not be discussed here.[27]

By 1902, Davenport had become sufficiently familiar with the Austrian theory to venture a paper entitled "Proposed Modifications in Austrian Theory and Terminology." The following quote from the introduction gives a good idea of what he accomplished:

> As against the cost of production theory, it will be urged that the price point of adjustment is not fixed *by* marginal cost of production, but merely, tendency-wise, *at* the marginal cost of production. As against the marginal demand theory it will be urged: (1) that the marginal demand also gives merely the point of fixation, not the cause of the fixation -- that in this case likewise the preposition should be *at*, and not *by*; (2) that it is only by a slight of hand in terms that marginal utility is made identical with marginal demand; and (3) that marginal utility strictly and accurately used, has nothing directly to do with the value [price] problem.(1902, p. 358-359)

Davenport explicitly addressed the writings by Austrian economists. He cited Wieser but mainly aimed his discussion at Bohm. He gave no indication of having read Menger, although he referred to Jevons, Gossen, and Walras.(p. 362) Aside from what was said above, Davenport argues that Bohm and Wieser often wrote as though the market price of a good (marginal cost of

---

[26]J. B. Clark (1897) wrote a brief praiseworthy review. W. G. Langworthy Taylor (1897) wrote a good long review in which he complimented Davenport for his treatment of money but, in the spirit of Simon Patten, complained that the book treated the issue of justice separately from the theory of price. Taylor was professor at the University of Nebraska and Davenport later (1899-1902) was appointed principal of the high school in Lincoln, where the University is located. I am uncertain whether they were related in any other way, however. Taylor is distinguished by a highly provocative and neglected book on the credit system as a stage in the evolution of human relations (1913).

[27]The best sources for Davenport's theories of these subjects are his 1908 and 1914 books, partly because he had by that time become more acquainted with the professional literature.

a factor) equates the marginal utilities (cost) of all buyers and that this implies a comparison of utilities at the margin. He pointed out that market price of a good (and the market price of a factor) equals marginal utility only for the marginal buyer and seller.

What Davenport was really worried about was the assumption of complete divisibility. Examples of marginal utility in demand assume divisibility of each good and divisibility of each buyer's evaluation of each goods. In addition, they assume that a person's comparisons of different goods are divisible so that each buyer can compare, with perfect continuity, any given quantity of each good with any given quantity of some other good.

On the sellers' side, the problem is worse. When the idea of marginal utility is extended to the theory of imputation in order to explain the relative prices of factors, it assumes that there is indivisibility of producer appraisals as among different units of the same factor, different factors, and even by different producers. That factors are not divisible is evident. More importantly, there is clearly no continuum among human agents.

Thus, Davenport proposed substituting the term "marginal relative utility" for marginal utility."[28] However, the logic of his argument should have led him away from both the term "marginal" and "utility." That it did not is probably due to the fact that these terms were so widely used. A close reading of his detailed criticism of Bohm and Wieser in his 1908 book

[28]See Davenport, 1902. Davenport's criticism is similar to that made later by Mises, the difference being that Davenport did not use the term "subjectivism." Mises referred to "stylistic faults in the presentation of the subjective theory of value."(1981, p. 167)

shows that he would have preferred to replace these terms with the term "sacrifice," as expressed in his original 1894 paper.[29]

In the paper, Davenport also objected to terms like "objective exchange value" and "subjective exchange value." The paper said nothing about entrepreneurship, which was to become the hallmark of his later work.

According to Frank Knight (1921), who was a student at Cornell during Davenport's tenure beginning in 1916, Davenport never mastered mathematics. If this is true, he would probably not have ventured a criticism of Walras but would rather have focussed on the imprecise and clumsy language of the Austrian expositors. On the other hand, as Davenport himself recognized, it is surely not in the *spirit* of the Austrian school to claim that they assumed the equivalent of complete divisibility.[30] For this reason, the most accurate view of the 1902 paper seems to be that it was an early statement of a later point that is now well accepted by the Austrian economists. This is that the significance of the "marginal utility" revolution was not marginalism but subjective utility.[31] And if we go on to look at what Mises says about utility, it is

---

[29]See especially p. 329-30 of his 1908 book and surrounding discussion.

[30]That Menger's theory of price did not assume divisibility has been recently argued by Endres (1995).

[31]Streissler points out that Menger "was the least marginalist of the Austrians. *The further his pupils escaped him, the more marginalist they became, precisely because they assimilated other traditions*."(1972, p. 429, italics in original) Mises conceived of the 19th century revolution not in terms of marginalism but in terms of the subjective theory of value. See Mises, 1981, chapters 5 and 7.

not utility that is important, but the "causal relevance for the removal of felt uneasiness."[32] This seems identical to what Davenport meant by the "formula of sacrifice" in his 1894 paper.

Value and Distribution

By 1908, Davenport had made entrepreneurship the central idea in his theory of price. The preface of his 1908 book *Value and Distribution* says that the book's emphasis is "upon the entrepreneur point of view in the computation of costs and in the analysis of the process by which distributive shares are assigned..."(vii) "The entrepreneur point of view" refers to a point of view that focusses on the entrepreneur's opportunity cost. It is distinguished from a collectivist, or social, point of view, which assumes that costs are calculated by the minister of a collectivist society. Davenport goes on to give credit to the person he believes to be the discoverer of the correct notion of opportunity cost: David Green! He does not mention the Austrians, apparently because he associated the Austrian analysis with marginalism.[33]

Another feature of the preface is modesty. He claimed that he did not regard his book as presenting a new doctrine. Its contribution was to select, delimit, and articulate the old. Reading between the lines, however, it is clear that he believed (1) that he had clarified the relationship

---

[32]Mises, 1966, p. 120.

[33]Davenport, 1908, p. 93n. In the same footnote, Davenport also points out that his own paper published later in 1894 covered "very much the same ground" and that he was entirely ignorant of Green's paper at the time. It is also interesting to note that one year before his 1894 paper, Green had published two papers related to the Austrian theory of value. So it is possible to hypothesize that Green's notion of value and cost was rooted in the Austrian theory. Davenport never indicated that he had seen the earlier papers.

between cost and entrepreneurship; (2) that he had furthered the development of the idea of "marginal relative utility," particularly on the supply side of the Marshallian scissors; (3) that he had used the idea of competitive entrepreneurship to derive what he called the loan-fund doctrine of capital; and (4) that he had made an advance on Fetter's interest theory through his loan fund doctrine. Moreover, the book was largely a critique of other economic writings, although it was a constructive one.[34]

In this book, he points out the difference between Menger, who was concerned with subjective value, and Jevons and Walras.(p. 334) However, although he has three chapters (out of twenty-seven) on the Austrian theory of value and cost, he focusses entirely on Wieser and Bohm, since their works "stand today as the most authoritative expression of what is characteristic and dominant in the unfolding of Austrian theory."(p. 338).

