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# SIMON N. PATTEN'S CONTRIBUTIONS TO ECONOMICS

*E. K. Hunt*

Simon N. Patten enjoyed a position of great eminence within the economics profession around the turn of the twentieth century but unfortunately has descended to a position of virtually complete obscurity today. The principal reason is the difficulty in extricating his analytical achievements in economic theory from the context of a vague and somewhat unrealistic evolutionary theory. This article is an attempt to make this separation and to evaluate the extent to which his contributions to economic theory were weakened or confused by his efforts to place them within the context of his rather peculiar theory of social evolution.

## THEORY OF SOCIAL EVOLUTION

Patten believed that the American economy of the late nineteenth century was evolving from a "pain economy" based upon scarcity to a "pleasure economy" based on abundance. In the pain economy evolutionary progress was based upon rivalry and competition and was biological in nature. In the pleasure economy evolution was to be social rather than biological and cooperation rather than rivalry was to be the vehicle of evolutionary progress.<sup>1</sup> The social conflicts which Patten saw in late nineteenth century American capitalism he attributed to the remaining vestiges of the pain economy. All of the

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social institutions in a pain economy had as their basis the desire to find security and to avoid the pains associated with the uncertainties and the fear of enemies.<sup>2</sup> At this stage of social evolution, nature had produced certain “fundamental types” of men “that . . . [were] found in every age and nation.”<sup>3</sup> These “fundamental types” were distinguished by certain common “psychic traits.” Patten believed that a classification of men according to common psychic traits was historically more meaningful than class distinctions based on social or economic relationships.<sup>4</sup>

The first fundamental type Patten called “clingers.” Clingers evolved in all pain economies and were a slavish class. The fear of and aversion to uncertainty and pain caused them to develop a mentality which submitted to any sort of oppression and exploitation, and to “become attached to their conquerors, and accept the laws and religion imposed upon them.”<sup>5</sup> This was a class of hero worshippers whose insecurity caused them to cling tenaciously to whatever they had, rather than follow a more rational (in Patten’s view) utilitarian philosophy.

A second psychic type, called the “sensualists,” was also a product of the pain economy. They had “strong appetites” and aggressively pursued any activities that tended to increase the supply of goods which gratified those strong appetites. They devoured these goods with “gluttonous pleasure” until they were completely satiated. In earlier times the members of this vigorous and aggressive class were warriors and conquerors. They were the “tribute-takers” who took the tributes of the clingers. In industrial countries they were the “risk-takers and adventurers” – the entrepreneurs.

However, as the increasing productive capacity of the industrial economy created the foundations for an economy of abundance – the pleasure economy – a third psychic type appeared. Patten called these new men “stalwarts.” These men had “weak appetites” which were characterized by widely developed tastes. They were interested in balance and moderation in consumption and saved a large part of their current incomes.<sup>6</sup>

During the first stages of the economy of abundance only a small percentage of capitalists – whom Patten called “socialized capitalists” – were stalwarts. However, these socialized capitalists would create social conditions within which all capitalists and all workers would become stalwarts. The process of social evolution would eventually eliminate workers who were clingers<sup>7</sup> as well as the sensualist capitalists.<sup>8</sup>

The stalwart workers and capitalists of the coming pleasure economy would experience little or no conflict. Poverty would be minimized and the distribution of wealth and income would be as

egalitarian as productive efficiency permitted. Workers, having developed a higher mentality and more cosmopolitan tastes, would become savers and supplement their incomes with interest and dividends.<sup>9</sup> The capitalists, having lost their older, aggressive instincts which originated in the pain economy would become "socialized" and institute profit-sharing schemes which would make the interests of the laborers identical to those of the capitalist.<sup>10</sup>

Patten argued that social evolution had brought the American economy to the threshold of a new era of harmony and abundance. Evidence that the conditions of economic prosperity at the turn of the century were socializing capitalists could be gotten from the fact that "hospitals . . . [were] established, schools . . . [were] made free, colleges . . . [were] endowed, museums, libraries, and art galleries . . . [received] liberal support, church funds . . . [grew] and missions . . . [were] formed at home and abroad."<sup>11</sup>

The creation of the new society would be complete when the "strong appetites" of the anti-social capitalists and workers were transformed into "weak appetites" and social evolution eliminated those who could not make this transformation.

