

De Gustibus *Est* Disputandum: The Phenomenon of "Merit Wants" Revisited

By EDWIN G. WEST AND MICHAEL MCKEE*

The subject of this paper is a conflict that appears to be emerging among contemporary schools of economic thought. The "school" of George Stigler and Gary Becker has recently argued that tastes are "stable over time and are similar among people" (1977, p. 76). In contrast, the public finance "school" of Richard Musgrave contends that, in many cases, tastes are so *fundamentally* different that society frequently finds it imperative to interfere to "correct" them (1959, p. 14). The existence of "wrong" tastes is described by Musgrave as "a distortion in the preference structure" and it calls for public intervention to satisfy what he calls "merit wants." This constitutes a policy that can be viewed in the normative sense of what a "good" society *ought* to do; or in the positive sense of the types of government intervention that we actually see taking place. "In the situations now considered [merit goods], interference is...the very purpose of public policy" (Musgrave and Peggy Musgrave, 1980, p. 85).

Central to our investigation is a focus upon the need for empirical testing of each position. Stigler and Becker's hypothesis is framed in a way that can be tested by the evidence. The same is true of the merit good argument insofar as it attempts to explain real world events (positive analysis). The evidence that we shall apply concerns the example of education, which is repeatedly cited by the Musgrave school as a prime example of a merit want. In the process we shall amplify and extend the Stigler-Becker analysis to see if it can demonstrate that tastes for educa-

tion can be treated as stable over time or whether the alternative contention, that mass education has been achieved mainly because of a merit good policy, can be sustained by the evidence.

Incidental to our investigation will be a brief examination of a subsequent verdict that the Stigler-Becker postulate of similar tastes reduces to mechanical determinism because choice, liberty, and free will are all sacrificed and persons cease to be problem solvers (Richard McKenzie, 1979). We shall contend, in contrast, that the Stigler-Becker model actually expands the individual's degrees of freedom, and that arguments stemming from the "tastes are different" school present the greater potential for social manipulation.

I. Stable vs. Unstable Tastes: The Implication for Social Manipulation

Economists usually terminate their analysis of behavior when they reach the conclusion that all remaining phenomenon to be examined can be explained by a difference in tastes between people. Stigler and Becker argue that this is unfortunate because much more can be explained if only the economists can make a more resolute and sustained application of their analytic tools. If, in particular, the concept of capital can be extended to the process of consumption, and if we can develop the concept of the household production function, then much more individual behavior can be "predicted" in the normal economic meaning of that term.

Consider, in this light, the conventional equation of demand

$$(1) \quad D_x = F(p_x, p_n, Y, W, T)$$

where Y is an individual's income, W is his wealth, and T his given tastes. Stigler and

*Carleton University, Ottawa, Canada K1S 5B6, and University of Western Ontario, London, Canada N6A 5C2, respectively. During the lengthy gestation period of this paper, we have received many helpful comments. We thank our Carleton colleagues, Steve Ferris, Walter Hettich, and John McManus; Ken Jackson and Keith Jones of Auckland; and John Palmer of Western Ontario.

Becker contend that the analysis should proceed by dropping item T altogether. So long as the remaining variables are fully specified, the rest is a matter of objective empirical testing. But the demand for full specification is a serious one. In particular, the ps in equation (1) should include all possible shadow prices pertaining to household production functions. Such calculation, of course, will recognize that time is one of the important costs. The demand for commodity x , therefore, should be treated in the same way as an entrepreneur's demand for a factor of production. The term D_x is a demand for an input which assists "family entrepreneurs" in maximizing, not direct utility from x , but a utility function of "objectives of choice" that they produce with x and other market goods, their own time, their own skills, and their human capital. The latter should be included in W in equation (1).

The assumption that tastes do not matter in the analysis, because they are stable and equal for all individuals, will initially be most irritating to the Austrian subjectivists. To them, the commodity x in the first place cannot be objectively defined from outside, but has to be identified by the individual chooser. So the empiricism that follows the Stigler-Becker analysis is equally suspect. But there are more ominous doubts that have been expressed recently by McKenzie. According to him, the Stigler-Becker theory is so totally deterministic that it implies that individuals cease to be choosers and no longer have free will:

Once the preferences and constraints are specified, as they are in the Stigler/Becker model, a computer...can be substituted for the presumed chooser in the model. Further, there is nothing in the Stigler/Becker model which remotely resembles free will, a concept so much a part of an ideological base of neo-classical economists like Stigler and Becker. [p. 148]

More disturbing still, McKenzie argues that the determinists and behaviorists are constantly looking for external forces to explain behavior not only to increase understanding,

but also to aid social manipulation, that is "to secure control of behavior" (p. 153). In our opinion, however, this is not the appropriate conclusion to be drawn from the work of Stigler and Becker. For it is they who are challenging the current consensus that "deplorable tastes may be countered by coercive and punitive action," a consensus based on the belief that these same tastes "at least when held by an adult, are not capable of being changed by persuasion" (p. 76).