His first chapter on the Austrians was mainly a repeat of his 1902 paper pointing out the imprecise and clumsy language that he regarded as typical of Bohm and Wieser. The language problem is presumably why, at the beginning of a section on the cost of production, he makes the interesting observation that "[i]n truth, the Austrian analysis of subjective worth has not yet been fully presented."(322) Contrast this with Mises's claim in the 1920s that although Menger and Bohm made some errors, these errors "did not in the least detract from the great merit of their work; to explain the determination of prices in terms of the subjective theory of value."(Mises, 1981, p. 167)

---

[34]Wesley Mitchell points this out in his review of Davenport's later book. See Mitchell, 1914.

Austrian Theory Disregards the Human Agent-Entrepreneur

He spends his second chapter dealing almost exclusively with a disagreement between Bohm and Heinrich Dietzel over the meaning of value and cost.[35] In 1890 and 1891, Dietzel wrote critical papers on Wieser and Bohm. In 1892, Bohm responded. Davenport's chapter focussed on Bohm's response. Davenport quoted Bohm:

> The actual and essential features of the cost law, viz., that cost regulates the value of reproducible goods, that we commonly appraise the goods directly according to costs, that changes on the side of cost cause changes in the level of value, these things the marginal utility theorists have never in the slightest overlooked or denied.(Bohm as quoted by Davenport, p. 345-346)

Davenport goes on to paraphrase Bohm: "The issue, he (Bohm) says, is merely as to whether this cost law is final or whether, on the other hand, it rather does not itself need explanation."(345-346). The Austrian theory, Bohm points out, says that cost itself needs explanation. This point is the same that Bohm later made in his 1894a discussion of the Marshallian scissors.

Davenport correctly identifies this as the heart of the early Austrian view of cost. He points out that the classical school did not explain costs. The Austrian school must be credited with facing this issue fully. However, on the question of whether the Austrians succeeded in explaining costs, Davenport says that the Bohm's discussion in the paper only makes "a passable showing."(346)

In explaining costs, Bohm invoked the standard Austrian theory described above, namely, that in calculating costs, the entrepreneur takes account of the prices of the factors, which are ultimately derived from the marginal prices that consumers are willing to pay for the products

---

[35]This disagreement is demonstrated by a series of papers in the German-language journal Jahrbücher. For a list of references see Davenport, 1908, p. 339.

that they aid in producing. This is insufficient, says Davenport, because it fails to adequately account for the human agent, as evidenced by *entrepreneur reckoning* in the competitive system.(347) What he means by this is that Bohm fails to consider all of the distinctly different human agents whose appraisals go into determining the price of a factor of production. I discuss this issue further below.

Not only does he criticize Bohm for not making the human agent part of his explanation of value, he goes on to show that Bohm unconsciously slipped the human agent in as part of his explanation.

> But Boehm-Bawerk is right in insisting that the [price] aspect attaches to the production goods only by way of derivation from the value of the product. But it is equally true that the limitation of supply, whereby value arises, is upon the products only as a derivative from the limited supply of *agents*. And in fact, Boehm-Bawerk says as much; his argument for this aspect of the truth runs as follows: Priority of time is not the point; there is no summer till after the spring, but the spring does not cause the summer. The value of the product is explained by the fact that the production of goods are not in superfluity; put with this the demand, and value comes both for products and for cost goods, -- that is, the product has value by virtue ultimately of the same cause that gives value to the productive good. None the less the value of the product is farthest back in the chain of causation; the production good gets its value from the value of the product. So corn is not high because rent is paid, but rent is paid because corn is high. If the art of smelting ore were lost, iron ore would become valueless, but not iron; while to *forget* the methods of using iron would render both iron and iron ore valueless...(351, italics added)

The point, going back to Menger, as mentioned above, is that the value of a good and a factor depend upon agents' knowledge -- or, as Davenport would express it, upon entrepreneur reckoning.[36] Bohm implicitly recognizes this when he refers to "forgetting" in this example. Yet

---

[36]Davenport also stresses the advantage to clear thinking of regarding supply as reservation demand or, in other words, of describing equilibrium price in terms of reservation prices. This procedure brings to the fore the implicit assumption of a "fixed supply" in all economic analysis. Wicksteed, 1914, made the same point. And, apparently, the point was implicit in Wicksteed's earlier book, according to Robbins, 1934, note 9. Robbins (p. 27) also

his abstract argument refers only to utility of or demand for goods.[37] This idea of value and cost is expressed in Davenport's central ideas that price should be understood from the entrepreneur point of view and that cost always refers to an entrepreneur's cost.(see below)[38]

Critique of the Positive Theory and Natural Value

Davenport addresses the third chapter on the Austrian theory to Bohm's *The Positive Theory of Capital* and Wieser's *Natural Value*. He makes two points. The first and less substantive is that Bohm-Bawerk and Wieser used such slippery language that it is difficult to tell whether they understood the more essential points of the cost doctrines they aimed to promote. Regarding Bohm, he says:

> That between subjectivist cost, market-value cost, collectivist cost, and entrepreneur cost, there is a shifting so continuous that one is rarely sure of precisely what is being discussed, must fairly be accorded this much of justification, that Boehm-Bawerk himself does not recognize the importance of the distinctions.(353)

---

adopted Davenport's suggestion that we conceive of utility in its relative sense and not its marginal sense. Robbins apparently overlooked Davenport's 1914 book, as well as Davenport's posthumously-published critique of Marshall. Fixed supply, in this context, means entrepreneurship's belief that the means of satisfying consumer demands are not unlimited. They are scarce.

[37]Endres (1996, p. 89) presents a brief discussion on the role of knowledge and imagination in Bohm's writings, arguing that Bohm recognized the role of knowledge. Why Bohm did not discuss knowledge directly, however, is a puzzle.

[38]This is perhaps an opportune time to report a misreporting of Davenport by Israel Kirzner.(1975, p. 102-103) Kirzner lumps Davenport with Vilfredo Pareto and others as being among a group that was concerned only with the consequences of human behavior -- prices. He is unlike Frank Fetter and Jacob Viner, according to Kirzner, who "insisted on the need to dig below the surface phenomena of prices for their explanation." On the contrary, it might be said that Davenport dug deeper than any of his contemporaries, including the Austrians of the day.