## CONSUMPTION THEORY

Within the context of this general evolutionary scheme Patten attempted to construct theories of consumption behavior, production and distribution all based upon the marginal utility principle. He began his analysis with the assumption that total utility for any individual was a function of all commodities which he consumed, that is

$$U_1 = f_1 (A, B, \dots N),$$

where " $U_1$ " is the utility for individual "1," and "A" through "N" are the commodities. The second assumption was that, given constant quantities of goods "B" through "N," as the quantity of "A" consumed by individual "1" increased, the marginal utility of "A" decreased, that is

$$\frac{\partial U}{\partial A} > 0 \text{ and } \frac{\partial^2 U}{\partial A^2} < 0.$$

With the above two assumptions, Patten arrived at his "laws of subjective values."

The first and primary law of subjective value is that value depends on the final degree of utility. The second law is that the value of the marginal increments of all commodities entering into the consumption of a person tends to be equal. . . . The third law is that the value of the marginal increment of consumption depends on the variety of consumption.<sup>13</sup>

The first of these laws showed Patten's persistent tendency to confuse the word value, sometimes using it to denote price, as in this case, and sometimes using it to denote utility, as in the second law. The second law because of its unusual form led Patten to confuse an increase in utility along a given utility function with an increase in utility resulting from a shift in the utility function. The reasoning behind the second law could be summarized as follows:

$$U = f(A, B, \dots N),$$

where  $U$  is utility and "A" through "N" are commodities; and

$$X = A + B + C + \dots N,$$

where "X" is some constant measure of the total physical volume of commodities available for consumption. Commodities "A" through "N" are made additive by redefining the physical units of measurement to take account of price differences. Thus, if "a" is the physical unit to which price " $P_a$ " refers, then  $A$ , the physical unit used in Patten's aggregation, would be given by the formula

$$A = \frac{P_a}{P_x} a$$

where  $P_x$  is the price of good "X" which is the numeraire of Patten's aggregate. But since

$$X = \frac{P_a}{P_x} a$$

gives a value equivalence between "a" and one unit of "X," then  $A = X$  and all of the units in Patten's aggregation are value equivalents.

Given this constraint, the maximum utility could be derived as follows, where  $\theta$  is the Lagrangian multiplier:

$$U = f(A, B, \dots N) + \theta [X - (A + B + \dots N)]$$

Then differentiating and setting the partial derivatives equal to zero we get:

$$\frac{\partial U}{\partial A} = f_A(A, B, \dots N) = 0$$

$$\frac{\partial U}{\partial B} = f_B(A, B, \dots N) = 0$$

.....

$$\frac{\partial U}{\partial N} = f_N(A, B, \dots N) = 0$$

Therefore, given a total physical quantity of goods, the condition that total utility be maximized depended on the goods being present in such proportions that the marginal utility derived from any good equaled the marginal utility derived from any other good and all marginal utilities equaled “ $\theta$ .” Again, the units were not the referents of the various prices but were value equivalent units.

Thus, “ $\theta$ ” was what Patten called the “value of the margin of consumption,” and in the second law of value he asserted that it would tend to be equal for all commodities. This is, of course, the equivalent of the more usual formulation of the condition for utility maximization, *viz.*,

$$\frac{MU_a}{P_a} = \frac{MU_b}{P_b} \quad 14$$

The third law of value stated that the “value of the marginal increment of consumption . . . [depended] on the variety of consumption.”<sup>15</sup> It would be difficult to overemphasize the importance which Patten placed on this law. In the introduction of the *Premises of Political Economy* he stated that the real cause of all social distress could be found in faulty consumption habits.<sup>16</sup>

The “clingers” and the “sensualists,” both of whom were products of the pain economy, had what Patten called “strong appetites.” The “stalwarts,” who were higher on the evolutionary scale, had “weak appetites.” Elimination of strong appetites and their replacement by weak appetites would lead to a wider variety of consumption and raise the value of the margin of consumption. “*The essence of social progress,*” in Patten’s opinion, lay “*not in the increase of material wealth but in a rise of the margin of consumption.*”<sup>17</sup>

This “rise in the margin of consumption” was a direct result of evolutionary progress. As individuals with weak appetites displaced those with strong appetites the wider variety of commodities consumed would be a necessary condition for “a high standard of life.”<sup>18</sup> Whereas, those with strong appetites gorged themselves on a few “inharmonious” commodities and experienced a rapidly declining marginal utility for those commodities until the point of satiety was reached, those with weak appetites could, with a smaller physical quantity of “harmonious” commodities, or commodities which were complementary, obtain a much larger total utility at a lower cost.