The subjectivist supporters of the normal free market model are apt to forget perhaps that it too is "coercive." While utility functions may be regarded as open ended, the same is not true of opportunity sets. In all models of competitive markets, individuals are still constrained by finite incomes, and this in the long run as well as in the short. In addition they are constrained (coerced) by market-determined relative prices *which they are powerless* to alter. What the Stigler-Becker model does, in fact, is partially to relax some of the usual constraints and to offer indeed more degrees of individual freedom. This is most clearly seen in their exposition of the effects of human capital accumulation upon the internal shadow prices of goods.

In their example of the "addiction" of music appreciation, the shadow price of extra units of music consumption declines because each past increment has provided a cumulative investment in human capital that allows future "household production" of music appreciation to be performed at lower marginal costs. This means that behavioral decisions can determine the internal terms of trade. In turn, this implies that individuals have an extra dimension of choice—choice in developing the skill vector. The degrees of freedom are clearly increased.

The situation is depicted in Figure 1. To explain the addiction of a good M , for example, music, we start with a consumer faced with the price constraint represented by the slope AB . At the initial equilibrium E_1 at time t_1 , he consumes Q_1 of M . But since musical skill or human capital is a function of past QMs , the cost of consuming (appreciating) music in the next period, t_2 , is reduced to the slope of CD . (We are ignoring income

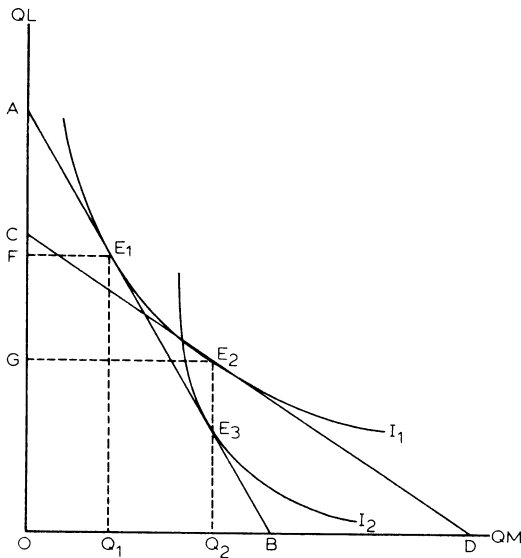


FIGURE 1

effects.) Thus because individuals can change ultimate price constraints by their own behavior, the idea of choice becomes richer and more meaningful, not less. Traditional analysis, in contrast, would have “explained” the observed move to Q_2 consumption simply (and less helpfully) as a “change in tastes.” The old price shown by AB would remain as a parameter instead of the change to the more fully specified and more accurate shadow price of CD . The traditional approach, in other words, would select E_3 as the new equilibrium point and would accordingly imply a change in the preference structure shown in the move from indifference curve I_1 to curve I_2 .

The stability of tastes over time implied by the Stigler-Becker analysis is supported by Steven Landsburg (1981). He studied the behavior of consumption in England for the period 1900–55 in an attempt to find rejection of the Strong Axiom of Revealed Preference. For the entire period he found no instances of such rejections.

II. The “Tastes are Different” School: The Case of Merit Wants

While McKenzie argues that the “tastes are similar” school leads to an interest “to

secure control of behavior,” no clear evidence of this is cited. In contrast, evidence is available to show that some members of the “tastes are different” school believe that society can (justifiably) and does (actually) interfere deliberately “to secure control of behavior.” As Musgrave observes in his original discussion of merit wants:

While consumer sovereignty is the general rule, situations might arise, within the context of a democratic community, where an informed group is justified in imposing its decisions upon others The advantages of education are more evident to the informed than the uninformed, thus justifying compulsion in the allocation of resources to education; interference in the preference patterns of families may be directed at protecting the interests of minors. . . . These are matters of learning and leadership which are an essential part of democracy reasonably defined and which justify the satisfaction of certain merit wants within a normative model. [p. 14]

Musgrave carefully distinguishes the public good-externality case from merit goods. The former relate to social wants whose satisfaction is subject to the principle of consumer sovereignty through, for instance, a system of Lindahl taxes. The policy of catering for merit wants on the other hand is directed, not to the satisfaction of consumer sovereignty, but to the interference with it. Implicitly and ideally, any “subsidies” that are used to provide for the merit wants come from revenues provided exclusively by the families whose preferences are to be manipulated.

There appear to be several versions of the merit good thesis, all involving government coercion of some degree. The strongest case is where preferences (of “leaders”) are flatly imposed. In terms of Figure 1, this could take the form of government decree that the individual must purchase OQ_2 units of music at the original price. The new equilibrium would be at E_3 with an indifference curve lower than (but consistent with) I_1 cutting the price opportunity curve AB . The degree of coercion

can be measured by the difference between the controlled individual's marginal rate of substitution and the marginal rate of transformation.