Regarding Wieser, he says that although Wieser's book is about collectivist value (value under socialism, without money and calculation),

> ...so often there slip in competitive [private market] concepts and illustrations, rarely clearly distinguished, and...the point of view appears to be in perpetual flux between collectivism and competition. In truth, here, as with Boehm-Bawerk, the reader finds that the difficulties of distinguishing between subjective- and objective-value doctrines are extreme.(359)

The second, and more substantive point is an extension of the critique of Bohm on his failure to recognize the full importance of entrepreneurship. Bohm had pointed out that in the market for a consumer good, the marginal utility received by a buyer has a cost of production. This cost itself represents marginal utilities related to alternative products that could be produced with the factors of production. Davenport said this doctrine was either false or too vague to be of practical use. It is false because the prices paid for the factors of production do not equal the marginal utilities of alternative products for two reasons. First, we can by no means be certain that the price paid by any single entrepreneur is, in fact, the marginal price in the market. It would only be the marginal price in the imaginary world of equilibrium and infinitesimals, where marginal entrepreneurs always decided to bid (i.e., zero transactions costs, in the modern sense). In reality, the price paid in the market may be higher or lower than the highest price that the marginal entrepreneur would bid (under zero transactions costs). Second, there is complementarity among the factors in the alternative uses. As a result, the entrepreneur cannot accurately calculate the contribution of a unit of any single factor to the revenue he expects to receive. It is true that the entrepreneur must make an appraisal. But there is quite a difference between the appraisal and what is ordinarily implied by the marginal contribution of the factor. Even if the marginal entrepreneur had bid his maximum price, no one could determine the

marginal contribution of the factor to the utility enjoyed by the consumers of the good or goods that the factor is used to produce.

In spite of its falseness in these respects, one might still defend the Austrian theory on the basis of its usefulness in illustrating the important alternative cost doctrine. What is lost in reality may be gained in simplicity of exposition. However, the doctrine is both false and lacking practical use for a third reason. It disregards the fact that all prices and costs are the consequence of bidding by human agents -- entrepreneurs. Unlike the relatively harmless imaginary continuous marginal productivities and marginal utilities associated with the assumption of infinitesimal amounts of goods in the economist's model of competition, it is a fundamental methodological error to reduce entrepreneurial decisions to marginal categories. The marginal entrepreneur -- that is, the entrepreneur who actually gains control over a factor and determines its use -- is not in any reasonable quantitative sense infinitesimally different from his closest competitor, either in the product market or the factor market. He is different in a *human* sense; and his reduction to infinitesimals is a fundamental error.

Davenport's discussion of Wieser elaborates on this third reason. The following quote is illustrative:

> There is, therefore, for any particular production good, no such thing possible as one specific marginal use or marginal service or marginal utility or marginal productivity, as attributable to it in its own right and independently, or even as dependent solely on the relation of the [factor] in question to some other production good or goods, but only as also related to the situation and aptitudes and needs of a specific entrepreneur. There must, then, be as many specific marginal productivenesses as there are different entrepreneurs to come into relation with the good in question.(364)

That Davenport recognized his contribution to the modern Austrian theory of value and cost, as defined here, is clear from his remarks on Wieser's deficiency.

> [M]y appeal to the entrepreneur computation and the entrepreneur bid supplies the missing link in the argument of Wieser with reference to the different equations; somehow, he says, the market out of all the different equations, arrives at a marginal-utility imputation for each productive good. If it really does so, it is done by the bidding of entrepreneurs.(366)

Davenport goes on to correct a statement in Wieser about imputation by inserting a reference to the entrepreneur's calculation at every stage where Wieser speaks of a marginal utility or a marginal product.

Finally, anticipating Mises in the socialist calculation debate, Davenport says:

> ...It is, indeed, only as working out through entrepreneur computations and entrepreneur competitions, that production goods of any sort acquire value or rental, or rank as costs, and come thereby to have their little or much bearing on the relative volumes of goods seeking exchange against one another.(368)

However, so far I have not seen any evidence that Davenport recognized the importance of this to the debate over socialism. Of course, that debate did not occur until much later.

Economics of Enterprise

In *The Economics of Enterprise* (1914) -- the book that so much raised the ire of Fetter (see part 3 below) -- Davenport refined his theory of value and cost. The book covers much the same ground as *Value and Distribution*. However, in the earlier book, Davenport presented his views within the context of a review of the economic doctrines of other economists, meticulously relating each view to historical and contemporary writers. In this book, he seems to go out of his way to avoid referring to other economists. Instead, he systematically develops his economic theory in treatise fashion.

Subjectivism, Economics, and Knowledge

His introduction to the theory of price contains the clearest introduction to subjectivism of which I am aware. He begins by taking the perspective of the outsider who is observing price adjustments, for example on the stock exchange. The outsider sees sellers' offers and buyers' bids. But he has no knowledge of other offers or bids that remain to be disclosed. Then Davenport shifts to the perspective of "any actual trader." "The bids of the prospective purchaser are intended to give the scantiest possible information as to how high he will go...Each of the traders is shrewd to mislead the other as to his own limit."(43) Finally, he shifts to the economist's perspective. "[W]e, as economists, have...to concern ourselves with the psychology of bargaining and with the influences that the different traders' limits have on the method by which the market equilibrium is reached or is disturbed."(44) "We have to adopt the point of view of each of the different agents in the process rather than that of the mere observer." "As economists, we assume only the very facts that the traders are doing their best to guess at -- a range of actual conditions, which, as actual, the traders are conjecturing as best they can."(45) Economics had to wait twenty-nine years for a comparable statement on subjectivism.[39]

He goes on in this chapter to draw demand and supply curves (emphasizing that supply curves are really reservation price curves). He attributes the marginal concepts implicit in the curves to the "Austrian school of economic doctrine."(53) He repeats his criticism of marginalism, however, only this time it takes a more modern form that anticipates Hayek's

---

[39]See Schuetz, 1943. The source of Davenport's subjectivism may have been Henri Bergson, since there is a brief reference to Bergson's notion of time (see p. 174).

(1937) argument. Instead of referring to supply and demand, he refers to equilibrium analysis. He says, in effect, that "[a]ll these questions [about equilibrium based on marginal prices and marginal traders] really resolve themselves into the one great question: What are the causal forces in the market adjustment."(54) These causal factors, as we shall see, can all be classified by one label -- entrepreneurs. In a later chapter he consummates this line of thinking by anticipating the Mises-Hayek-Kirzner-Lachmann notion that "[i]n the study of the market process, the economist is interested in those forces at work tending to establish an equilibrium of price *under given conditions*."(76)

Supply and Cost

Davenport's book then proceeds by discussing supply and demand in three chapters, to which the discussion here will mostly be confined. The subject of the first is "Supply and Cost." In this relatively long chapter, he introduces the concept of opportunity cost in the modern sense of a producer's foregone profit from alternative uses. There are two points worth noting. First, he sharply distinguishes between cost in the market (what he calls "competitive costs") and costs in a collectivist society. The latter are computed "parallel to the Crusoe computation." The manager of the collectivist society would presumably calculate cost in terms of displacement, according to the value he attaches to the displaced items.