The utility of a commodity depends on the group of commodities with which it is consumed. The consumption of some articles is harmonious, and hence the sum of their utilities when they are consumed together is greater than the sum would be if they were consumed apart. . . . On the other hand, many commodities are inharmonious. They cannot be consumed together without losing a part, at least, of the sum of utilities which their separate consumption would give.<sup>19</sup>

Thus, the third law of value pertained to upward shifts in an individual's utility function caused by the change from strong to weak appetites brought about through evolutionary progress. Patten confused these shifts with movements along a given utility function. He believed that although all individuals attempted to equate the marginal utility of each commodity with the marginal increment of consumption, persons with strong appetites failed because of ignorance to do this. It was difficult to induce persons with strong appetites to consume a harmonious group of commodities.<sup>20</sup> This was because they were dominated by the “survival of feelings from primitive conditions.”<sup>21</sup> Although the total utility of the harmonious commodity group would be higher, persons with strong appetites tended to consider any particular good within this harmonious complement by itself rather than considering the total effect on the utility of the entire complement if the good were consumed. As a consequence they imputed much too little utility to harmonious goods and thus chose inharmonious goods which seemed to have higher marginal utilities when considered by themselves. An example of this type of consumer ignorance caused by strong appetites, which pervaded Patten's writings, was the use of liquor and tobacco; the great pleasure which these items afforded by themselves caused people to consume them despite the fact that they were, Patten believed, completely inharmonious with larger complements of goods.<sup>22</sup>

The change from strong to weak appetites did not, as Patten supposed, increase utility by increasing one's tendency to equate the marginal utilities of the various commodities consumed. Rather, it resulted in an upward shift of the margin of consumption due to an upward shift of the entire utility function.

Thus increases in "the standard of life" were dependent on the "internal evolutionary struggle" in which the unrestrained, strong appetites of the egoist were replaced by the harmonious, weak appetites of the socialized person. Eventually everyone would have to develop weak appetites and harmonious consumption or be eliminated.<sup>23</sup> "The primary law of social progress" upon which all progress depended was that "society progresses from a simple, costly and inharmonious consumption to a varied, cheap and harmonious consumption."<sup>24</sup>

## PRODUCTION THEORY

The basic difficulty which Patten encountered in his theory of production was probably caused by his unorthodox definition of value equivalent physical units of each commodity combined with the fact that his theory furnished no explanation of price levels but took them as given and fixed. This led him to speak as though there were some inherent quality within each good which permitted comparison and aggregation without explaining relative prices. In his *Premises of Political Economy* as well as in other works<sup>25</sup> he argued that society ought to maximize the aggregate physical volume of goods produced without ever giving any indication that he realized the problems involved in trying to define a physical unit by which totally different commodities could be aggregated. Thus Patten argued that

... of some commodities nature can produce more than of others, and if the more abundant are demanded a greater population can be supported, and for their labor a greater proportional return can be had than if something yielded by nature less abundantly was demanded.

... If this is true, a change in the demand for food, from commodities of which under the circumstances nature can produce but small quantities to those which can be produced in greater abundance, will increase both the gross and average return for labor, and at the same time bring about a more equal distribution of wealth.<sup>26</sup>



In the discussions of factor proportions he virtually never discussed the effects in production of changing the capital-labor ratio, although he often stressed the importance of capital accumulation. He seemed concerned only with the effects of different amounts of labor and capital applied to a given amount of land. When Patten did discuss the relation of capital to labor he usually posited a condition of fixed proportions of capital and labor in production.<sup>27</sup> Thus when he referred to decreasing returns, he can be interpreted as meaning diminishing amounts of physical output could be obtained as successive "doses" of capital and labor were added, where each "dose" would contain a specific and constant amount of labor and capital.

With these assumptions in mind, Patten's theory of production could be summarized by stating that total production is maximized where the marginal physical product of a "dose" of capital and labor is equal for all possible commodities. Stated symbolically: If

$$O = f(F_A, F_B, \dots F_N),$$

where  $O$  = output in value-equivalent, physical units, and  $F_A$  = quantity of the factors (labor and capital in fixed proportions) used in the production of commodity A; and if

$$F_O = F_A + F_B + \dots F_N,$$

where  $F_O$  is the total quantity of the factors, then with the Lagrangian multiplier, we get:

$$O = f(F_A, F_B, \dots F_N) + \lambda[F_O - (F_A + F_B + \dots F_N)];$$

setting the partial derivatives equal to zero, we get:

$$\frac{\partial O}{\partial F_A} = f_A(F_A, F_B, \dots F_N) = \lambda$$

$$\frac{\partial O}{\partial F_B} = f_B(F_A, F_B, \dots F_N) = \lambda$$

.....