A second form of coercion, could be implemented by a tax-subsidy system (package) imposed exclusively on the individual. This would result in the "socially desired" quantity of consumption without direct quantity decrees. Marginal equalities would now prevail. But government coercion would remain and its extent would be indicated by the degree of fall to a lower indifference curve.

Another type of merit good policy takes the form of what Musgrave calls a "temporary interference" with choice, the result of which will ultimately liberate the individual from his own current tastes or choices that he will later recognize to be inferior. One example is the correction of "bad" information caused by advertising.

The subject of advertising, indeed, brings out most graphically the contrast between the two schools of thought. Musgrave argues "that there may arise [from advertising] a distortion in the preference structure that needs to be counteracted" (p. 14). The issue is therefore one of government supply of correct information to change tastes. The normal costs of this service are presumably borne by the protected individual through his tax contributions. Even in Musgrave's own terms, however, there may be abnormal costs that may be so high as to swamp the benefits. These stem from the fact that governments are themselves heavy users of the media (the federal government is the largest single advertiser). There is no assurance that governments too will not use advertising to provide deliberately contrived bad information designed to change tastes in pursuit of various political and other payoffs.

Stigler and Becker argue in direct opposition to the view that the function of advertising is to change tastes. To them, advertising primarily produces complex information. But information is another input into the household production function. An increase in advertising may consequently lower the price of the commodities that the household produces because it is made to believe "correctly or incorrectly—that it gets

a greater output of the commodity from a given input of the advertised product" (p. 84). The result is that advertising influences consumption, not by changing tastes, but by changing prices. The movement is along a stable demand curve—not a shift in the curve.

Presumably Stigler and Becker's households also face the danger of dubious quality information from advertising. But no one "supreme" advertiser (like a government) is forced upon them. And since households are themselves treated as small "factories" producing their own commodities, the analogy of the danger of advertising is the situation where *producers* are persuading (informing) other *producers*. Meanwhile each producer can freely select and reject contracts and signals after experiencing the use (or supply) of inputs in a competitive market. No one member (participant) can impose an input on all others as a merit good because *he* deems it to be meritworthy.

III. The Example of Education

A. The Merit Good Theory and Education

Those who wish to test, retrospectively, whether certain past government policies can be explained by a benevolent merit want philosophy face a difficult identification problem. This is clearly recognized by Musgrave: "Interferences with consumer choice may occur simply because a ruling group considers its particular set of mores superior and wishes to impose it on others" (p. 14).

In the case of intervention in *any* area, the government presumably has an obligation to define the good or service that is believed to be a beneficial merit good and the appropriate level of consumption. It is then required that a current deficiency in demand be empirically verified. Already this procedure will, of course, be challenged by subjectivists. McKenzie, for instance, complains that:

The "good" must be externally, objectively defined, which means that further specification and restriction of the

utility function of the economic actor must be made. The individual must maximize "child services" of a certain kind, that on which data is collected, and he is not free to define for himself what he means by "child services." [p. 150]

Those who do not share McKenzie's difficulty will find others. If preferences are to be fully and universally imposed by a merit good policy, the assumption must be that most individuals will never purchase the relevant (merit) good or service in "sufficient" quantities. As shown above, this will call for a policy of government decreed mandatory purchase, or a tax-subsidy package where the subsidy provides 100 percent of the cost of the marginal units. In this latter instance, the good becomes "free" on the market while the quantities are fixed.¹

Thus, to "justify" this strong version of merit goods policy, evidence will be required to show that private purchases are insufficient by most people. In the case of education, however, proponents of merit good reasoning do not appear to visualize a *permanent* unwillingness of individuals to make private purchases. Consider Musgrave's argument that, "the advantages of education are more evident to the informed than to the uninformed, thus justifying compulsion in the allocation of resources to education..." (p. 14). This sentiment echoes that of John Stuart Mill: "The uncultivated cannot be competent judges of civilization. Those who most need to be made wiser and better, usually desire it least" (1969, p. 953). The implication of such reasoning is that after a period of compulsory education, the advantages of education will become evident because persons will now be informed (and

educated). The policy, in other words, should be self-liquidating. Choice will be imposed temporarily and eventually the imposition will be withdrawn.

