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ABSTRACT

This paper argues that for the century before Adam Smith, the starting point for Miller's treatment of the economics of education in classical economics, there had been vigorous discussion of the economic role of education in both Britain and France. The importance of this earlier period was that major capital investment in machinery had not yet taken place and correspondingly the concepts of 'capital' and 'profit' had not yet crystallised as distinct elements in the understanding of the economic process. For this reason theoretical discussion in the earlier period gave particular attention to issues of skill and professional knowledge and their acquisition and enhancement within and between generations. As well as a stress on moral education, in terms of governability, two trends have been identified concerning the economic utility of formal education. One, based on the assumption of an equality of potential, emphasised that the demand for various levels of education was determined by the broad economic structure and that the provision of education beyond these needs would not contribute to development but would lead to imbalances in the labour market. The other, which assumed the unequal distribution of natural genius, saw the need to ensure all such genius was captured and educated for the common good. In Mandeville's case his advocacy for the first perspective reflected both his distaste for the propagandist use of education by the Church of England as well as his emphasis on the importance of learning through practice in the process of work itself.

Introduction

In his article on the economics of education in *English Classical Economics*, Miller (1966: 294) provides a useful list of the topics discussed by these authors. The topics were: (1) education as investment in human beings (2) the economic goals of education (3) the effects of education on the distribution of income (4) the role of government and (5) techniques for increasing the efficiency of education. The present paper is complementary to Miller's in two ways. First, whereas Miller confines himself to discussion of English authors, here some attention is paid to the contribution of continental European, especially French, writers. Secondly, whereas Miller's starting point is Adam Smith, the present article considers the contribution of pre-Smithian authors.

Miller began his discussion of the classical authors by noting that most of those he considered did not display any great interest in the notion of education as investment in human beings. This, he added, did not mean that they were entirely unfamiliar with the concept. Adam Smith had suggested that "the surplus remuneration of skilled over common labour" could be regarded as "profit on a capital" while J R McCulloch had stated that: "Man is as much the produce of previous outlays of wealth expended upon his subsistence, education, etc. as any of the instruments constructed by his agency...". In Miller's view part of the reason why the classical economists failed to develop the idea of education as investment was that they took the view that, from the standpoint of individuals, expenditure on education was consumption expenditure rather than an investment. He also points out that the fact that different factors are owned by different social groups provided a justification for the separate treatment of land, labour and capital without adequate acknowledgement that these factors shade into one another.

Given that most of the authors considered by Miller did not regard the remuneration of labour as a return on human capital, Miller's treatment of investment in education and income distribution belong in separate sections of his paper. In this paper, this separation will not be made. The paper will begin with the consideration of the economic goals of education (Miller's section 2). This is followed by a discussion of the broader role of education in knowledge accumulation and development. The issue of investment in education and its consequences for income distribution are discussed in section 3. Finally, the role of government is considered in section four. Although the issue of quality is touched on at a

number of points in the paper, there is no substantial discussion of the issues relating to the efficiency of educational provision (Miller's section 5).

The Economic Goals of Education

The economic goals of education received a good deal of attention from the classical economists. As Miller notes, the general goal was an improvement of Welfare. Adam Smith and after him James Mill and Bentham saw education as a means of counteracting unfavourable influences of commercialization on the common people, of improving their moral fibre and increasing their knowledge generally (Miller, 1966: 296).

In a long section on education in the chapter on the expenses of the sovereign or commonwealth in Book V of the *Wealth of Nations*, Smith argued that the attention of government was necessary in order to prevent the corruption and degeneracy of the great body of the people (II:263). This was because with the progress of the division of labour, the employment of the far greater part of the people was confined to a few simple operations. Given that the understandings of men were formed by their ordinary employments, this meant that workmen lost the habit of mental exertion and generally became 'as stupid and ignorant as it is possible for a human creature to become' (II: 264).

Smith accepted that the common people would not be so well instructed as the rich. However, he argued that they could acquire the most essential parts of education: reading, writing and accounting in the period before they were ready for any work. Smith proposed that this could be done by providing small schools in every village along the lines of the existing charity schools. Instead of a smattering of Latin which, like Petty and Mandeville before him, he deemed inessential, Smith proposed that the children of the poor be instructed in the elementary parts of geometry and mechanics which were likely to be useful in most trades. (II:267). By encouraging and even imposing such education of the great body of the people, they would become less liable to 'delusions of enthusiasm and superstition' (269). They would become more decent and orderly, more likely to obtain the respect of their lawful superiors and therefore more disposed to respect those superiors. They would also be less apt to be misled into unnecessary opposition to government measures, something Smith regarded as being very important in free countries.