$$\frac{\partial O}{\partial F_N} = f_N(F_A, F_B, \dots F_N) = \lambda$$

The “ $\lambda$ ” in Patten’s production theory was analogous to the margin of consumption in his consumption theory and was called the “margin of production.”<sup>28</sup>

Patten believed that society did not maximize production because there was a tendency due to the fact that most persons had strong appetites to concentrate on the production of too few commodities. The marginal productivity of labor and capital was thus very low in the production of these few commodities and very high in the commodities which society tended to neglect. Hence, according to Patten,

... many times the present amount of food might be obtained, with no increase of the proportional cost, if the people would be content with a diet containing the different articles of food in that proportion which will allow the land to be employed in the production of those commodities for which it is best fitted; and the same food would supply many times the present population if it were only used to preserve health, and not consumed in administering to an appetite for intoxicating drinks or otherwise wasted through ignorance and a lack of appreciation of what inclusive pleasures are.<sup>29</sup>

There was a particular amount of each product which, given the total quantity of labor and capital, would maximize total production.

When all the land is put to its most productive use, there is a fixed relation between the quantities of the various articles produced, and if more or less of any article is produced than its proportional share, the gross produce of the whole country will be diminished.<sup>30</sup>

When society reallocated the factors of production from the over-produced commodities to the under-produced commodities, Patten called this change an increase in the “field of employment.” Each such increase in the field of employment brought about by an increase in the diversity of production increased the total product of society. This line of reasoning led Patten to oppose free trade; he felt it would decrease the field of employment.

Patten’s failure to differentiate between movements along and shifts in a utility function combined with his failure to clearly differentiate between the forces of supply and demand in the creation of aggregate value led to these erroneous conclusions.

These basic confusions combined with Patten’s unorthodox use of value equivalent units of commodities prevented him from

pushing his analysis to its ultimate logical conclusions. A clear understanding of supply and demand combined with a clearing up of the confusion regarding movements along a utility function versus shifts of the utility function might have permitted him to deduce the model of Paretian optimality implicit in his analysis. Thus, if

$$\begin{aligned}
 U &= f(A, B, \dots N), \text{ and} \\
 A &= a(F_A), \\
 B &= b(F_B), \\
 &\dots\dots\dots \\
 N &= n(F_N), \text{ and} \\
 F_O &= F_A + F_B + \dots F_N, \text{ then} \\
 U &= f[a(F_A), b(F_B), \dots b(F_N)];
 \end{aligned}$$

adding the Lagrangian multiplier, we get:

$$U = f[a(F_A), b(F_B), \dots n(F_N)] + \beta[F_O - (F_A + F_B + \dots F_N)];$$

setting the partial derivatives equal to zero we get

$$\begin{aligned}
 \frac{\partial U}{\partial F_A} &= f_A [a(F_A)] a' (F_A) = \beta \\
 \frac{\partial U}{\partial F_B} &= f_B [b(F_B)] b' (F_B) = \beta \\
 &\dots\dots\dots \\
 \frac{\partial U}{\partial F_N} &= f_N [n(F_N)] n' (F_N) = \beta
 \end{aligned}$$

therefore, the necessary condition for resource allocation such that total utility is maximized is

$$f_A [a(F_A)] a'(F_A) = f_B [b(F_B)] b'(F_B) = \dots = f_N [n(F_N)] n'(F_N) = \beta,$$

or, the marginal rate of utility creation for “doses” of the factors should be equal for any product that could be produced.

If Patten's value equivalent units are reduced to the more usual physical units to which prices refer and hence prices are introduced into this analysis the above statement can be translated into the following: Total utility is maximized where all factors are used in such a way that the marginal rates of value creation and utility creation are equal in each and every use to which they are put.

Thus, Patten's analysis implicitly contains a crude statement of Paretian optimality. His inability to deduce these conclusions reflected his inability to separate questions of economic efficiency from questions of parametric shifts.

### DISTRIBUTION THEORY: TWO FUNDS

In his distribution theory Patten divided the total product of society into two funds. One fund was necessary to pay the costs of production – an amount great enough to offset the psychic pains involved in production – and the remainder represented what he called “the social surplus.” The laws of distribution, in which he was interested, would explain the disposition of this surplus.