Nassau Senior acknowledged this implication in 1861 in his advice to the Newcastle Commission on Education (of which he was a member):

We may look forward, as I said before, to the time when the labouring population may be safely intrusted [*sic*] with the education of their children, but no Protestant country believes that this time has come.... So far as we are influenced by those wishes or hopes, we ought to try and prepare the way for their realization, by giving to the present generation an education which will fit them to educate still better another generation, which in turn, may further improve a third, until England becomes what no country has ever yet become, a Utopia inhabited by a self-educated and well-educated labouring population. [p. 5]

Merit good theory is unscientific if we are never informed about the precise time period that is relevant to the particular problem. If we are given a prediction which is not falsifiable within a specified period of time, we can never falsify the theory, because at every future moment we will be urged to be more patient. It is not clear whether Senior was attempting to be precise in his reference to a time period of three generations before people could be entrusted to purchase their own education directly. But if he *did* intend this estimate seriously, his merit want argument, in terms of positive theory, has now clearly been falsified. The reason, of course, is that more than three generations have already ensued and universal free and compulsory education is still with us. But if the merit good theory has failed, we need alternative hypotheses to help explain the phenomenon of the continuance of public education.

B. The Stigler-Becker Theory and Education

Since Stigler and Becker postulate that tastes do not differ seriously between indi-

¹D. Nichols, E. Smolensky, and T. N. Tideman (1971) note that many goods which are publicly provided on ostensibly merit grounds are, in fact, undersupplied at the stated "price" and require rationing. This is typically on a waiting basis on the premise that this will ensure their consumption by low income persons. Although this need not be the result (Yoram Barzel, 1974), such a political sentiment would imply that the politicians feel that those with high incomes will buy the good in sufficient quantities without public provision. If so, why opt for a merit good when income is the problem?

viduals, the merit good policy to change tastes will to them be misinformed. Without wishing to argue or assert that tastes are identical, we shall argue that Stigler and Becker's microeconomic tools of analysis present a serious challenge to the merit good proponents. We shall show, in particular, that the kind of evidence required to justify a merit good policy is much more complex when we apply the Stigler-Becker analysis of household production functions. But to progress with the argument, it is first necessary to extend the application of the theory.

In their analysis of the process of "addiction," Stigler and Becker offer the example of music appreciation. The term S_m is used to denote music-specific human capital. The amount of music appreciation at any one moment j is M_j and this depends upon the time allocated to music and the music human capital at j : t_{mj} and S_{mj} , respectively.

The variable S_{mj} is produced partly with experience in the activity (learning by doing) and partly with nonspecific human capital, education. Stigler and Becker's sixth equation reads:

$$(2) \quad S_{mj} = h(M_{j-1}, \dots, M_{j-j-1}, E_j),$$

where E_j denotes the level of nonspecific human capital defined broadly as education. Addiction in the Stigler-Becker framework is defined as the presence of a cumulative effect of prior participation in an activity. Beneficial addiction is defined as $\partial S_{mj} / \partial M_{j-v} > 0$, $\forall v$ in (2).

Our point is that education itself is susceptible to this addictive effect of prior participation. We can rewrite (2) for education thus:

$$(3) \quad S_{ej} = g(E_{j-1}, \dots, E_{j-j-1}),$$

where S_{ej} represents the stock of educational human capital, and E_j the consumption of educational services at time j . Since education represents a nonspecific form of human capital, it is reasonable to expect it to exhibit beneficially addictive behavior.

The Stigler-Becker framework is concerned with the effect of this addiction on

relative shadow prices of various activities. In the household production paradigm, the household produces its music appreciation with inputs of music (sound) and its own time. The efficiency with which the music is transformed into music appreciation depends on the stock of music human capital at time j , S_{mj} . When tastes are held to be irrelevant (i.e., where they are identical across all actors for all time), all differences in behavior are ascribed to differences in the relative shadow prices confronting the actor. With time as the household input, the shadow prices will be determined by the marginal productivity of the actor's time devoted to the activity. This will be a function of the stock of (specific) human capital.

Stigler and Becker add an additional component to the analysis. Time spent currently on an activity will augment the stock of human capital (where the addiction is beneficial), thus reducing the shadow price of that activity for the remainder of the actor's lifetime. All beneficially addictive activities comprise a current consumption component and an investment component. Differences in behavior across actors can be explained in terms of differences in specific human capital, innate ability, education, and the *ex ante* addiction effect.

Using education as our activity we can rewrite Stigler and Becker's equation (8) as

$$(4) \quad \pi_{ej} = W \partial t_{ej} / \partial E_j - W \sum_{i=1}^{n-j} \frac{\partial E_{j+i} / \partial S_{ej+i}}{\frac{\partial E_{j+i}}{\partial t_{ej+i}} \cdot \frac{dS_{ej+i}}{dE_j} \cdot \frac{1}{(1+r)^i}},$$

$$\text{or} \quad \pi_{ej} = W \partial t_{ej} / \partial E_j - A_j \\ = W / MP_{t_{ej}} - A_j,$$

where π_{ej} represents the marginal shadow price of educational services at time j , W the wage rate, r the interest rate, n the length of life, t_e the time devoted to education and A_j the effects of addiction which captures the value of the saving of *future* time inputs arising from the effect of the current-period

consumption of educational services—that is, human capital is durable.