Smith's emphasis on useful education as well as his view that education would make working people more decent and orderly was carried forward by the Bentham and his supporters although their motivations were somewhat different. Bentham, himself, was concerned in the

first instance with the improvement of the education that was available to the growing middle classes. One of his aims was that of cultivating the skills necessary to read and understand periodicals and newspapers so as to enable the recognition of good government and an appreciation of its value. Another was to develop plans for instruction to prepare people for engagement in active business. In his *Chrestomathy*, Bentham set out a plan of instruction aimed at achieving these objectives. A preparatory stage was to be devoted to reading, writing and arithmetic, but, in subsequent stages, the emphasis was to lay heavily on the sciences and mathematics to the exclusion of subjects such as humanities and classical languages. (Itzkin, 1978: 306-7). Bentham's proposed Chrestomatic school never materialised but his followers played an influential role in the development and regulation of educational provision in England where they favoured the public provision over the denominational schools which were then current. According to West (1964, 1992), they claimed that state investment in education led to a reduction in crime and that the resulting reduction in expenditure on prisons more than offset any increased expenditure on education.

Like his fellow utilitarians, John Stuart Mill also believed that education produced important benefits and that it should be made compulsory. His views on the benefits of education were set out most fully in the chapter on determinants of the productiveness of productive agents in his *Principles of Political Economy*. There, he argued that productiveness of labour in any community depended on the skill and knowledge of the labourers themselves as well as that of those who directed their labour (Mill, 1909: 107). It was self-evident in Mill's view that the productiveness of the labour was limited by its technical knowledge and, in this context, Mill referred to Babbage's explanation of the manner in which the invention of tools and machinery served to increase production and economize on labour (ibid.). The diffusion of general intelligence amongst the people was also important as there was a shortage of people capable of superintending industrial enterprise and of exercising the judgement that was necessary when production processes could not be reduced to routine. It also improved the flexibility of labour and its ability to learn new tasks. (Mill, 1909: 108-9). These benefits led Mill to conclude that popular education was well worth of the attention of politicians, especially in England (Mill, 1909: 109). For Mill, education improved not just the efficiency of labour but also its moral trustworthiness. Evidence annexed to the report of the Poor Law Commissioners in 1840, supported the view that better educated workmen were 'distinguished by superior moral habits in every respect' (Mill, 1909: 110). These moral qualities were fully as important to the efficiency of labour as the intellectual qualities. All

the labour expended on monitoring and verifying work was labour withdrawn from the real business of production and this waste could be avoided if labourers honestly performed what they undertook (Mill, 1909: 111). While making a strong case for the merits of education in terms of inculcating superior moral habits in the *Principles*, in his writings on liberty, Mill expressed lamented the loss of diversity which was promoted by the extension of education as well as other factors such as improved communications, increases in commerce and manufactures and political developments (Mill, 1985: 138-9). Mill feared that a general state education was ‘a contrivance for moulding people to be exactly like one another’ (Mill, 1985: 177). It would, he argued: establish ‘a despotism over the mind, leading by natural tendency to one over the body’ (ibid.). While Mill favoured a wide diffusion of education amongst the labouring class, he also maintained strong elitist views. ‘I insist’, he wrote, on the importance of genius and the necessity of allowing it to unfold itself freely’ (Mill, 1985: 130). He expressed concern that individuals were becoming ‘lost in the crowd’, that governments had become ‘the organ of the tendencies and instincts of the masses’ (Mill, 1985: 131). No government Mill opined, ‘could rise above mediocrity except in so far as the sovereign many have let themselves be guided... by the counsels and influence of the more highly gifted and instructed *one or few* (Ibid.).

While the classical economists, from Smith onwards, generally took a positive view of the contribution of education to economic and social development, some early writers on educational matters had challenged the view that more education was necessarily conducive to greater economic and social development. The most notorious contribution in this direction was *The Essay on Charity and the Charity Schools* which was added to the 1823 edition of Bernard Mandeville’s *Fable of the Bees*. Described by Joseph Addison (*Guardian* July, 11, 1713) as ‘the glory of the age we live in’, the schools were the fashionable charity of the early eighteenth century. As Mandeville noted, great claims were made with regard to the value of the schools. It was argued that the religious education and training in manners and civility provided in them promoted moral improvement and lessened crime. Mandeville was not convinced. Parents, he argued, had much more influence on children’s behaviour than did the schools, but, in any case, the experience of 1720 had shown that a good education was no guarantee against the deepest villainy. Stupidity and ignorance were not the causes of crimes—bold crimes were generally perpetrated by rogues of spirit and genius and were functions of circumstances and opportunity. Mandeville acknowledged that part of the charm of the schools was people’s belief that by supporting them, they were doing something good (FBI:

284). To counter this, Mandeville declared his intention to show that this forced education was pernicious to the public.

The core of Mandeville's argument was that any thriving society required a good deal of hard and dirty labour. Nobody would want to do that labour if they could avoid it. The more knowledge the workman had beyond that which was required for his employment, the less fit and the less willing he would be to put up with its fatigues and hardships. Reading, writing and arithmetic were necessary qualifications in some occupations but where they were not necessary the time spent in acquiring them was time lost to society (FBI: 288). Besides, those who spent a large proportion of their youth in learning to read, write and cypher quite reasonably expected to be employed where those qualifications would be of use to them and would not willingly work in the lowest station of life (FBI: 289). As a result, the proportion of society was spoilt because there were insufficient numbers to do the hard laborious work and too many wishing to do the less onerous forms.