There can be no doubt but that each factor will secure enough to repay its costs, yet as society progresses and the difference between total costs and subjective values increases, any factor loses a relative advantage if it fails to secure its share of the surplus revenue.<sup>31</sup>

Patten used the Ricardian differential rent theory, generalized to apply to all factors of production, to explain the distribution of the surplus.

Differences in fertility . . . enable the owners of better lands to secure a share of the surplus, though the owners of the poorest land are entirely shut out. The different cost of producing goods permits the better class of employers to hold on to a part of the surplus, even if other employers get no profits. And the same causes always enable some of the capitalists and laborers to secure differential gains.<sup>32</sup>

Thus, Patten had the nucleus of a marginal productivity theory of distribution. Had he been able rigorously to develop the view implicit in the above quotation, he would have preceded either Wicksteed or Clark in the development of marginal productivity distribution theory.

It would have been but a short step to move from Ricardo's analysis, which showed that land as a fixed factor earned the residual surplus determined by the difference between the average product

and the marginal product of the variable factor, to the theory that the variable factor received a payment equal to its marginal product. Any factor, including land, could be considered the variable factor, and if it was paid its marginal product, the fixed factor would then be paid the difference between the marginal and average product of the variable factor. Ricardo's rent theory could be generalized to account for the return received by any factor. Since this analysis was applicable to every factor, Patten would have been led to the question of whether the total product would be exhausted when each factor was paid its marginal product had he pursued the theory more rigorously.

However, Patten did not adequately pursue the logic of this approach to distribution, and assumed without any supporting arguments that the sum of all differential gains would not exhaust the surplus, much less the entire product. He concluded that all the factors of production would have to be paid a "fixed" income, which would be a minimum supply price for the factor, in addition to the income from differential advantage.<sup>33</sup>

Throughout his discussion of distribution Patten maintained that the evolutionary forces which were transforming strong into weak appetites were bringing about greater equality in income distribution by increasing the rates of wages and profits at the expense of rents.

Both a high rate of interest and high wages are necessary to preserve a high standard of life and any plan of social improvement which would secure a high rate of wages by lowering interest is defective. A reduction of the rate of interest can only be accomplished by such a diminution of the inducement to save as will cause all capital to be concentrated in the hands of a few persons. A class of laborers who do not save for themselves will always be so deficient in intelligence as to lack those qualities necessary to maintain high wages, and they will necessarily sink to as low a social level as the surrounding natural conditions will allow. What is needed is that every one be required to do all his part, and that each one should obtain the whole reward which nature gives for labor and abstinence. So long as interest is low, and cheap labor is allowed to compete with skilled labor, the benefit of low interest does not come to the laborers, nor that of cheap labor to the capitalists, but the loss of both classes goes to the landlords, who reap all the benefits of low interest and cheap labor, no one receiving the whole of that reward which nature offers to those who save and labor.<sup>34</sup>

The argument by which Patten came to this conclusion can be summarized as follows: as workers developed weak appetites, higher

type laborers with more varied diets replaced cheap laborers. This resulted in a much more diversified use of land. This more diverse use of land would result in an upward shift of the margin of production, that is, the marginal product of a “dose” of labor and capital would increase at all points along the production function. This increase would become proportionately greater as more capital and labor were added. Since the increasingly adverse effects of diminishing returns in the production of those few commodities consumed by persons with strong appetites would be replaced by production of commodities where productivity was much higher, the percentage increase in the margin of production would be greater the more capital and labor in use.

This would mean that the elasticity of society’s new aggregate production function,  $\Delta O/\Delta F \cdot F/O$ , would be higher at any point than that of the old production function. But, since the rent share in distribution was given by  $R/O = AP F - MP F/AP F$ , where  $R$  = rent,  $O$  = output,  $F$  = quantity of doses of labor and capital,  $MP$  = marginal product and  $AP$  = average product, then the rent share could be reduced to  $R/O = 1 - MP/AP$ . But since the elasticity of production equals

$$\frac{\Delta O}{\Delta F} \cdot \frac{F}{O} = \frac{\frac{\Delta O}{O}}{\frac{\Delta F}{F}} = \frac{MP}{AP},$$

then the fact that society’s new production function, after the increase in weak appetites had rechanneled society’s productive resources, had, at any point, a higher elasticity of productivity, proved that the relative share of society’s output going to rent must be smaller after the change from strong to weak appetites. This analysis still suffers from the technically insurmountable weakness of measuring output and productivity in physical units which were assumed to be comparable independently of any value measure.

