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## THE ECONOMICS OF CARL MENGER

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FOR a long generation Carl Menger has been in Anglo-Saxon countries a famous but seldom read economist. Historians of economic thought always give to him at least honorable mention as the man who, with Jevons and Walras, re-discovered and popularized the theory of subjective value. But the barriers of inaccessibility and language have served effectively to hide all but the barest outlines of his work from the bulk of English-speaking students of economics. None of Menger's writings has been translated, and his *magnum opus*, *Grundsätze der Volkswirtschaftslehre* (1871), has long been out of print. Menger's fame, in fact, has been largely a reflection of the achievements of his foremost disciples, Wieser and Böhm-Bawerk. This is a serious injustice; in important respects his theoretical structure was superior to that of his followers. Accordingly the London School of Economics deserves especial gratitude for having removed the barrier of inaccessibility, although not that of language, by fittingly closing its valuable series of "Reprints of Scarce Tracts" with his collected works.<sup>1</sup>

Menger's writings fall within three rather clearly defined fields: economic theory, methodology, and currency. The present essay is concerned only with his economic theory, which, with the exception of the long article, "Zur Theorie des Kapitals" (1888, in Vol. III of the reprint), is presented in the *Grundsätze*.<sup>2</sup> Full bio-

<sup>1</sup> Vol. I (Reprint No. 17): *Grundsätze der Volkswirtschaftslehre* (1871); Vol. II (Reprint No. 18): *Untersuchungen über die Methode der Sozialwissenschaften* (1883); Vol. III (Reprint No. 19): *Kleinere Schriften zur Methode und Geschichte der Volkswirtschaftslehre*; Vol. IV (Reprint No. 20): *Schriften über Geldtheorie und Währungs politik*.

<sup>2</sup> The methodological writings are in Vols. II and III; chap. viii of the *Grundsätze* and Vol. IV are on currency. All page references in the present essay will be to the *Grundsätze* (Vol. I) unless otherwise noted.

graphical details of Menger's life and an excellent discussion of his intellectual milieu are already available, and need not be repeated here.<sup>3</sup>

It will be interesting to begin by comparing Menger with Jevons, who published his *Theory of Political Economy* in the same year (1871) in which the *Grundsätze* appeared. Several parallels can be drawn between the two men. Each was, in contrast with Walras, essentially non-mathematical in method; each wrote on certain parts of economic theory but intended eventually to write a comprehensive treatise which never appeared;<sup>4</sup> each was in sharp revolt against the classical political economy. But Menger's theory was greatly superior to that of Jevons: It was systematic and profound; it avoided the clumsy and unnecessary use of mathematics; and in particular it generalized value theory to include a sound general theory of distribution.

The two men differed greatly in their influence on contemporary economic thought. Jevons had virtually no direct followers.<sup>5</sup> A strongly entrenched classical school, his repellent mathematics,<sup>6</sup> and the lacunae in his theoretical structure explain in part the fact that no "Jevonian" school emerged.

Menger was more fortunate. In his steps followed a group of able economists who, adhering closely to his general approach and frequently accepting even details and terminology of the *Grund-*

<sup>3</sup> Consult F. A. von Hayek's Introduction to Vol. I for a general outline of Menger's life and work; his intellectual environment is finely treated by J. Schumpeter, "Carl Menger," *Zeitschrift für Volkswirtschaft und Politik* (N.F.), I (1921), 197-205.

<sup>4</sup> Jevon's fragmentary *Principles of Economics*, which was published posthumously (1905), is well known; Menger added *erster, allgemeiner Teil* to the title-page of his first edition, very much as Marshall did twenty years later. Menger projected three additional parts to deal, respectively, with distribution, money, and credit; production and commerce; and general economic policy. Cf. Introduction to second edition (1923), p. vi. This second, posthumous edition was edited by Karl Menger, his son. It will not be considered here; cf. F. X. Weisz, "Zur zweiten Auflage von Carl Mengers 'Grundsätzen,'" *Zeitschrift für Volkswirtschaft und Politik* (N.F.), IV (1924), 134-54.

<sup>5</sup> Wicksteed, the important exception, published his general, non-mathematical work, *The Common Sense of Political Economy*, only in 1910.

<sup>6</sup> Thus Cairnes referred to his "abstruse mathematical symbols" (*Leading Principles*, p. 21 and note).

*sätze*, developed into the so-called "Austrian" school. Wieser and Böhm-Bawerk were outstanding among the nineteenth-century followers, but there were many others—among them Sax, Komorzynski, Mataja, Gross, and Meyer. Menger's success is clear in the light of Jevons' failure. The former faced no established theoretical tradition—what little theoretical German economics there was at the time possessed a strong anticlassical bias; Menger's treatment was lucid, systematic, and comprehensive; and, to mention a factor of ambiguous importance, his was good economic theory.

It is convenient to treat Menger's theory under four heads: "The Theory of Subjective Value," "Productive Organization: The Allocation of Resources," "The Theory of Imputation," and "The Distributive Shares: Classical Theory."