Second, his example of a typical cost account, as faced by the entrepreneur, seems broader than modern Austrians would ordinarily make it. Like the modern notion (and the Austrian notion of Davenport's contemporaries), it includes the "value of entrepreneur's own time

and supervision," possibly calculated by referring to the utility of a non-market alternative. "A cost calculation that is adequate and exhaustive must reduce to the price denominator all of the different resistances which bear on the case."(70) These include pain costs, disrepute costs and danger costs.

> [I]t is evident...not only that all outlays are elements of cost, but also that personal preferences, repugnancies, considerations of climate, neighborhood, home ties, national prejudice, wholesomeness, cleanliness, good repute, are all elements in cost to the extent that they impose expense to overcome them -- to the extent, that is, that they restrict supply and so increase the price of the remaining supply.(82)

He emphasizes that the cost account is forward-looking and intended to enable the producer to make a profit estimate. So far so good. But he also includes taxes. This is appropriate if one's aim is to describe cost in the hampered market economy. However, Davenport makes no distinction between the hampered and unhampered economies. Moreover, in discussing the individuals in the market economy who act in the role of entrepreneurs and thus make cost accounts, he includes the example of the safe-cracker!(p. 70) This is a prelude to his later argument that because cost is subjective, economists should not restrict the study of the "market process" to producers' actions that are assumed to benefit consumers. Whether the outcome of the "market process" is desirable or undesirable ought to be considered separately from the method of study and the logic of the deductions.

The main argument against this point of view is that if the economist's ultimate goal is to evaluate arguments relating to market intervention, it would be more convenient to start by imagining an economy in which no intervention is warranted. On the other hand, the danger is that having constructed such an image, we shall mistake it for the only kinds of systems that are

practically feasible, namely systems with incompletely defined property rights, enforcement costs, and goods (perhaps essential ones like national defense) that have the characteristic of jointness in demand. Since Davenport's inclusion of the safe cracker as an entrepreneur and burglars''' jimmies as capital led contemporaries to criticize this book, I will discuss this further in part 3.

The Critique of Marginal Utility

I now turn to his chapter on utility. His discussion of demand is pretty much standard textbook fare up to a point. He presents the theory of marginal utility and demand in the usual fashion. But then he follows it with a devastating critique:

> [O]ver and over again it is asserted -- by economists who ought to know better -- that the marginal utility to the bidder determines his bid; or that his bid expresses his marginal utility; or that the marginal bid expresses the marginal utility; or that the marginal utility determines, or is commensurate with, the market price. In truth, no one of these formulations is defensible.(92)
>
> All talk, then, of the fixation of price by either or both of the margins (buyer or seller) is nonsense...At the most, the market price is simply commensurate with the marginal offer or with the marginal selling price.(94-95)

Two other notable aspects of the chapter are as follows. First, he deals with Bohm's horse trade (without mentioning Bohm), pointing out that among the many horse traders in a market, there is no reason to suppose that any pair will be "at or near the margin of indifference."(97) Second, in his summary of the chapter he says that an individual's money demand for a good only shows that the marginal utilities from competing goods are *approximately* equal.

> ...Nor does the fact that two individuals are marginal at the same purchase price imply that the marginal utilities respectively involved are equal, but only that the ratios are the same between the utility in question and the utility foregone. And finally: utility being purely a relation to an individual, and men being different -- their desires different and incommensurable, and their money resources

> different -- there is no possibility of finding, either in the demand price of any individual or in the market, any expression or measure of utility or of marginal utility.(104-105)

Entrepreneur Cost

Now I discuss Davenport's chapter on "The Significance of Cost of Production," which contains the methodological foundation of his theory of value and cost. He begins by pointing out that (right thinking) economists, in their search for the causes of cost in the competitive system, have always used the concept of *entrepreneur cost*. They have always asked: what constitutes cost to the entrepreneur? Entrepreneur cost is not the ultimate cost. It is superficial but nevertheless necessary "as an intermediate step in the great value problem." "The whole process is captained by" the entrepreneurs. "Thus, the point of view from which to attack this problem of causes is the entrepreneur point of view..." In a competitive society, the "ultimate causes are forced to obtain expression" [through the entrepreneur process].(109) "[W]e must study an entrepreneur economics in terms of the entrepreneur process."(110)

He proceeds to make a point that is disregarded in explanations of value based on utility alone. He says that "[m]an as consumer is the end of the economic process...But he is not merely the end; as producer he is also the means."(111)

He gives the following description of the causal nexus *on the supply side* of value as between products and factors.

> [Given the demand for a product], [t]he causal sequence on the supply side of the problem runs from the relative scarcity of the factor to the relative scarcity of its product, thence to the relatively high price of the product, thence to the relatively high remuneration of the factor...But the hire of any factor as cost gets its immediate explanation not directly from the scarcity of the product but, *as an entrepreneur computation*, from the price of the product which price is in turn due to scarcity.(111)

In short, the entrepreneur perceives the demand for the product and the complementary factors that can be used to produce it. He then makes a computation, the result of which is a recognition of the scarcity of the factor. Knowing the scarcity of the factor (i.e., anticipating the prices that others will bid for the factor), he decides to ask a high price for the product. Believing that he can obtain a sufficiently high price for his product, he proceeds to bid, in competition with others, a high price for the factor.

This viewpoint marks the difference between the old Austrian theory of value and cost and the new theory. Under the old theory, prices can be traced exclusively to utility. But Davenport maintains that prices cannot emerge except through entrepreneurship. While the entrepreneur must account for utility indirectly when he estimates the demands of consumers, he must also use his knowledge. Moreover, in considering the "entrepreneur process," we must consider all entrepreneurs simultaneously. There are many different entrepreneurs, each with different knowledge and each using his particular knowledge to make appraisals of factors. These factors are partly complementary, meaning that no entrepreneur has a useful way to calculate the marginal revenue product of a particular factor. Yet somehow each entrepreneur must attach a money value to the factor in order to decide how much to bid for it. In light of this (and other considerations), it is insufficient and misleading to say that market price can be traced only to the utility of the consumers.

> It thus appears that costs to the entrepreneur are merely the guise in which, in an entrepreneur economy, the underlying and controlling situation of human needs on the side of demand, and of productive ability, and productive equipment on the side of supply, present themselves to the entrepreneur and bear upon him in his process of placing a particular product upon the market. Costs

> are merely one point or aspect -- but the central point or aspect -- in the process of production and distribution in the competitive regime.(118)

This says that costs represent both the entrepreneur's estimate of demand and his specialized knowledge and expectations about the money outlays and other resistances to satisfying those demands that are implied by the concept of scarcity. The inclusion of "productive equipment" is not a slip from subjectivism, since he is referring to what the entrepreneur perceives.