The effect A_j is positive so long as education is beneficially additive and tends to decline as j increases, approaching zero as j approaches n (as the individual ages). So long as E_j is increasing with j the term W/MPt_{ej} declines with age.

We recognize that the family is the relevant decision-making unit here. Where it is, for the education of the child under consideration, the A_j term may be considered as reducing the shadow price, π_{ej} , as perceived by the parent. In this way we can accommodate the intergenerational proposition contained in the above quotation attributed to Senior.

The representation in equation (4) permits us to focus on two categories of additive behavior that will have different roots and consequences. The first, which we call *ex post*, is embodied in the E_j term of the first component of the right-hand side of equation (4). Recall that educational services E are produced by the household using time t_e and human capital S_e . From equation (3) and our assumption that education is beneficially additive, it follows that the amount of educational services consumed in the current period will be a direct function of the level of previous consumption of education. Thus *ex post* addiction (beneficial) implies that the marginal productivity of time spent in education will rise over the lifetime.

The *ex ante* addiction is demonstrated with the A_j term of equation (4). The actor in deciding on his current consumption of E will include the value of the expected saving of future time inputs arising from the human capital effect of current consumption.

Both of these additive effects will be affected by a variety of external events, and these can be expected to alter behavior in predictable ways. In the next section we investigate the empirical evidence of nineteenth-century education in the U.K. in the light of the predictions of the Stigler-Becker model and the merit good (tastes are different) model.

Before we leave this section we will introduce a further “refinement” to the Stigler-Becker framework. This is the concept of a

threshold level of consumption for the addiction effect to take place. Although Stigler and Becker do not explicitly introduce this concept, it appears to be implicit within their model.

It is clearly reasonable to expect a discontinuity in the human capital equation (3) such that the addiction effect appears as

$$\partial S_{ej} / \partial E_{j-v} = 0, \text{ where } \sum_{v=1}^j E_{j-v} \leq E_j^*,$$

$$\partial S_{ej} / \partial E_{j-v} > 0, \text{ where } \sum_{v=1}^j E_{j-v} > E_j^*.$$

Here E_j^* serves as the threshold. This covers the *ex post* additive response, but what of the *ex ante*? Under the normal circumstances we would expect the A_j term of equation (4) to involve some uncertainty. At time j one will not be completely certain of the effect of current-period consumption of a service on human capital and thus future shadow prices. A threshold level of prior consumption E_j^* may reduce the level of uncertainty by an order of magnitude.

Where a threshold effect is important, the time path of the purchases of the market commodity input (for example, education or music sounds) will exhibit a “surge” phenomenon. Consumption may climb slowly for a time and then rise quite rapidly as the addiction effect strengthens.

C. The Stigler-Becker Theory and the Merit Good Theory in Empirical Perspective

We have already explored the broad kinds of evidence necessary to justify the application of the strong case of merit goods. In particular, merit good advocates must demonstrate that the level of private consumption is inadequate compared to prevailing income levels, or is not increasing at an appropriate rate with income. A brief summary of some facts on education in England will now be relevant.²

²A fuller analysis of these data is given in West (1975, a; b).

TABLE 1—GROWTH IN PRIVATE SCHOOLING, 1818–1858

Year	Population	Average Annual Growth Rate of Population ^a	Number of Day Scholars	Average Annual Growth Rate of Day Scholars ^a
1818	11,642,683]	1.40	674,883]	3.6
1833	14,386,415]		1,276,947]	
1851	17,927,609]	1.47	2,144,378]	3.16
1858	19,523,103]	1.21	2,525,462]	2.35

Sources: The 1851 Census and the 1861 Newcastle Commission.

^aShown in percent.

About forty years before Senior's expressed opinion (quoted above) on the need for intervention in education, Henry Brougham's Select Committee reported (in 1820) that in 1818 about one in seventeen of the population was being schooled. This schooling was paid for largely by the parents. If education is a normal good, we would expect this measure of schooling to increase with the rise in incomes. Brougham's Committee reported that the figures for 1818 were a considerable improvement on 1800 when the earliest estimate was made. In 1828, Brougham in his private capacity followed up the report for 1818 with a 5 percent sample survey of his own, using the same sources (the parochial clergy) as before. His findings suggested that the number of children in schools had doubled in ten years.

Such evidence alone would challenge the view that tastes for education need to be *imposed*. If education consumption appears and rises with income increases, then the appropriate government strategy might instead be one or more of the following: (a) redistribution of income, (b) more patience at a time of steady income growth, and (c) concentration on removal of barriers to such growth.