#### THE THEORY OF SUBJECTIVE VALUE

A thing secures *Güterqualität* (the quality of being a good), begins Menger, from the simultaneous fulfilment of four conditions (p. 3): (1) There must be a human want. (2) The thing must possess such properties as will satisfy this want. (3) Man must recognize this want-satisfying power of the thing. (4) Man must have such disposal over the thing that it can be used to satisfy the want. Things which fulfil the first two conditions are "useful things" (*Nützlichkeiten*); those fulfilling all four requirements are "goods" (*Güter*). The absence or loss of any one of these four conditions is sufficient to entail loss of a thing's *Güterqualität*. The last two of Menger's conditions are merely formal; the economic significance of the others deserves elaboration.

Human wants need not be rational; cosmetics(!) equally with food possess *Güterqualität* (pp. 4-5)—although Menger is optimistic enough to believe that irrational wants become less important as civilization progresses. Similarly, if the belief that a thing possesses want-satisfying power is mistaken (e.g., quack medicines), that again does not affect its *Güterqualität*. And, finally, the word "thing" is purposely vague: Menger argues strenuously that useful human activities, as well as useful material goods, belong in the category of goods (pp. 5-7).

This emphasis upon non-material goods—which is properly extended to include such things as monopolies, good-will, and patents (pp. 6–7)—is a genuine though neglected contribution to economic thought. Classical theory restricted economic analysis primarily to material goods (e.g., “productive” vs. “unproductive” labor), and this practice served—and still serves—to obscure some of the most fundamental concepts of economics, such as income, production, and capital. Menger follows the classicists, however, in failing to distinguish between *goods* and *services from goods*, as we shall presently see.

Menger immediately forestalls an obvious question: Do productive resources, which cannot be consumed directly, lack *Güterqualität*? Clearly not, for, although they cannot satisfy wants directly, they can be transformed into want-satisfying goods, and indeed most of man’s economic activity is concerned with this transformation (pp. 8 ff.). Such productive resources are indeed goods; they are distinguished from directly consumable goods, “goods of first order,” by the appellative “goods of higher order.” If bread is a first-order good, flour, salt, fuel, and the baker’s services are second-order goods, wheat is a third-order good, etc.

Menger’s differentiation of productive resources from consumption goods solely on the basis of proximity to consumption led to a result important to economic theory. Why should not the same theory that is used to explain the value of consumption goods be applied to “unripened” consumption goods? Quite obviously it should be, and Menger’s application of his value theory to production goods led to a correct if not wholly adequate statement of the marginal productivity theory of distribution.

The classification of goods into ranks was in itself, however, of dubious value. The same good, say coal, might be used both as a good of second order (in domestic heating) and perhaps as a good of ninth order (in smelting ore) in even a simple economy. And to attempt to trace in detail the stages in the production of even a simple commodity—a common pin, for instance—in the highly complex modern economy would amount to nothing less than a detailed description of economic life and its history! The concept of ranks is too precise, in other words, either for our analytical

powers or for our analytical requirements. Menger himself makes no use of the concept of ranks other than to distinguish consumption goods from production goods; he says that the chief use of the concept is in providing an "insight into the causal relationship" between goods and want-satisfactions (p. 10).

One peculiarity of goods of higher order, Menger notes, is that they cannot produce goods of lower order without the co-operation of other, "complementary" goods of the same order (pp. 11 ff.).<sup>7</sup> It follows that, if the complementary goods of higher order are lacking,<sup>8</sup> the "good" in question cannot satisfy wants even indirectly, and is useless; it is no longer a good.

A second peculiarity of higher-order goods is the dependence of their own want-satisfying power on the want-satisfying power of their final, first-order products (pp. 17-21). This is the germ of the theory of distribution through "imputation"—i.e., the derivation of the value of productive agents from the value of their products.

It is now clear that the existence of unsatisfied human needs is the condition of each and every *Güterqualität*, and this substantiates the principle that goods lose their *Güterqualität* as soon as the needs whose satisfaction they previously served have disappeared. This is equally true whether the goods in question can be used directly in primary relationship to want-satisfaction or whether they secure their *Güterqualität* through a more or less mediate causal nexus leading to the satisfaction of human wants [p. 18].

The requirements for goods of higher order are conditioned by our requirements for goods of first order . . . [p. 35].

Human wants are thus the ultimate basis of all *Güterqualität*. Were people to lose their taste for tobacco, then cigars, cigarettes,

<sup>7</sup> Menger saw what on occasion some of our modern theorists have failed to see: that where there is only one productive factor and one product that factor must be economically identical with its product, for no change could have taken place in the factor in the absence of another factor. Where this heroic construction is assumed it is nonsense to speak of costs, returns, or distribution.

<sup>8</sup> The definition of complementary goods is extended (p. 14) beyond its original meaning to include all goods of higher orders needed to transform the higher good in question into a final product. This is done to avoid the situation where, for instance, all the necessary complementary goods of third order might produce a good of second order which, however, lacked the complementary goods of second order necessary to transform it into a final product.

and pipes, tobacco stocks, importers' technical services, factories and even tobacco plantations—all these would lose their *Güterqualität*.

The final peculiarity of goods of higher order to be noted at this point is the fact that their utilization always consumes time (pp. 21–26). Since, in the absence of complete knowledge and of complete control over nature, the future is not certain, the *anticipated* want which will be satisfied by a good of higher order at the end of its production process determines its *Güterqualität*. We may defer further consideration of higher-order goods to the section on Menger's theory of distribution.