The Role of the Entrepreneur

I have argued elsewhere that the main contribution of Mises to economics was that he, in effect, defined entrepreneurship as distinctly human action.[40] Whether this interpretation is correct, it is surely true that with respect to the problem of tracing the source of value in the pure market economy, the only method we have is to try to isolate the distinctly human action and show how it would operate in relation to a model of an economy that contains producers, consumers, savers, and factor suppliers. Just as the source of value in a Crusoe situation is the humanness of Crusoe -- his ends and means as he perceives them -- so also is the source of value in a market economy the humanness of the people. And if we can capture the active part of that humanness in a single personage, we shall be able to describe the source of value by referring to that personage. Now what I call here the active part of humanness or "distinctly human action" would have to include what we know from intuition and experience about the nature of human wants. Surely, we know that these wants are continually changing. However, when we focus on

---

[40]See Gunning, 1997a.

the problem of cost, clear thinking requires that we hold those wants constant. If we assume that ends are given, then entrepreneurship must refer entirely to means. Thus we arrive at the definition of the entrepreneur as the representative, or embodiment, of distinctly human element involved in causing given wants to be satisfied. Davenport, as I see now, was the first to my current knowledge to recognize this point:

> In the main, then, the process is captained by the entrepreneur, is guided and supervised by him, and worked out through him. It may, indeed, be said to be entirely so worked out and guided, if only the concept of entrepreneurship be given its proper extension. All employers of labor or of instrumental goods for hire are entrepreneurs, no matter whether the prospective product is to be offered for sale or not. If it have no sale price, it is because it has a reservation price; it is still a price product. The client of the lawyer or the patient of the doctor, the master in his hiring of his house servants or his valet, the employer of labor in the raising of garden products for the home table, are all bidders for factors of production and are entrepreneurs for this -- and for every other -- purpose of economic analysis.(139)

Related to this definition of entrepreneurship was Davenport's definition of profit. He considers three possibilities: (1) "exceptional, unclassified, irregular gains," (2) "compensation for the independently working factor of *in production*," or (3) "the still broader notion of compensation for the independent human factor in the *quest for gain*." Logically, he chooses the third. "*Profit*...points to gain *without the intervention of an employer*; it is, then, remuneration to the entrepreneur for entrepreneur activity as such."(404)

3. FETTER'S REVIEW

Frank Fetter attacked *The Economics of Enterprise* viciously in a fifteen page review.[41] His criticism might not concern us were it not for the facts that (1) Fetter was praised by Mises, (2) his papers and books have been referred to favorably by several other American Austrian economists, and (3) one of the papers referred to includes this attack. Lacking the time to read every relevant paper and book, the American Austrians naturally rely on the references of others whom they respect. In the case of Fetter, they have made a mistake.

Fetter's paper contains five criticisms of Davenport. They are (1) lack of scholarly attitude, (2) the definition of economics as the theory of price, (3) the inclusion of predation and exploitation, (4) the loan fund theory of capital, and (5) the position of technical productivity in the theory of price and interest. In this paper, I shall focus on the first three of these.[42]

Lack of Scholarly Attitude

Fetter claimed that while Davenport's ideas had become pretty familiar to most American students, marking Davenport as a progressive and member of the group who are in the process of revising fundamental theory, he presents his ideas as if they are almost entirely new.(550) "Such a standard of scholarship is to be condemned, for, without conscientious references, essays in the field of controverted doctrines can attain but little of their possible service."(551) Fetter used the

---

[41]Fetter, 1914b.

[42]For an extended discussion of the second two, see Gunning, 1997c.

example of Davenport's treatment of "social capital." He claimed that Davenport had ignored the writings of Clark, himself, and Fisher. In Fetter's opinion, these writers had made it possible to end the error of confusing what he called business economy with political economy. Business economy uses the private concept of capital, meaning that capital is what business entrepreneurs perceive it to be. Political economy, which includes discussions about whether the goods produced in a society and the means of production are desirable, uses the "social wealth" concept. He chastised Davenport for failing to credit the above-mentioned authors for developing the business economy-political economy distinction.

Three points should be made about this criticism. First, it is misleading. There is little doubt that Davenport was guilty of neglecting the doctrines of others since he seems to have intentionally avoided referring to other economists in the 1914 book. However, his earlier 1908 book methodically laid out each of his ideas in the context of the history of economic thought, giving credit to and often criticizing practically all of his important predecessors, including Fetter. Fetter indicated in his review that he was aware of the 1908 book. However, he neglected to note the vast difference between the two books on this score, suggesting to the uninitiated reader that "lack of scholarship," by Fetter's definition, was a characteristic of Davenport's writing in general.

Second, Fetter appears to have been wrong in his judgment that the distinction between private point of view and the social point of view had taken hold in professional economics. One piece of evidence stands out. It is the professional reaction to Davenport's 1910 Q.J.E. paper in which he criticized the "social point of view" and claimed primacy for the individual point of

view.[43] A year later, the Q.J.E. published a lengthy paper, in two parts, by L. H. Haney (1911,1912) which sought to defend the social point of view.[44]

Third, Davenport's concept of private capital was different from that which Fetter and the others were using. To the others, private capital referred to the market value of assets anticipated by "business entrepreneurs." To Davenport, it referred to the money value of assets perceived by all individuals, each acting in the role of the entrepreneur. This difference in concepts of private capital changed the nature of the business economy-political economy distinction In retrospect, it seems reasonable for Davenport to have assumed that a reader like Fetter would have appreciated this fact. If Fetter had appreciated the new concept of private capital, he might have constructively shown how it can be used to embellish the business economy-political distinction instead of criticizing Davenport for not giving Fetter and others credit. Unfortunately, Fetter did not appreciate the difference between the two capital concepts.

A final point regarding the scholarship issue is that, all things considered, Fetter himself appears to be more guilty of the sin with respect to Davenport than Davenport is with respect to Fetter. Besides his 1908 book, Davenport had described his views on capital as early as 1904 in a paper entitled "Capital as a Competitive Concept," which made several references to Fetter's work. One of Davenport's papers (1905) had Fetter's name in the title. Then there was the 1910

---

[43]This paper, by the way, also had few references. If Fetter had read it -- and it seems likely that he had -- he would presumably have had the same complaint against it.