It is interesting next, however, to compare the rising income explanation with that of the Stigler-Becker model. As shown, their theory predicts that, so long as an initial education threshold has been reached, the marginal cost declines with successive increments of it because the accompanying buildup of human capital continuously increases the capacity for efficient consumption. Since we now have two potential explanations for the spontaneous growth of

education, it is necessary next to attempt to determine their relative contributions.

The rising income explanation posits schooling as a normal good. It then follows that, as per capita income increased in the nineteenth century, schooling grew "naturally" in response. Table 1 demonstrates the growth of schooling prior to it being made free and compulsory. (The figures were available to Senior.) It is shown that the annual growth of scholars over the period exceeded the annual growth of population. During the compilation of the 1851 educational census, it was reported that the average attendance at school of working class children was nearly five years. The Newcastle Commission reported that by 1858 it had risen to nearly six years.³ And the attainment of a threshold for most people was reported in the 1861 Newcastle Commission's conclusion that "almost everyone receives some amount of schooling at some period or another."⁴

To begin to examine the extent to which the growth of day scholars can be explained according to the income effect argument, we should remember first that in the initial period (1818–33) covered by the table, real wages were rising due to the combined effects of a fall in the price levels and a rise in nominal wage rates.⁵ But even here the rise

³See West (1975a, p. 27).

⁴R. S. Schofield notes that it was "...the opinion of an educator of the time" (the master in charge of the Borough Road School in London pre-1800) that "it took twelve months to teach a child to read and between three and four years to teach him to write well with some simple arithmetic" (1968, p. 317).

⁵For data on nominal and real wages between 1820 and 1831, see B. R. Mitchell and Phyllis Deane (1962, pp. 343; 471).

was modest. Unless the income elasticity was very high therefore, the income effect alone could not fully explain the growth of schooling reported in Table 1. For subsequent periods, real wages were essentially stable or falling. As well, birth rates rose slightly while infant mortality rates were constant.⁶ This would imply a rise in family size and an increase in the proportion of the population under 10 years of age (of school age). It is probable, therefore, that family resources *per child* were falling, especially after 1840. Further, the distribution of income during the period to 1870 exhibited a shift toward the high-income cohort. According to P. H. Lindert and J. G. Williamson: "The 1860's were preceded by at least a century of rising inequality" (1981, p. 6). Their reported estimates of the Gini coefficient for 1801–03 was .519, and for 1867, .551. Not only were incomes not rising during this period, but the concentration among the higher-income classes was increasing.

In sum, the demographic evidence does indicate a natural increase in the school age population during the first half of the nineteenth century. This itself might explain the growth of day scholars reported in Table 1. We must remember, however, that schooling at this time was primarily private (fee paying). With static real wages, a rise in the school age population, and the changing distribution of income, the resources per pupil were probably falling. The income effect therefore could not appreciably explain the rise in schooling reported in Table 1.

Another change that could have encouraged an expansion of schooling would have been a fall in the conventional price (tuition). There is no specific evidence of such a change. Since schooling is a labor intensive activity, and because real wages were in general relatively static over the period, we must presume that there would have been no substantial market forces inducing price reductions.

Government subsidies were, of course, a potential influence for price reductions. In the first part of our period however, 1818–33, they were entirely absent, and when they

began in 1833, their aggregate value was only £20,000. By 1841, they were still so small that they amounted to a sum considerably less than that collected from parents for schooling in the City of Bristol alone.⁷ West has estimated that by 1851 central government subsidies accounted for only $4\frac{1}{2}$ percent of total annual expenditure on day schooling.⁸ At the end of our period, the late 1850's, subsidies had certainly increased substantially and could have reduced tuition by up to one-fifth.

We must conclude that the evidence does not suggest a significant fall in the *conventional* price, at least until the 1850's. The remaining candidate for an explanation of education expansion is the fall in the *shadow* price, π_{ej} . There were several factors at work during this period that could explain such a fall. The secular fall in morbidity and mortality rates which occurred during this period would lower the shadow price of education by increasing the horizon of the addiction effect, A_j . In terms of the Stigler-Becker theory, the parameter n in equation (4) above was subject to an exogenous change. At the same time, the fall in infant mortality coupled with the Factory Act protection of young workers and technical change leading to a smaller requirement for child labor would reduce the W term in (4). A fall in the shadow price of education would result from both of these changes.

Further, we must recognize that the evidence in Table 1 pertains to *schooling*, which is a very narrow component of *education*. To fully appreciate the increase in resources devoted to education, one must include the proliferation of books, newspapers, pam-

⁷See West (1970, p. 84).

⁸West's (1970) *minimum* estimate for total expenditure on day schooling in England and Wales for 1833 was approximately £2 million. The government subsidy introduced that year thus amounted to 1 percent of that amount. To arrive at total expenditure for 1851, on the assumption documented above that labor costs were constant over this period, the amount of total expenditure of 1833 can be multiplied by the school population increase to obtain just over £3 $\frac{1}{2}$ million. The education subsidy of that year was £150,000 (see David Wardle, 1970, p. 66), which is about $4\frac{1}{2}$ percent of the total expenditure estimate.