So far Menger's theory has been presented only in its broad lines of qualitative causality; the quantitative aspects must now be sketched. Two preliminary concepts are of importance: (1) *Bedarf* (requirements), or the amount of each kind of good which an individual requires to satisfy all his wants within a given period of time (p. 34), and (2) supply, or the quantities of the various goods which are available to meet these needs during the same period of time (pp. 45 ff.). Menger's concept of *Bedarf* has no exact English equivalent. His definition and treatment suggest that the *Bedarf* of an individual is the quantity of goods necessary to bring about a complete satisfaction of that individual's needs (cf. pp. 34 and note, 38, 41).<sup>9</sup> He admits that human needs are indeed capable of indefinite development (*ins Unendliche entwicklungsfähig*), but this is a historical phenomenon; for sufficiently limited periods of time *Bedarf* is a fixed datum (p. 38).

An elaborate argument is presented (pp. 35–50) to prove that these two types of information, on *Bedarf* and on supplies, can legitimately be treated as known data in the analysis rather than analytical results (such as prices). This demonstration was highly essential, for the classical economists, whose analytical methods were even more advanced than those in contemporary German economics, did not assume productive resources to be given in amount.<sup>10</sup> Menger, on the other hand, clearly includes goods of

<sup>9</sup> *Bedarf* is therefore closely related to Walras' *utilité d'extension*; cf. *Éléments d'économie politique pure* (1926 ed.), 72 ff.

<sup>10</sup> As Professor F. H. Knight has pointed out: "The stationary state of these classical writers was the *naturally* static or economic condition, which is the goal

higher order, or resources, among his fixed stocks (pp. 45-51). He must be considered one of the first economists to introduce the indispensable methodological tool of "static" assumptions into economic analysis. His treatment is, to be sure, primitive and oversimplified in the light of present-day accomplishments, but at the time it was a distinct innovation. In this respect, moreover, he was more influential, although less rigorous, than Walras, and distinctly superior to Jevons.<sup>11</sup>

One particular merit of Menger's treatment is his emphasis on the time dimension of these quantities—i.e., the fact that our requirements for and supplies of goods must be stated in terms of quantities per unit of time. This important point is obscure in Jevons and it is customarily ignored in modern textbooks on economics.<sup>12</sup>

With these two sets of data, supplies and requirements (each per unit of time), it is now possible to face the basic economic question: How should the given quantities be distributed to secure the greatest possible satisfaction of needs (pp. 51 ff.)?<sup>13</sup> Requirements (*Bedarf*) and available stocks stand in one of three possible relationships to each other: either may be greater than the other, or they may be equal.

Requirements, first, may exceed available quantities—the relationship which is to be observed "with the vast majority of

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of progress . . . not a state made static by arbitrary abstraction as a methodological device" (see *Risk, Uncertainty, and Profit*, p. 143 n.). Cf. also the penetrating analysis of L. Robbins, "On a Certain Ambiguity in the Conception of Stationary Equilibrium," *Economic Journal*, XL (1930), 194-214.

<sup>11</sup> Jevons had but a suggestion (*Theory of Political Economy* [4th ed.], p. 267; Walras' genuine advance was obscured from the view of most economists by its mathematical garb (*op. cit.*, esp. pp. 175 ff.).

<sup>12</sup> In the numerous sections on dimensions of economic quantities which constitute the chief textual additions made in the second edition of the *Theory of Political Economy* (cf. 4th ed., esp. pp. 61 ff.), Jevons moved much closer to the conclusion that economic quantities must possess a time dimension. His treatment was naïve and unsatisfactory, however. Cf. P. H. Wicksteed, "On Certain Passages in Jevons' *Theory of Political Economy*," *Quarterly Journal of Economics*, III (1889), 293-314 (reprinted in *Common Sense of Political Economy* [1934], Vol. II).

<sup>13</sup> The present discussion will be limited to goods of first order.

goods." In this case the loss of a significant part of the stock will cause some known need to remain unsatisfied. Accordingly:

People will endeavor . . . to secure the greatest possible result by the intelligent application (*zweckmässige Verwendung*) of every given unit (*Teilquantität*) of the goods which stand in this quantitative relationship, and, similarly, to secure a given result with the least possible quantity of such goods . . . (pp. 52-53).<sup>14</sup>

The individual will therefore devote such goods only to his "more important wants." Goods in this relation—i.e., smaller in quantity than the requirements for them—are "economic goods"; they will be kept, conserved, and used only according to the principle of economic behavior just quoted. Costs of any sort are per se irrelevant to the question of whether a good is economic or non-economic (p. 61 n.).

The second possible relationship holds when available stocks exceed requirements (pp. 57 ff.). Under this circumstance there is no inducement to husband the goods in question, to conserve their useful properties, to consider the relative importance of the wants they can satisfy, or, in general, to treat such goods in an economic manner. They are, in short, "non-economic" goods.