[44]The interested reader should also consult J. M. Clark's review of the 1914 book.

paper referred to above. I have reviewed practically all of Fetter's academic papers, including his 1914a paper on interest theories. No reference to Davenport appears until 1927.

Economics as the Theory of Price

Davenport defines economics as the science that "treats phenomena from the standpoint of price." "Price, then, must attend and characterize all things that are economic; and all things so attended are so far economic in character."(Fetter, 554, as quoted from Davenport) This definition, says Fetter, excludes self-production, barter, and psychic incomes. After making such a definition, Davenport nevertheless proceeds to include these things in his discussion of the cause of price. "This reversal of the plain sense of the definition [of economics] is done by the simple expedient of introducing the idea of reservation prices, or refusal prices, and then assuming a hypothetical price for everything."(554-555)

It is not entirely clear what Fetter objects to here. One possibility is that he defines price and all related phenomena in an empirical sense. Under this interpretation, Davenport's definition of economics would indeed exclude the items Fetter mentions. However, Davenport's notion of the theory of price refers to calculations in terms of price. A thing is economic if someone uses price to evaluate it (or, more accurately, if someone *appraises* it). Thus, self-production and barter are economic if an individual appraises them in terms of money. Psychic income is the same. In fact there is no difference between Davenport's definition and that of Mises, who makes economic calculation (in terms of money) the defining character of economic phenomena. To say that economics treats all phenomena from the standpoint of price does not

necessarily rule out monetary calculations based on the prospect of self-production and barter. The problem is that Fetter does not appreciate the reservation demand approach.

The Reservation Demand Approach

When we take the reservation demand approach, we view each actor as both a demander and supplier. By considering both simultaneously, we avoid the error of conceiving of cost in any other sense than sacrifice (foregone opportunities). This leaves us free to explore the economic organization of supply (i.e., production with the use of factors) from a purely subjective viewpoint. Using this approach, every limitation on the non-human factors of production is regarded entirely in terms of how it is perceived and interpreted by a human demander-supplier.

To understand how the reservation demand approach is used, we begin with a single market. We assume that market participants own a fixed amount of an already-produced good. The pricing problem is that of finding a price at which each potential consumer is satisfied with the amount that he has in light of the offers to buy and sell of his fellow consumers. Thus we construct an image of an equilibrium price.

Using the single market as a metaphor, we try to envision a similar phenomenon at the market economy level. The difference is that to achieve the goal of considering each actor as both a demander and a supplier, we cannot assume a fixed supply of produced goods. We must assume that the goods are produced with factors of production. The metaphor suggests that we might assume that there is a fixed amount of various types of factors. However, this is not realistic. Production as we know it in everyday life requires human factors of production, both in

the production process and in identifying and allocating the other factors. In other words, we try to construct an image in which each individual can be said to have a reservation demand for his factors, including his own effort. But this immediately leads us to consider the personal uses and the psychic income associated with the factors, along with the entrepreneurship entailed in appraising the factors and allocating them to various uses.

Seen in this way, the reservation demand approach is simply a means of incorporating the a priori assumption that the owners of factors perceive alternative uses associated with the alternative demands for factors. Moreover, the reservation demand approach pushes one in the direction of considering entrepreneurship in a broad sense. Every owner of a factor would appear as an entrepreneur when he is making a decision on how to use his factors.

Inclusion of Predation and Exploitation

Davenport's Argument

Davenport defined capital to include the owner's appraised value of franchise rights acquired by bribing politicians or the police, burglars' jimmies, and the rights associated with the markets for "undesirable" goods like prostitution. He reasoned that if the owners regard these as potential sources of money or income, they are factors of production from the entrepreneur viewpoint. Partly on this basis, he estimated thatroughly "two thirds of the durable private bases of income in the United States are nothing else than this capitalization of privilege or predation."(519) Roughly "[f]ive ninths of the durable wealth reported by the census is made up of privately appropriated social wealth."(521) His purpose, he says, is *not* to show that the single

tax program is inadequate or to promote socialism but "simply to point out the significance of the unearned increment of land or of privilege in its bearing upon the present distribution of wealth and poverty."(522-523)

He goes on:

> The present quest is to get to the heart of the growing poverty of some part of our present population -- to point out, for example, why the wage earning classes of our cities are finding it increasingly difficult to get meat to eat, and why, with the more unskilled of these, the Italians, for example, it is no longer possible for the wife and the wage-earning girls and the children to have any meat at all.(523)

A new economics is needed, he says.

> Economics must cease to be a system of apologetics, the creed of the reactionary, a defense of privilege, a social soothing syrup, a smug pronouncement of the righteousness of whatever is -- with the still more disastrous corollary of the unrighteousness of whatever is not...We economists must, then, come to recognize that we have not rightly analyzed the notion of capital and have wrongly interpreted the question-begging term *productive* in economic affairs. We have assumed that private gain and social welfare are approximately interchangeable concepts.(p. 528-529)

Ethical Implications

In this discussion, Davenport shows that he recognized a contradiction between (1) the ethics to which many of the writers on distribution appeared to subscribe and (2) the status quo distribution of wealth. Consider first the apparent ethics of these writers. In the natural rights philosophy espoused by free marketeers, one has an ethical right to property if he acquires it through his own effort or ability or if he acquires it through exchange, the items exchanged having been acquired by the owner through his own effort or ability. In this context, one has no ethical right to a franchise obtained through bribery. All rights acquired in this way are unethical. More broadly, all rights that are acquired through the use of force, except insofar as the force is

used to enforce natural private property rights, can be classified as unethical and the owners regarded as undeserving.

In the case of burglars' jimmies, the issue concerns tools that are intended to violate private property rights. A comprehensive list of such tools would include weapons intended to be used in robberies, murders, or rapes; machines used to copy others' patented or copyrighted materials; tools used to make stolen property more marketable; the business property of dealers in stolen goods; tools and contracts that help thieves, robbers, and rapists avoid punishment; rights to the services of employees who possess specialized bribe-making skills; and so on.

Stepping outside the natural rights ethic but remaining within the ethical realm, one might want to add goods or services of which one *disapproves* (demerit goods?) Presumably, one might regard the rights associated with the production of such goods or services unethical or at least immoral. Rights used to support a market for drugs, prostitution, and gambling, for example, might be condemned according to such a view.

Now let us suppose that an ethicist believes that the various rights mentioned in the last three paragraphs are immoral. Yet he also says that the existing distribution of wealth in the current society is justified because it was due to the application of productive factors to the satisfaction of consumer wants. He would obviously be involved in a contradiction, since the current society contains such rights. Either his view of the current society is unrealistic, his reasoning is faulty, or both.