The increase in the share going to wages and profits decreased inequality in society both through higher wages and the greater “income altruism” on the part of the capitalist which the higher profits made possible. In addition, the higher rate of interest and the growing weak appetites of workers allowed workers to share in the profits to an ever increasing extent because both of these forces promoted greater saving on the part of the workers.<sup>3 5</sup>

It was in his discussion of capital that Patten had perhaps his most penetrating analytical insights. No historian of economic

thought has emphasized this aspect of Patten's writings: But in 1889, the same year that Boehm-Bawerk published his *Positive Theory of Capital*, Patten published "The Fundamental Idea of Capital,"<sup>36</sup> in which he expounded a theory of capital which was, in its essentials, very similar to Boehm's, but independently formulated.

Patten asserted that there were but two original factors of production – natural resources and labor.<sup>37</sup> Laborers could individually and directly produce the commodities desired for final consumption or they could effect a division of labor in which a greater number of steps and greater length of time would be necessary to produce the final commodity. With this increased division of labor some laborers would produce "products" while others would produce "produce." Produce included commodities which "directly satisfy a want of man, and are desired by men on their own account," while products were demanded because "with their aid . . . [one] can produce more abundantly those things which he wants."<sup>38</sup> By products, Patten was referring to capital or goods in process. Capital came into being because of the roundaboutness of production. "A plough is so many loaves of bread partly made, while a loom and the engine which moves it are partly made coats."<sup>39</sup>

The increase in the division of labor and the increased period of production which results from this were utilized because they made production more efficient. The extent to which men would or would not take advantage of this increased productivity would depend upon the extent to which they were actuated by strong appetites and thought only of immediate gratification, or by weak appetites, in which case a more balanced approach to consumption would lead a man to place a higher value on future goods.

Because this represented an original formulation of a doctrine which was to become very important in the later development of capital theory, Patten, because his formulation was not presented with the logical rigor of Boehm-Bawerk's, has not received the acclaim to which he is entitled. A summary of Patten's theory, in his own words, follows:

The idea of capital is not correctly apprehended unless the term "capital" is applied to everything on which, labor being expended before the produce is wanted, the return will be increased beyond what it would be if the same labor had been exerted contemporaneously.

.....

All labor is employed in putting objects in motion; and by these motions we effect what we desire. When we wish a coat or some bread, some of our laborers begin a series of motions, then others

take their place and continue the series of motions, and these are followed by still others; and finally after many, many sets of laborers have followed one another, all keeping up the series of motions, the coat, bread, or other desired article appears, and our desires are satisfied.

In all this, we have a series of successive motions – or in other words, days' labor – exerted to produce a desired commodity; and whenever this is the case, the idea of capital is involved. At the end of each day's labor, we have a given amount of produce or commodities capable of directly satisfying some desire, and a certain number of products to which still more labor must be added before they will of themselves be desirable. Those laborers who have been employed on products must, by exchange, obtain the food, shelter, clothes, and other desired produce. The question now arises, what will be the ratio at which products will exchange with produce? . . . The reply must be that products will not exchange on equal terms with produce. . . . No one will exchange a given quantity of food for the same quantity at a future time, at least not while human nature retains its present characteristics. Ploughs and other products must exchange for a less quantity of food and other produce . . . and enough less so that some one will consent to exchange food, clothes, etc., for them.<sup>40</sup>

Patten did not use Boehm-Bawerk's notion of the "average period of production" as a measure of capital but anticipated the approach, later spelled out more completely by Irving Fisher and F. H. Knight, of defining the value of capital as the present, discounted value of future income yielded through the extension of the production period. "The income yielded . . . [created] the capital value instead of the capital creating the income."<sup>41</sup> Fisher and Knight realized that this definition of the value of capital made interest not a share of income but the whole of income.<sup>42</sup> Patten seemed to grasp this intuitively when he wrote: "There is a margin of labor, a margin of land and a margin of consumable goods, but no other margin. And each kind of capital steps into its appropriate class with its [that is, land's or labor's] margin as soon as economists cease to elevate capital into an entity. . . ."<sup>43</sup>

### PATTEN'S BASIC INCONGRUITY

Patten's contributions to economic analysis did not go unrecognized by his contemporaries. In the preface to *The Distribution of Wealth*, John Bates Clark, after acknowledging the important contributions to distribution theory made by such men as Marshall, Walker, and