Changing times or circumstances may turn "non-economic" goods into "economic" goods, or vice versa (pp. 60 ff.). Factors contributing to a change in the relationship of supplies to requirements include changes in population, changes in human wants, the discovery of new want-satisfying powers of goods, and, of course, the depletion of resources. But this is historical change, external to Menger's theoretical corpus, and need not be pursued. The third possible relationship between requirements and supplies, that of equality, is even less significant, and will be passed over.

We are now on the threshold of the quantitative determination of subjective value. One further preliminary step is necessary, the classification of wants according to their importance:

If we have indicated correctly the nature of the value of goods, so that it is established that in the last resort only the satisfaction of our wants has significance for us and that all goods clearly secure their value by a transfer

<sup>14</sup> For the translation of *Teilquantität* as "unit" see below, p. 241.

to them of this significance, then the *differences* in value of various goods, which we can observe in actual life, can be based only on the differences in the significance of those want-satisfactions which depend on disposal over these goods [p. 87].

Obviously our different classes of wants are of widely differing importances to us: food, clothing, and shelter are indispensable; other goods, such as tobacco and chessboards, serve only to add comfort or pleasure (pp. 88 ff.). And not only do our specific kinds of wants, and accordingly their satisfactions, differ in importance, but our satisfaction of a particular want will be more or less complete as the quantity of goods available to meet it is greater or smaller (p. 90). A little food preserves life, more food insures health,<sup>15</sup> and additional quantities bring amenities, but to a decreasing extent,<sup>16</sup> until a point of satiation is reached (p. 91).

Menger illustrates by an arithmetical example the differences in the importance of the satisfaction of various kinds of wants and the decrease in the importance of the satisfaction of each kind of want as the quantity of the good satisfying that want is increased (p. 93). This table is reproduced here in a slightly condensed form:

I	II	III	IV	...	X
10	9	8	7	...	1
9	8	7	...	...	0
8	7	...	1		
7	...	1	0		
...	1	0			
1	0				
0					

The columns I–X represent different kinds of wants, in the order of their importance; the numbers in any column represent successive want-satisfactions from unit increases of the stock of goods satisfying that want—in modern terms, the “marginal” utilities. Column I may represent food; Column IV, tobacco. Ten units of “food” represent the individual’s *Bedarf* for food.

<sup>15</sup> But this additional food will be of a different type. Menger is speaking of broad classes of wants, not of the wants for specific goods. This ambiguity is never cleared up, unfortunately.

<sup>16</sup> “. . . die darüber hinausgehende Befriedigung aber eine immer geringere Bedeutung hat” (p. 92).

Menger probably does not mean to say that the first unit of tobacco yields a satisfaction equal to that of the fourth unit of food, but only to indicate orders of importance; but unfortunately he is not precise as to the meaning of his magnitudes. He states that the "economizing" individual seeks to equalize all these margins in order to maximize his want-satisfaction: ". . . . The individual will endeavor . . . . to bring the satisfaction of his needs for tobacco and for means of sustenance into equilibrium" (p. 94). Indeed it is this ". . . . weighing of the different importances of wants, the choice between those which remain unsatisfied and those which, *according to the available means*, get satisfied, and the determination of the degree to which these latter wants get satisfied" that supplies the most consistent and influential motive in man's economic behavior (pp. 94-95 [my italics]).

This endeavor to maximize want-satisfaction by equating the "marginal" satisfactions of all wants can take place only through the allocation of income, and indeed Menger's theory of the distribution of "available means" seems to approach this.<sup>17</sup> Yet it is not clear that Menger sees the rôle of completely general purchasing power, for in the subsequent discussion he speaks of quantities of specific goods in relation to their limited possible uses—e.g., the farmer's corn may be used for food, seed, feeding cattle, etc. (pp. 95 ff.).

Elsewhere he notes that the ability to satisfy more than one want (or column) is a power possessed by "most goods" (p. 112 n.). He does not distinguish satisfactorily between goods which satisfy the one want and those which can satisfy qualitatively different wants.<sup>18</sup> But Menger's solution is, for the latter case, clear and correct:

If a good is able to satisfy different types of wants, each of which has decreasing significance with the degree of completeness with which it has

<sup>17</sup> If the allocation of income is intended, then not marginal utilities but marginal utilities divided by prices, or in terms of units of equal value, are equated, of course. But we must not expect such refinement of statement from Menger.

<sup>18</sup> Menger does not seem to realize the fundamental difficulties involved in making this distinction; difficulties which have manifested themselves so successfully in preventing the development of a satisfactory definition of a commodity. But although the basic problem is still unsolved (and probably will remain so), Menger's development is crude in comparison with modern statements.

already been satisfied, the economic man will direct the quantity at his disposal first to the satisfaction of the most important wants regardless of what type they may be, and the remainder will be devoted to those concrete want-satisfactions which are next in importance, and so on with the filling of less important wants. This practice has the result that the most important of all those concrete wants which are not satisfied are of the same significance for all types of wants, and accordingly all concrete wants are satisfied to an equal level of importance [p. 98 n.].

Yet this is not a complete solution, since there are an infinite number of needs which any particular good cannot satisfy, and it is strange that one of the most important steps in the entire argument is found only in a footnote. Menger's failure to develop generally the method by which the individual maximizes his want-satisfaction is an outstanding weakness in his theory of value.