Fetter's Assessment

Fetter labeled Davenport's economics "unsocial."[45] He argued that others had seen the truth and limitations of using the social view of capital. Unlike them, however, Davenport

> scraps the whole existing structure of theoretical economics with a ruthlessness that makes Karl Marx by comparison look like an editorial writer on a conservative Wall Street journal. The simple alternative of revising his concept of economics is not chosen. He does not see that he is attributing absurdities to others simply because he assumes that they hold his definition of economics.(563)

*

Fetter goes on to argue that Davenport's excesses "endanger, or at least retard, the progress of the better of the modern theory." The newer theory, he asserts, takes account of both the private and public phases of economic questions. It is becoming a more efficient agency in social reasoning. Because of this the newer, modern theory must part company with Davenport.(564-565)

Regarding predation and privilege specifically, Fetter says:

> Of course, it is the task of citizenship to stop fraud and cheating, corruption, public and private, whereby many private possessions are wrongfully acquired; it is the task of economic policy to correct the errors of the past by experience to determine for the future a better delimitation of the forms of private property.(564)

He concludes his review with some advice to other readers:

> The many students of economics who have already, even when under adverse pedagogic influences, gained some sympathy with, and insight into, the newer theory may rest assured that it leads toward life and service, not to economic hari-kari.(565)

Fetter's statements were surely misleading. It is not clear how adopting Davenport's economics would lead to "economic hari-kari," whatever that is. However, regarding the study of

---

[45]The title of the concluding section of Fetter's review is "Unsocial Economics and Its Rash Conclusions."

economic theory as leading toward a life of service, consider what Davenport wrote near the end of his book. He wrote that the aim of this book “has been to furnish to progressive social workers that ultimate basis in economic theory which is theirs by right of truth.”(528) Thus, like Fetter, he saw his book as useful to someone who is pursuing a life of service.

4. CONCLUSION

Davenport advanced the Austrian theory of value and cost in ways that have not been recognized by modern economists who associate themselves with the Austrian school. He anticipated Mises's criticism of the Austrian school's presentation of the subjective theory of value, albeit from a less sympathetic perspective. He presented the first clear statement of the subjectivist viewpoint in economics. He employed the reservation demand approach to factor markets as the proper complement to Menger’s “orders of goods” approach. He anticipated Mises's theory of prices and markets by placing entrepreneurship at the center. And he defined entrepreneurship in virtually the same way as Mises.

Mises, of course, was the first to identify the praxeological foundations of economics. Davenport did not do this. Nor did Davenport attack positivism, mathematical economics, and econometrics. The reason for the latter is probably that these tendencies in professional economics were not so evident at the turn of the century. Another important point must be that although neither man achieved great success in the eyes of professional academics, Mises was

able to gather around him in the 1920s a number of ardent followers. So far as I know, Davenport operated independently and tried to achieve success in the eyes of his peers through his writings. Perhaps in the academic struggle that was then taking place in American universities among competing world views and conceptions of the nature of economics, it was not possible for an independent writer to persuade the profession of the usefulness of his ideas. In any case, modern Austrians have made a serious mistake in relying on Fetter's discussion. They would be wise to look thoroughly at Davenport's works.

References

Bohm-Bawerk, Eugen, The Positive Theory of Capital, volume 2 of _Capital and Interest_, translated by George D. Huncke and Hans F. Sennholz, South Holland, Illinois: Libertarian Press, 1959.(originally published in 1899)

Bohm Bawerk, Eugen, "Macvane's Political Economy," *Quarterly Journal of Economics*, Vol. 4, April, 1990, p. 331-339.

Bohm-Bawerk, Eugen, "The Austrian Economists," Annals of the American Academy of Political and Social Science, January, 1891, reprinted in Shorter Classics of Eugen von Bohm Bawerk, South Holland, Ill.: 1962.

Bohm-Bawerk, Eugen, "The Ultimate Standard of Value," Annals of the American Academy of Political and Social Science, September, 1894a, in Shorter Classics of Eugen von Bohm Bawerk, South Holland, Ill.: 1962.

Bohm-Bawerk, Eugen, "One Word More on the Ultimate Standard of Value" Economic Journal, December, 1894b.

Bonar, James, The Austrian Economists and Their View on Value," Quarterly Journal of Economics, October, 1888.

Bonar, James, "The Positive Theory of Capital," Quarterly Journal of Economics, April 1889.

Clark, John Bates, book review of H. J. Davenport's Outlines of Economic Theory, Journal of Political Economy, June, 1897.

Clark, J. Maurice, "Davenport's Economics," Political Science Quarterly, June, 1914.

Davenport, Herbert J., "The Formula of Sacrifice," Journal of Political Economy, September, 1894.

Davenport, Herbert J., Outlines of Economic Theory, New York: Macmillan, 1896.

Davenport, Herbert J., Outlines of Elementary Economic Theory, 1898.

Davenport, Herbert J., "Proposed Modifications in Austrian Theory and Terminology." Quarterly Journal of Economics, May 1902.

Davenport, Herbert J., "Capital as a Competitive Concept," Journal of Political Economy, December, 1904.

Davenport, Herbert J., "Doctrinal Tendencies: Fetter, Flux, Seager and Carver," Yale Review, November, 1905.

Davenport, Herbert J., Value and Distribution, Chicago: University of Chicago Press, 1908.

Davenport, Herbert J., "Social Productivity Versus Private Acquisitions," Quarterly Journal of Economics, November, 1910.

Davenport, Herbert J., Economics of Enterprise, New York: Macmillan, 1914.

Dorfman, Joseph, "Herbert Joseph Davenport: Conflict of Loyalties," in Joseph Dorfman, The Economic Mind in American Civilization, Volume 3, pages 375-390, New York, Viking, 1949.

Ebeling, Richard M., "On the Theory of Costs," Austrian Economics Newsletter, Vol. 1, No. 1, Autumn, 1977, reprinted in Stephen Littlechild (ed.), Austrian Economics, Vol. 1, 2, and 3, Brookfield, Vermont: Edward Elgar Publishing Company, 1990.

Edgeworth, F. Y., "Mathematical Investigations in the Theory of Value and Prices," Connecticut Academy, 1892.

Elzas, B. D., "On the Austrian Notion of `Cost' in 1889," Journal of Economic Studies, V. 34, 1988.

Endres, A.M., "Carl Menger's Theory of Price Formation Reconsidered," History of Political Economy, Vol. 27, No. 2, 1995.

Endres, A. M., "Some Microfoundations of Austrian Economics: Bohm Bawerk's Version," The European Journal of the History of Economic Thought, Spring, 1996.

Fetter, Frank, "Interest Theories, Old and New,"American Economic Review, March, 1914a.

Fetter, Frank A., "Davenport's Competitive Economics," Journal of Political Economy, June, 1914b.