⁶See Mitchell and Deane, pp. 29; 38.

phlets, and serials at this time. This phenomenon implied more widespread literacy than previously and suggests yet another mechanism serving to lower π_{ej} . Widespread literacy would constitute an external benefit to any person becoming literate. The spread of reading materials would serve to enhance the *ex ante* addiction component, A_j .

The rise in education consumption for the period studied, therefore, provides evidence of the *ex post* addiction effect. As well, the *ex ante* addiction effect is implied through the fall in mortality rates and the rise in literacy rates. Both of these influences resulted in a lower shadow price, π_{ej} .

Another, more direct, indication of the growth of the nineteenth-century literacy was the fall in the number of brides and grooms signing the marriage register with a mark. This measure is well respected by historians, and the arguments for it are more sophisticated than appear at first sight.⁹ The evidence on increasing literacy using this approach is shown in Figure 2 (for details of the Forster Act, see fn. 10). This supports a "surge theory" of education that is consistent with the Stigler-Becker thesis. "Satiation" had virtually been reached before schooling was made compulsory.¹⁰ The be-

⁹Indeed, for our present purposes it may reveal much information. Schofield notes that the order of instruction was such that "writing was taught only to those who could read 'competently well,'" thus "the ability to read was probably much more widespread than the ability to write" (1968, pp. 316; 317). So the measure will err on the *conservative* side.

¹⁰The major piece of English educational legislation in the nineteenth century was the Forster Act of 1870. Its announced primary responsibility was to fill up the remaining "gaps" in education where necessary. The main policy instrument was the provision of government (board) schools. The private system, however, was to be given a brief period of grace to give it a chance to affect the appropriate addition of educational supply. The first time that the 1870 Act could have had any significant influence on schooling must have been some years after the legislation. First, the period of grace granted to private schools had to expire. Even then it took some time to establish school boards, to draw up plans, and to renegotiate loans. The various procedures usually took about two years to carry out. On the assumption that an efficient schooling lasts six years at a minimum, the 1870 Act's effects on education and literacy would not therefore begin to show until the school leavers of 1880. It should be observed that both curves in Figure 2 reveal a

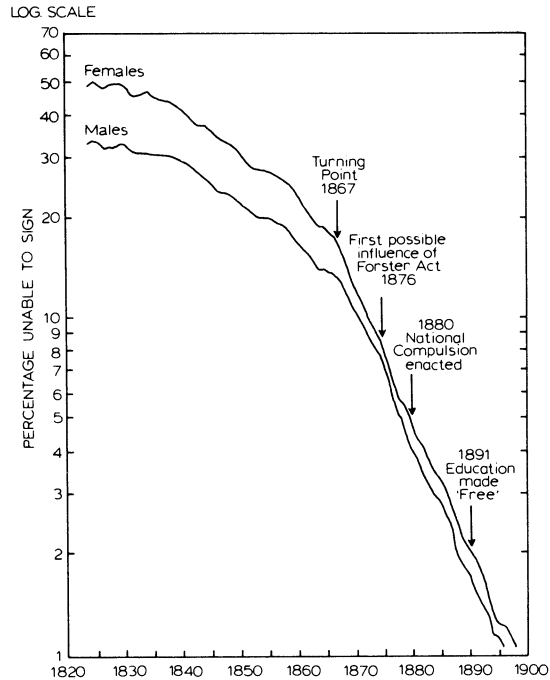


FIGURE 2. ANNUAL PERCENTAGE OF ILLITERATE MALE AND FEMALE SCHOOL LEAVERS AS DETERMINED BY THEIR INABILITY TO SIGN THE MARRIAGE REGISTER 15 YEARS LATER
Source: Registrar General of England and Wales, *Annual Reports*.

havior that the legislation intended to enforce emerged in the absence of such enforcement, and, according to our application of the Stigler-Becker analysis, it was the direct result of household responses to changes in relative shadow prices.

Finally, if we restrict our attention to economies operating within majority rule democracies, the question of the *potential* for coercion arises. Discussions regarding the imposition of tastes (merit goods) involve laws or regulations that must be made in the political sphere. We would not expect to witness situations where the bulk of the population imposes constraints on its own

"kink" showing the final surge effect in 1867 which is nine years before the 1870 Act could have had any influence. Note too that compulsion and free education did not come until 1880 and 1894, respectively. For further elaboration of these points, see West (1978).

behavior that imply wealth losses. Thus, laws compelling specific modes of behavior will, in general, arise after the vast majority have already adopted it from private motives (Stigler, 1972). This is supported by studies of compulsory schooling legislation in the United States,¹¹ and the evidence we describe above concerning the timing of legislation and literacy rates (Figure 2).