The valuation of a stock of goods follows directly from the principles of economic behavior and of variation in the qualitative and quantitative importance of wants. Assume that the individual has five units of the good capable of satisfying wants I and II. He will apply this stock to the three most important stages of I, with satisfactions 10, 9, and 8, respectively, and to the two most important stages of want II, with satisfactions 9 and 8, respectively. The last unit, the "marginal" application, will satisfy a want which has an importance of 8, and since by definition all units are identical, all will be valued at 8. We have then the principle of value: ". . . . The value of a unit of the available stock of a good is for every individual equal to the significance of the least important want-satisfaction which is brought about by a unit of the total quantity of the good" (p. 99 [italized by Menger]; also pp. 107-8, etc.). Wants—equivalent to utility in Jevons—and supply are of correlative importance, so that although our need for air is great (represented by, say, Col. I), the supply is even greater and air is worthless. Diamonds are less needed (here perhaps Col. VIII), but the supply is so small that their value is high. The "paradox" of utility and value of the classicists is solved.

Menger elaborates this principle of value at considerable length by the use of examples (pp. 100-107), but only two aspects of the elaboration require attention here. He consistently adheres to a

discussion in terms of a period of time, and this means in effect an individual's budget policy for that period. This mode of analysis properly avoids the unrealistic, misleading "dinner-table" examples of diminishing utility used by Jevons and, for that matter, most modern texts. A true understanding of diminishing utility cannot be secured by plying a person with successive oranges—"the desire of food is limited in every man by the narrow capacity of the human stomach." The important fact that every orange is the "marginal" orange is better shown by asking the same person to determine what portion of a limited budget for, say, a six-week camping trip would be devoted to oranges.

Second, there is little doubt but that Menger is discussing only relative utilities; the numerical examples are illustrative only of ordinal, not cardinal, relationships. These numbers serve to express "not the *absolute*, but rather the *relative* magnitudes of the significance of the want-satisfactions in question" (p. 163 n. [his italics]; cf. also pp. 92-93, 100-107). In this respect Menger's formulation of the theory of subjective value is a good deal closer to the modern tendency in the treatment of utility than are the expositions of Jevons and Walras. Here it should also be mentioned that although Menger is a thoroughgoing hedonist, he does not follow the later utilitarian practice of comparing the utilities of different individuals.<sup>19</sup> He explicitly denies the validity of such concepts as the "average man" and "average requirement" (p. 110 n.). It is a source of regret that this insight—which was shared by Jevons—was lost to his less gifted disciples. Böhm-Bawerk shamelessly compares the "utilities" of rich and poor,<sup>20</sup> and the purpose of Wieser's metaphysical concept of "natural value" is to overcome the nonexistent difficulty for the marginal utility theory of prices that the utility of a good varies between rich and poor individuals although the price is the same to all.<sup>21</sup>

The interesting question of the right to attribute a "marginal"

<sup>19</sup> There are minor lapses from this position in the later chapters on exchange and price, but they are infrequent and never affect the basic argument (cf. pp. 162 ff.).

<sup>20</sup> "Grundzüge der Theorie des wirtschaftlichen Güterwerts," *Conrad's Jahrbücher* (1886), *London School Reprint No. 11*, p. 118.

<sup>21</sup> *Natural Value* (1888), Book II, *passim*.

or "incremental" utility theory of value to Menger may be considered briefly. His analysis is always in terms of the *Teilquantität*—literally the fraction or portion. Yet at numerous points the word is qualified: "practically significant portion"; "portion which is just observable."<sup>22</sup> It seems clear that Menger is thinking in terms of small, finite quantitative changes, and not of infinitesimals. He, unlike his co-discoverers of the utility principle, Walras and Jevons, probably had no mathematical training, and would therefore use such a common-sense approach rather than the convenient analytical concepts of continuity and derivatives. The concept of a small finite change is, of course, more realistic. In a mathematical treatment it yields a slightly indeterminate solution: the value found by withdrawal of a unit is larger than the value found by addition of a unit. But the realistic mathematician has the same problem if he postulates a limited power of discrimination on the part of the consumer, as with Edgeworth's "minimum sensible."<sup>23</sup> Accordingly, Menger seems clearly to have formulated a "marginal" utility theory (although, as with Jevons, Menger devotes little attention to total utility).

The fundamental principles of Menger's theory of value have been presented in considerable detail, because it is on these important fundamentals that it is so strong. We must be content merely to suggest certain points which are developed in the later chapters on exchange and price. There is a good though simplified development of exchange equilibrium: the individual will equate the marginal utilities of different commodities in the special case of equal prices (esp. p. 168).<sup>24</sup> An anticipation of Edgeworth's contract curve (p. 178), a good statement of the principle of monopoly price (pp. 198 ff.), a reference to discriminating monopolies (pp. 196-97), a discussion of demand elasticity (p. 197 n.), are points which must be at least mentioned. In general it may be said that the analysis of demand is excellent, the analysis of supply factors distinctly less satisfactory.

<sup>22</sup> Thus, pp. 52, 77 (twice), 83, 102, 103, etc.

<sup>23</sup> Cf. the remarks in *Mathematical Psychics*, London School Reprint No. 10, pp. 7, 60, 99-100.