Fetter, Frank A., "An Appeal to 'the Sober Reader'," Journal of Political Economy, June, 1916.

Fetter, Frank, "Clark's Reformulation of the Capital Concept," in Jacob H. Hollander, ed., Economic Essays Contributed in Honor of John Bates Clark, New York: Macmillan, 1927,

reprinted in Fetter, Capital, Interest, and Rent, Kansas City: Sheed Andrews and McMeel, 1977, edited by Murray Rothbard.

Fetter, Frank A., Capital, Interest, and Rent, Kansas City: Sheed Andrews and McMeel, 1977, edited by Murray Rothbard.

Green, David I., "Marginal Utility and Value," Quarterly Journal of Economics, April, 1893.

Green, David I., "The Austrian Theory of Value," Annals of the American Academy of Political and Social Sciences, November, 1893.

Green, David I., "Pain-Cost and Opportunity-Cost," Quarterly Journal of Economics, pp. 218-229, 1894.

Gunning, J. Patrick, "Entrepreneurists and Firmists: Knight vs. the Modern Theory of the Firm," Journal of the History of Economic Thought, March, 1993.

Gunning, J. Patrick, "The Theory of Entrepreneurship in Austrian Economics," in Keizer, W., Tieben B. and R. Van Zijp (eds.), Austrians in Debate, London: Routledge, forthcoming 1997a.

Gunning, J. Patrick, "Ludwig von Mises's Transformation of the Austrian Theory of Value and Cost," History of Economics Review, Summer, 1997b. (forthcoming)

Gunning, J. Patrick, H. J. Davenport's Loan Fund Theory of Capital, manuscript, 1997c.

Haney, Lewis H., "The Social Point of View in Economics: I and II," Quarterly Journal of Economics, November, 1911, and February, 1912.

Hayek, Friedrich A. von (ed.), *Collectivist Economic Planning: Critical Studies on the Possibilities of Socialism*, London: Routledge & Sons, ltd., 1935.

Hayek, F. A., "Economics and Knowledge," Economica, February, 1937, reprinted in Individualism and Economic Order, Chicago: University of Chicago Press. 1948.

Kirzner, Israel, Competition and Entrepreneurship, Chicago: University of Chicago Press, 1973.

Kirzner, Israel, The Economic Point of View: An Essay in the History of Economic Thought, Kansas City: Sheed and Ward, 1975.

Kirzner, Israel, Perception, Opportunity, and Profit, Chicago: University of Chicago Press, 1979.

Kirzner, Israel, The Meaning of the Market Process: Essays in the Development of Modern Austrian Economics, London and New York: Routledge, 1992.

Knight, F. H., Risk, Uncertainty, and Profit, New York: Houghton Mifflin, 1921.

Knight, F. H., "Comment on Fetter" American Economic Review, September and March, 1927.

Lachmann, Ludwig M., "The Science of Human Action," 1951, reprinted in Lachmann's Capital, Expectations, and the Market Process, Kansas City: Sheed Andrews and McMeel, 1977.

Macvane, S, "Bohm Bawerk on Value and Wages," Quarterly Journal of Economics, October, 1890.

Macvane, S, "Marginal Utility and Value," Quarterly Journal of Economics, April, 1893.

Macvane, S, "The Austrian Theory of Value," Annals of the American Academy of Political and Social Science, November, 1893.

Marshall, Alfred, Principles of Economics, London: The Macmillan Company, 1890.

Marshall, Elements of the Economics of Industry, London, 1892.

Menger, Carl, Principles of Economics, Translated by James Dingwall and Bert Hoselitz, New York: New York University Press, 1981. (Originally published in German in 1871).

Mitchell, Wesley, Book review of H.J. Davenport's The Economics of Enterprise, in American Economic Review, September, 1914.

Newman, Philip C., The Development of Economic Thought, Englewood Cliffs, N.J., Prentice Hall, 1952.

O'Driscoll, Gerald P. "Frank A. Fetter and 'Austrian' Business Cycle Theory," History of Political Economy, Winter, 1980.

Pasour, E.C., "Cost and Choice -- Austrian an vs. Conventional Views," Journal of Libertarian Studies, 1977.

Patten, Simon, "Cost and Expense," Annals of the American Academy of Political and Social Science, May, 1893.

Robbins, Lionel, "Remarks Upon Certain Aspects of the Theory of Costs," Economic Journal, March 1934, reprinted in Buchanan, J.M. and G.F. Thirlby, L.S.E. Essays on Cost, New York University Press, 1981.

Streissler, Erich, "To What Extent Was the Austrian School Marginalist?" History of Political Economy, Fall, 1972.

Streissler, E. and W. Weber, "The Menger Tradition," in John R. Hicks and W. Weber (eds.), Carl Menger and the Austrian School of Economics, Oxford: Clarendon Press, 1973, Chapter 6 in Stephen Littlechild (ed.), Austrian Economics, Vol. 1, Brookfield, Vermont: Edward Elgar Publishing Company, 1990.

Taylor, W. G. Langworthy, "A New Presentation of Economic Theory," Journal of Political Economy, June, 1897.

Taylor, W. G. Langworthy The Credit System, New York: Macmillan, 1913.

Vaughn, Karen I., "Does It Matter That Costs are Subjective?," Southern Economic Journal, Vol. 46, No. 1 (January, 1980).

von Mises, Ludwig, Human Action: A Treatise on Economics, Chicago: Henry Regnery Company, 1966. (earlier version originally published in German in 1940 under the title Nationaloekonomie).

von Mises, Ludwig, Notes and Recollections, South Holland, Ill: Libertarian Press, 1978.

von Mises, Ludwig, Epistemological Problems of Economics, translated by George Reisman, New York: New York University Press, 1981. (originally published in German in 1933)

Wicksteed, Philip H., "The Scope and Method of Political Economy in the Light of the `Marginal' Theory of Value and Distribution," Economic Journal, March 1914.

Wicksteed, Philip D., The Common Sense of Political Economy, London: Land Humphries, 1933.(originally published in 1910)

Wieser, Friedrich A. von, “The Austrian School and the Theory of Value,” _Economic Journal_, 1891, 1: 108-21.

Wieser, Friedrich von, Natural Value, translated by A Malloch and edited by William Smart, New York: Kelley and Millman, 1956.(first published in German in 1888)

Wieser, Friedrich von, "The Theory of Value: A Reply to Professor Macvane," Annals of the American Academy of Political and Social Science, March, 1892.

Herbert J. Davenport' Transformation of the Austrian Theory of Value and Cost

BY
J. PATRICK GUNNING
NATIONAL CHUNG HSING UNIVERSITY, TAIWAN

January 17, 2009