Taussig, stated that to Patten he was “indebted for general stimulus and suggestion, the effects of which must have appeared in any theoretical work that I have done.”<sup>44</sup> Eugene von Boehm-Bawerk acknowledged Patten’s independent development of a theory of capital and interest very similar to his own. In the third edition of *Kapital und Kapitalzins*, Boehm wrote that at the time of publication of the first edition of his book “related ideas had been developed almost simultaneously by American scholars, especially Simon Patten . . . even though these ideas were less exhaustive and as yet did not contain a conscious separation from the line of ideas of the older abstinence theory.”<sup>45</sup> Alfred Marshall called Patten’s writings on utility theory “able and suggestive.”<sup>46</sup>

It is this writer’s opinion that a basic incongruity between Patten’s evolutionary theory and his economic analysis is responsible for the decline in his reputation as an economist. The concept of market efficiency, with which he was grappling, is based on the assumption of constant consumer tastes which are given. Market efficiency is judged in terms of these given tastes. Patten’s evolutionary theory placed some tastes on a higher level than others and measured progress in terms of the higher tastes of persons with “weak appetites.” Optimally, prices should reflect, in Patten’s evolutionary scheme, desires based on weak appetites. However, prices in a model of Paretian optimality should reflect the ratios of marginal utilities for everyone regardless of the nature of his tastes.

It was Patten’s inability to solve this problem that led him to ignore prices and the index number problems inherent in his utility theory. The problem of how to handle shifts in tastes within the context of the neoclassical theory of market efficiency, when an independent normative criterion exists for judging the tastes themselves, seems insolvable to this writer. This difficulty, from which Patten was unable to extricate himself, undoubtedly resulted in a less rigorous development of Patten’s economic analyses and a diminution of his influence on subsequent generations of economists.

### FOOTNOTES

1. Patten’s discussion of the relation between biological and social evolution is found in Simon Nelson Patten, *The Theory of Social Forces* (Philadelphia: American Academy of Political and Social Science, 1896), pp. 1-151.

2. *Ibid.*, p. 75.

3. Simon Nelson Patten, *The Development of English Thought* (New York: The Macmillan Co., 1899), p. 22.

4. *Ibid.*, p. 22-23.

5. *Ibid.*, p. 24.

6. *Ibid.*, p. 28.

7. *The Theory of Social Forces*, *op. cit.*, p. 147, and Simon N. Patten, *The Reconstruction of Economic Theory* reprinted in *Essays in Economic Theory*, ed. R. G. Tugwell (New York: Alfred A. Knopf, 1924), p. 330 *et passim*.

8. Simon N. Patten, *The Theory of Prosperity* (New York: Macmillan, 1902), p. 167; Simon N. Patten, *The New Basis of Civilization* (New York: Macmillan, 1907), p. 62; and Simon Nelson Patten, *The Consumption of Wealth* (Philadelphia: The University of Pennsylvania, 1889), p. 65.

9. Simon Nelson Patten, "The Conflict Theory of Distribution," *The Yale Review*, Vol. XVII (August, 1908), reprinted in Simon Nelson Patten, *Essays in Economic Theory*, *op. cit.*, p. 239; and Simon Nelson Patten, *The Stability of Prices* (Baltimore: American Economic Association, 1889), p. 59.

10. Patten, *The Reconstruction of Economic Theory*, reprinted in *Essays, op.cit.*, p. 291; and Patten, *The Theory of Prosperity, op.cit.*, pp. 233-234.

11. Patten, *The Theory of Prosperity, op.cit.*, p. 170.

12. See *e.g.*, *The Theory of Dynamic Economics* (Philadelphia: The University of Pennsylvania, 1892), p. 60; and *The Consumption of Wealth, op.cit.*, p. 16, *et passim*.