<sup>24</sup> Menger did not see that the units of all commodities could be so defined that they have equal prices.

PRODUCTIVE ORGANIZATION: THE ALLOCATION  
OF RESOURCES

Menger lays the groundwork for a correct theory of productive organization—i.e., for the determination of the allocation of resources. The final development, however, the theory of alternative cost, is left for Wieser to formulate.<sup>25</sup> This great hiatus in Menger's theoretical system is very hard to explain, especially since the correct allocation of resources is suggested in the footnote which has already been quoted in connection with his value theory (see above, pp. 238 f.). There, it will be recalled, Menger suggests that the most economic utilization of a good which satisfies several wants is to equalize its "marginal" significances for all wants. This pregnant suggestion, which contains the heart at once of the alternative-cost theory of value and of distribution theory, is never elaborated, nor is it applied directly to the problem of resource allocation.

Menger's preoccupation with directly consumable goods probably plays a part in the fundamental defect in his theory, the neglect of costs, but a more important explanation lies in his failure to realize the continuity of production—i.e., to realize that the price of a good must be sufficient to repay its costs (which are the products its resources could produce elsewhere) if the industry is to hold the productive resources used in it. This failure appears most clearly in his criticism of the cost theories of value (esp. pp. 119-22). As Menger says, historical costs are irrelevant to value; a diamond is equally valuable whether it has been found or is the product "of a thousand days of labor." And it is true that experience also teaches that the value of the productive factors necessary to the reproduction of many goods [e.g., clothing which is no longer in fashion, obsolete machines, etc.] is much greater than the value of their product, and in many other cases their value is less than that of their product [p. 121].

But it is a *non sequitur* to argue from this, as Menger unfortunately does, that costs cannot influence value (pp. 119 ff.). He fails to consider the fact that although costs never have a direct

<sup>25</sup> Wieser's first publication, *Über den Ursprung und die Hauptgesetze des wirtschaftlichen Wertes* (1884), pp. 146-70, gives the essentials of the alternative cost theory. Wieser himself, however, never applied the theory correctly to the problem of distribution.

effect on value, yet they are—"in the long run"—of at least co-ordinate importance in its determination, and in the limiting case of constant costs they are completely dominant. Only for very short periods of time is the supply curve of a commodity, assuming it to be perishable, so inelastic in comparison with its demand curve that the former may be ignored in price determination. And supply curves become more elastic as the time available for readjustments of scale of output increase, because resources become more mobile as between industries, and the influence of supply on price first becomes equal to and then typically exceeds that of demand. Under certain assumptions such as atomistic competition, non-specialization of resources, and unlimited time for full adjustment of the productive organization, constant costs tend to prevail and, in so far as that condition is approximated, demand determines only the quantity of a commodity sold, not its price. Menger's theory is therefore applicable only to very short-run "market" prices, and his failure to recognize the increasing mobility of resources through time vitiates, accordingly, his refutation of cost theories of value. This is also true of his criticism of classical theories of rent, wages, and interest (pp. 143-52), but this aspect may be deferred to a later point.

Menger does, however, make one specific contribution to production theory, a contribution the importance of which literally cannot be exaggerated. That contribution consists in the realization that the proportions in which productive agents may be combined to secure the same product are not fixed—the law of "proportionality" or "substitution":

Now it is quite true that we have disposal over quantities of goods of lower order only by means of *complementary* quantities of goods of higher order, but it is equally certain that not only fixed quantities of the individual goods of higher order can be brought together in production, somewhat in the manner in which this is observed in chemical compounds. . . . Rather we are taught by the most general experience that a definite quantity of any good of lower order can be secured from goods of higher order which stand in very different quantitative relationships to each other . . . [p. 139, also p. 140].

This formulation of the principle of variation of proportions as a *general* rule governing *all* resources is one of Menger's greatest

achievements, one which he is not required to share with either Jevons or Walras.<sup>26</sup> Classical theory recognized, of course, the possibility of varying the amount of capital-and-labor which could be applied to a given piece of land, and this was basic to the Ricardian theory of rent. But the proportion between labor and capital was generally assumed to be fixed; certainly variations in this proportion played no part in accepted classical theory.

The significance of the principle of variation of proportions is apparent. It leads directly to the marginal productivity theory of distribution (see next section). Until the principle of proportionality was fully developed, furthermore, no satisfactory solution of the problem of resource allocation was possible. Finally, as long as discussion ran in terms of fixed proportions between productive agents (or the question was ignored), the individual firm could not be used for purposes of analysis. A firm would require all factors in fixed relation to output; only socially—i.e., by general equilibrium analysis—would it be possible to fix the values of individual agents. It was a genuine retardation of economic advance that Wieser and Böhm-Bawerk (the latter in an incredibly crude manner) returned to the assumption of fixed-coefficients.

Quite surprisingly, Menger fails even to mention explicitly the technical principle of diminishing returns from an increasing proportion of any agent in a combination, and, accordingly, to realize its importance for his theory of distribution. The theory of marginal productivity leads to absurd results if any factor is assumed to be subject to increasing or even constant returns. But such an assumption is itself much more absurd, for no problem of resource allocation would arise. Nevertheless, opponents of the marginal productivity theory (e.g., Hobson) have occasionally used examples of increasing returns in “refutation.”