IV. Conclusion

The first purpose of this article has been to explore the contrasting nature of assumptions about tastes contained in merit good reasoning and in the Stigler-Becker analysis that postulates "de gustibus non est disputandum." The second purpose has been to offer an empirical test that might help us choose between the different hypotheses of the two schools. Scientifically (following Karl Popper, 1972), one can only say that theory *A* has a higher (or lower) degree of empirical corroboration than a competing theory *B*, in the light of critical discussion and testing. Accordingly, we conclude that, *at least in the context of the development of English education*, the Stigler-Becker theory has a higher degree of corroboration. Whether the merit good approach is an inferior predictor *generally* can only be eventually established by a series of further appeals to evidence similar to that offered here.

¹¹See William Landes and Lewis Solomon (1972) who demonstrate that legislation was not the cause of higher schooling levels. Further evidence is provided by West (1967) and Linda Edwards (1978).

REFERENCES

- Barzel, Yoram, "Rationing by Waiting," *Journal of Law and Economics*, April 1974, 17, 73–95.
- Borcherding, Thomas E., *Budgets and Bureaucrats*, Durham: Duke University Press, 1977.
- Brougham, Henry, *Third Report from the (Brougham) Select Committee on the Education of the Lower Order*, London, 1820.
- Edwards, Linda Nasif, "An Empirical Analysis of Compulsory Schooling Legislation, 1940–1960," *Journal of Law and Economics*, April 1978, 21, 203–22.
- Landes, William M. and Solmon, Lewis C., "Compulsory Schooling Legislation: An Economic Analysis of Law and Social Change in the Nineteenth Century," *Journal of Economic History*, March 1972, 32, 54–91.
- Landsburg, Steven E., "Taste Change in the United Kingdom—1900–1955," *Journal of Political Economy*, February 1981, 89, 92–103.
- Lindert, P. H. and Williamson, J. G., "Revising England's Social Tables 1688–1867," Discussion Paper Series in Economic History, University of Wisconsin-Madison, 1981.
- McKenzie, Richard M., "The Non-Rational Domain and the Limits of Economic Analysis," *Southern Economic Journal*, July 1979, 46, 145–57.
- Mill, John Stuart, *Principles of Political Economy*, New York: Kelley, 1969.
- Mitchell, B. R. and Deane, Phyllis, *Abstract of British Historical Statistics*, Cambridge: Cambridge University Press, 1962.
- Musgrave, Richard A., *The Theory of Public Finance*, New York: McGraw-Hill, 1959.
- and Musgrave, Peggy, *Public Finance in Theory and Practice*, 3d ed., New York: McGraw-Hill, 1980.
- Nichols, D., Smolensky, E. and Tideman, T. N., "Discrimination by Waiting Time in Merit Goods," *American Economic Review*, June 1971, 61, 312–23.
- Popper, Karl R., *Objective Knowledge*, Oxford: Clarendon Press, 1972.
- Schofield, R. S., "The Measurement of Literacy in Pre-Industrial Britain," in Jack Goody, ed., *Literacy in Traditional Societies*, Cambridge: Cambridge University Press, 1968.
- , "Dimensions of Literacy, 1750–1850," *Explorations in Economic History*, Summer 1973, 10, 437–51.
- Senior, Nassau, *Suggestions on Popular Education*, London: John Murray, 1861.
- Stigler, George, "Economic Competition and Political Competition," *Public Choice*, Fall 1972, 13, 91–106.
- and Becker, Gary S., "De Gustibus Non Est Disputandum," *American Eco-*

- conomic Review*, March 1977, 67, 76–90.
- Wardle, David**, *English Popular Education, 1780–1970*, Cambridge: Cambridge University Press, 1970.
- West, E. G.**, “The Political Economy of American Public School Legislation,” *Journal of Law and Economics*, October 1967, 10, 101–28.
- , “Resource Allocation and Growth in Early Nineteenth-Century British Education,” *Economic History Review*, April 1970, 23, 68–95.
- , (1975a) *Education and the Industrial Revolution*, London: Batsford, 1975.
- , (1975b) “Educational Slowdown and Public Intervention in 19th Century England: A Study in the Economics of Bureaucracy,” *Explorations in Economic History*, January 1975, 12, 61–87.
- , “Literacy and the Industrial Revolution,” *Economic History Review*, August 1978, 31, 369–83.
- Great Britain**, Registrar General of England and Wales, *Annual Report of Births, Deaths, and Marriages*, Parliamentary Papers, London, various years.
- , *Census of England and Wales*, 1851, Parliamentary Papers, Vol. 88, London, 1852–53.
- , Education Commission, *Report of the Commissioners Appointed to Enquire into the State of Popular Education in Britain (The Newcastle Commission)*, Parliamentary Papers, Vol. 21, London, 1861.