13. Patten *The Theory of Dynamic Economics, op.cit.*, p. 72.

14. The proof of this statement follows: if

$$\frac{P_a}{P_x} a = X = Z = B = \frac{P_b}{P_x} x, \text{ and if}$$

$$\frac{\partial U}{\partial A} = \theta = \frac{\partial U}{\partial B}, \text{ then}$$

$$\frac{\partial A}{\partial U} = \frac{P_a}{P_x} \frac{\partial a}{\partial U} + a \frac{\partial \frac{P_a}{P_x}}{\partial U} = \frac{1}{\theta}, \text{ and}$$

$$\frac{\partial B}{\partial U} = \frac{P_b}{P_x} \frac{\partial b}{\partial U} + b \frac{\partial \frac{P_b}{P_x}}{\partial U} = \frac{1}{\theta}.$$

But since  $P_a$ ,  $P_b$ , and  $P_x$  are given and constant the above reduces to

$$\frac{P_a}{P_x} \frac{\partial a}{\partial U} = \frac{1}{\theta} = \frac{P_b}{P_x} \frac{\partial b}{\partial U}$$

which in turn reduces to

$$\frac{P_x}{P_a} MU_a = \frac{P_x}{P_b} MU_b = \theta.$$

or

$$\frac{MU_a}{P_a} = \frac{MU_b}{P_b} = \frac{\theta}{P_x}.$$

15. Patten, *The Theory of Dynamic Economics*, *op. cit.*, p. 72.
16. Patten, *The Premises of Political Economy* (Philadelphia: Lippincott, 1885), p. 14.
17. Simon Nelson Patten, "The Scope of Political Economy," *The Yale Review*, Vol. II (Nov., 1893), reprinted in Patten, *Essays*, *op. cit.*, p. 183.
18. Patten, *The Consumption of Wealth*, *op. cit.*, p. 45.
19. Patten, *The Theory of Dynamic Economics*, *op. cit.*, p. 56; *cf.* also Simon Nelson Patten, "The Economic Causes of Moral Progress," *The Annals of the American Academy of Political and Social Science*, Vol. III (1893), reprinted in Patten, *Essays*, *op. cit.*, p. 167.
20. Patten, *The Consumption of Wealth*, *op. cit.*, pp. 45-47.
21. Patten, "The Economic Causes of Moral Progress," reprinted in *Essays*, *op. cit.*, pp. 168-169.
22. *Ibid.*, p. 170; *cf.* also Simon Nelson Patten, "The Economic Basis of Prohibition," *The Annals of the American Academy of Political and Social Science*, Vol II (1892).
23. Patten, *The Consumption of Wealth*, *op. cit.*, p. 65.
24. Patten, *The Theory of Dynamic Economics*, *op. cit.*, p. 57.
25. *E.g.*, Simon Nelson Patten, *The Economic Basis of Protection* (Philadelphia: J. B. Lippincott Co., 1890).
26. Patten, *The Premises of Political Economy*, *op. cit.*, pp. 47-48.
27. Patten, *The Stability of Prices*, *op. cit.*, pp. 32-37; and *The Theory of Dynamic Economics*, *op. cit.*, p. 80.
28. Patten, *The Theory of Dynamic Economics*, *op. cit.*, p. 101.
29. Patten, *The Premises of Political Economy*, *op. cit.*, p. 62.
30. *Ibid.*, p. 16.
31. Patten, *The Theory of Dynamic Economics*, *op. cit.*, p. 84.
32. *Ibid.*, pp. 87-88.
33. Patten, *The Theory of Prosperity*, *op. cit.*, pp. 82-83.
34. Patten, *The Premises of Political Economy*, *op. cit.*, pp. 222-223.
35. Patten, "The Conflict Theory of Distribution," *op. cit.*, pp. 238-239.
36. Simon Nelson Patten, "The Fundamental Idea of Capital," *The Quarterly Journal of Economics*, Vol. III (Oct., 1889), pp. 188-203.
37. *Ibid.*, p. 189.
38. *Ibid.*, p. 193.
39. *Ibid.*, p. 194.
40. *Ibid.*, p. 199 and pp. 194-195.
41. Patten, "The Conflict Theory of Distribution," *op. cit.*, p. 226.
42. *Cf.* Irving Fisher, *The Theory of Interest* (New York: The Macmillan Co., 1930), p. 332; and F. H. Knight, "Capital and Interest," reprinted in the American Economic Association *Readings in the Theory of Income Distribution* (Philadelphia: Blakiston, 1946), pp. 384-417.
43. Patten, "The Conflict Theory of Distribution," *op. cit.*, p. 226.
44. John Bates Clark, *The Distribution of Wealth* (New York: Kelley and Millman, 1956), p. lx.
45. Eugene von Boehm-Bawerk, *Kapital und Kapitalzins* (3d ed., Innsbruck: Verlag der Wagnerschen Universitaets – Buchhandlung, 1914), p. 621. Translated by the present writer.
46. Alfred Marshall, *Principles of Economics* (8th ed., London, Macmillan and Co., 1961), p. 109.