One final point of excellence in Menger’s brief treatment of production deserves notice: the absence of the classicists’ “holy

<sup>26</sup> Walras recognized the principle as early as 1876 (*Théorie mathématique de la richesse sociale* [1883], pp. 65–66), but he did not add the marginal productivity theory to his original fixed-coefficients approach until, I believe, the third edition of the *Eléments* (1896).

trinity" of land, labor, and capital. Productive factors are simply goods of higher order; the services of labor, land, and capital goods are on the same footing (p. 139). In Menger's treatment, in fact, specific productive agents are not grouped into arbitrary categories which lack economic significance. As a result, his theory of imputation, now to be considered, gains a symmetry difficult to secure so long as the classical trichotomy ruled economic discussion.

#### THE THEORY OF IMPUTATION

The greatest contribution of the theory of subjective value to theoretical economic analysis lies in the development of a sound theory of distribution—i.e., the view of distribution as the allocation of the total product among the resources which combine to produce it, through value imputation. Prior to Menger no satisfactory theory of distribution had emerged. The classical analysis was one of the division of income between social classes; Smith and his followers never confronted the problem of how a given product may be imputed to the resources which co-operate in its production or considered distribution as a value problem. Menger was the first economist to raise this question, and, moreover, to suggest the proper manner of answering it.

The outlines of the theory of imputation (*Zurechnung*)<sup>27</sup>—i.e., the valuation of productive goods on the basis of their contribution to the value of their products—have already been indicated.<sup>28</sup> Productive goods—goods of higher order—secure value only because they can satisfy wants indirectly, by producing consumption goods (pp. 67–70, 123–26, etc.). This leads to the general theorem of imputation: “. . . The value of goods of higher order is always and without exception determined by the anticipated value of the goods of lower order in whose production they serve” (p. 124). The element of anticipation arises from the fact, previously noted, that production requires time.

The theory of the valuation of individual goods of higher order

<sup>27</sup> The word *Zurechnung*, as well as the word “margin” (*Grenze*), is due to Wieser.

<sup>28</sup> *Supra*, pp. 232 ff.

then follows from the theories of imputation and the theory of variation of proportions:

. . . . The value [of a quantity of a good of higher order] is equal to the difference between the significance of that want-satisfaction which would result if we had disposal over the quantity of the good of higher order whose value is in question and the significance, in the contrary case, of that satisfaction which would follow from the most economic application of the totality of goods of higher order in our possession [i.e., the remaining resources of this and other kinds] [p. 142].

The context (esp. pp. 139-40) makes it fairly clear (though not so clear as could be desired) that Menger is here, as elsewhere, speaking of the effect on the total product of the withdrawal of a *Teilquantität*—a unit—of a resource. This marginal product fixes the value of the resource.

Two cases are distinguished. When the withdrawal of one unit forces co-operating agents to seek employment in less profitable lines—the case of fixed proportions—the value of the variable factor equals the total loss of product minus the product secured by the complementary factors in other industries. But more commonly the proportions in which the factors may combine are variable, and then the withdrawal of one unit of one agent is accompanied by a rearrangement of the remaining factors,<sup>29</sup> and the diminution of quantity or quality of the product determines the value of the unit which has been withdrawn.

As far as this theory goes—and it is unquestionably superior to any preceding explanation of the determination of the value of productive agents, with the possible exception of that of von Thünen<sup>30</sup>—it is essentially correct. The only real criticism is to be leveled at its inadequacy: Menger has failed to develop the indispensable postulate of diminishing returns; and it is not clearly brought out that the units withdrawn must be small; and the

<sup>29</sup> This necessary element of rearrangement is strongly implied (esp. p. 140) but not separately considered.

<sup>30</sup> Menger appears not to have known of von Thünen, but his knowledge of the literature was great. The *Grundsätze* cites over one hundred and fifty economists, including apparently all the important names in the science down to his time except von Thünen, Gossen, and Cournot.

question whether this method of valuation of agents exactly exhausts the total product is not raised.

One general weakness in Menger's exposition which clouds his value theory but is particularly deplorable in his distribution theory is the failure to differentiate between goods and their services. The value of a good, whether used in production or consumption, is less than the aggregate value of its services during its "lifetime" if this is of appreciable duration. Nowhere does Menger clearly recognize this fact; its incidence on his theory of capital will be seen to be particularly heavy.

#### THE DISTRIBUTIVE SHARES: CLASSICAL THEORY

In a noteworthy section entitled, "On the Value of Land and Capital Uses and of Land Services in Particular" (pp. 142-52), Menger offers a trenchant criticism of the classical division of the "factors" of production. Ricardo had recognized (however rightly) that the value of land was not due to the labor expended upon it, and to reconcile this fact with his labor theory of value he established land as a separate category of goods. Menger's comment is brilliant but inconclusive:

The methodological misconception which lies in this procedure is easily perceived. That a large and important group of phenomena cannot be reconciled with the general laws of a science which concerns itself with these phenomena, is clear proof of the need for reform of that science. It is not, however, a ground for the separation of one group of phenomena from the remaining objects of observation which are completely similar in their general nature—which would justify the most dubious methodological expedients—and for erecting special highest principles for each of the two groups [pp. 144-45].

Menger's criticism is valid, but he fails to establish the fundamental economic identity of land and other forms of capital on which the criticism must rest. The recognition of this dualism in the classical theory of value had led some economists (Canard, Carey, Bastiat, Wirth, and Rösler are cited) to attempt to trace land values back to labor expenditures. Menger refutes this argument quite effectively in an emphatic statement that historical costs are irrelevant to present value (p. 145).

Ricardian rent theory is explicitly but inadequately contested as a special case of classical distribution theory. Menger fails to see that "the different qualities and locations of ground-plots" are not an essential feature of the classical doctrine; rent may equally well be measured from the intensive margin. As a consequence it is wrong to say that, "if all plots of ground were of equal quality and of equally favorable location, according to Ricardo they could not yield any rent . . . ." (p. 146). One must regret his too ready concessions that land is usually available only in a definite quantity, "not easily increased," and that immobility of land has the economic significance generally imputed to it. Under Menger's implicit static assumptions, capital and labor are also fixed in quantity; historically all three "factors" have experienced enormous increases. Immobility, again, is a technical attribute; the mobility of land as between different uses is much more important from the viewpoint of price theory (which, indeed, usually abstracts from transportation costs) than is spatial immobility.

Menger considers observable divergences of actual wages from those necessary to maintain a laborer to be a sufficient basis for a categorical denial of the subsistence theory of wages, and he suggests that wages depend, in fact, only on the value of the product of labor (pp. 150-51). This criticism of classical doctrine is also inconclusive, for, to the extent that wages govern population, the supply of labor may conceptually be so regulated that wages remain at a subsistence level. But again, as in the case of rent, he properly believes wages to be explicable by general value theory.

The greatest hiatus in Menger's system of distribution is unquestionably the virtual absence of any theory of capital.<sup>31</sup> Here the failure to distinguish between goods and services from goods is a fundamental weakness. Some beginning is made: It is asserted both that increases in capital can take place only through extensions of the (undefined) period of production (p. 127) and that all such extensions increase the productivity of capital (p.

<sup>31</sup> Menger denies the validity of the abstinence theory of interest on his usual grounds for dismissing subjective costs—i.e., capital value frequently appears without any self-denial on the part of the capitalist, as in the pre-emption of natural resources (p. 133 n.).

136 n.). Menger thus sketches out what Böhm-Bawerk later developed.

Menger finds two limitations to increasing produce by extending the period of production: (1) the necessity for maintaining life (in a broad sense) in the immediate future and (2) an irrational preference for present over future satisfactions (pp. 126-28). This second factor, it may be noted, was deleted by Menger from the second edition, lest it be construed as supporting Böhm-Bawerk's theory of interest.<sup>32</sup>

Finally a vague and unsatisfactory definition of capital is presented:

. . . . The possibility of participating in the economic advantages which are bound up with production by goods of higher order . . . is dependent for every individual on his disposal in the present over quantities of goods of higher order for the coming period of time, or, in other words, on possessing *capital* [p. 130, also pp. 127-33].

Capital, then, is defined as goods of higher order kept in possession through a production period. This is clearly an inadequate definition, and provides no basis for a theory of interest, although such capital services (*Capitalnutzungen*) must, as Menger says, be compensated (pp. 133-36).

Other than the *Grundsätze*, Menger's only work in economic theory proper is the article already mentioned, "A Contribution to the Theory of Capital," which appeared in *Conrad's Jahrbücher* in 1888.<sup>33</sup> Here again no positive theory is presented, but the essay does contain two important principles. There is, first, an acute criticism of the classical emphasis on the technical, in contrast with the economic, character of capital. His comments on the validity of the practice of considering land and labor as "original" factors, capital as a secondary or derivative factor, really leave very little to be said on this subject.

The second theme of the article, which is in some respects even more important, is the necessity for conducting capital analysis

<sup>32</sup> Cf. Introduction to second ed., p. xiv.

<sup>33</sup> Reprinted in Vol. III of the *Collected Works*, pp. 133-83.

in the monetary terms in which entrepreneurs deal with capital problems:

The real concept of capital includes the productive property, whatever technical nature it may have, so far as its money value [*Geldwert*] is the subject of our economic calculation, that is, if it appears in our accounting as a productive sum of money.<sup>34</sup>

These are profound truths; we can only lament that Menger does not build on them.

#### CONCLUSION

The foregoing condensation of Menger's economic theory need not be summarized, yet a word may be added with respect to the general impression left by the *Grundsätze*. Its caution—almost clairvoyant—in the development of basic economic concepts, the beautifully logical symmetry of its structure, its critical attitude toward received doctrine—these are impressions which can hardly fail to be left by a reading of the text. Certainly the most antagonistic cannot deny Menger a prominent place in the hall of economic fame, and the more enthusiastic, of whom the writer is one, will feel little hesitancy in acclaiming the *Grundsätze* as a treatise which is in fundamental respects unexcelled by any other between the *Wealth of Nations* and Marshall's *Principles*.

<sup>34</sup> *Ibid.*, p. 174.