Mandeville's denunciation of the Charity Schools should not be taken to mean that he thought that education was unimportant. Especially in his later work, he emphasised the central importance of education for the transmission of habits of virtue and politeness and all other forms of useful knowledge. Persons who were educated learned to 'tie themselves up to rules and decorums for their own advantage, and often to submit to small inconveniences to avoid greater' (II: 306). Development went forward because each generation made innovations which were added to what had been learnt from the previous generation.

The knowledge of parents is communicated to their offspring, and everyone's experience in life, being added to what he learned in his youth, every generation after this must be better taught than the preceding. (II: 145-6).

In the final pages of the essay, Mandeville praised Peter the Great for his efforts in educating his people. Such action was necessary in Russia because it lacked the number or variety of tradesmen and artificers which were necessary for improvement. The case of England was different. While Russia had too few knowing men, England had too many. What is clear from this is that Mandeville's attack on the charity schools was not an attack on education per se but on a particular form of schooling which was of doubtful quality and whose real purpose was, he believed, to strengthen the Tory party and to inspire veneration for the clergy of the Church of England (FBI: 309). Regardless of this, however, he raised important

questions about the relationship education and economic development which continue to be matters of debate (Chang, xxx; Tan, 2014; Wolf, 2002).

In Mandeville's own time, the question was considered by Richard Cantillon in Chapter IX of Part I of his *Essai*. The chapter was mainly concerned that the number of labourers, handicraftsmen and others who work in a state is naturally proportioned to the demand for them. Given that this was the case, Cantillon concluded that the Charity-Schools in England and the proposals in France to increase the number of handicraftsmen were useless. As he put it, if the King of France sent 100,000 of his subjects to Holland to learn seafaring, it would be useless if no additional vessels were sent to Sea. Cantillon did allow that a state might benefit if its subjects learnt how to produce manufactures which were normally imported. However, this was not the issue that was under consideration in the relevant chapter.

Knowledge Accumulation and Development

In order to better understand Mandeville's position, it will be useful to attend to a stream of thought on this subject which is not much appreciated in the literature. This is the role of education in its broadest sense in the development and accumulation of human knowledge. The idea came into vogue in the seventeenth and eighteenth centuries but appears be considerable antiquity – Baglivi cited Galen as his source and was, in turn, cited by Mandeville. The first modern exposition appears in the Preface to Blaise Pascal's *Treatise on Vacuum* (1651). Pascal explained why knowledge was cumulative in the sciences that were subject to experiment and reasoning and argued that it was this ability to accumulate knowledge that differentiated men from animals (Pascal, 1910: 448).

[Man] is ignorant at the earliest age of his life; but he is instructed unceasingly in his progress; for he derives advantage, not only from his own experience, but also from that of his predecessors; since he always retains in his memory the knowledge which he himself has once acquired, and since he has that of the ancients ever present in the books which they have bequeathed to him. And as he preserves this knowledge, he can also add to it easily;not only does each man advance from day to day in the sciences, but all mankind together make continual progress in proportion as the world grows older, since the same thing happens in the succession of men as in the different ages of single individuals. So that the whole succession of men, during the course of many ages, should be considered as a single man who subsists forever and learns continually (Pascal, 1910: 449)

Views similar to those of Pascal relating to the cumulative development of human knowledge were put forward by Fontenelle (1657-1757), Secretary of the French Academy and by his friend and contemporary, Abbe St Pierre (1658-1743). St Pierre argued that progress of the physical sciences had made considerable headway and had added to the arts and conveniences of life but ethics and politics which were more important for the promotion of human happiness had been neglected. This, he argued, could be rectified if the ablest men devoted themselves to these sciences so that appropriate social reforms could be identified and the implementation of these by enlightened government would allow society to progress indefinitely.

The focus on the accumulation of knowledge was continued in the early writings of Turgot (1727-1781). In *A Philosophical Review of the Successive Advances of the Human Mind*, Turgot contrasted the phenomena of nature which were governed by constant laws with the 'ever-changing spectacle' of the succession of mankind.

'[A]ll ages are bound up with one another by a succession of causes and effects which link the present state of the world with all those that have preceded it. The arbitrary signs of speech and writing, by providing men with the means of securing possession of their ideas and communicating them to others, have made of all the individuals stores of knowledge a common treasure-house which one generation transmits to another, an inheritance which is always being enlarged by the discoveries of each age'. (Meek, 1973: 41).

The argument is repeated in the introduction to Turgot's *Plan of the Discourses on Universal History* (Meek, 1973: 63) the second discourse of which relates to the progress of the human mind. In Turgot's view, progress although inevitable, was intermingled with frequent periods of decline and also varied between nations. Turgot rejected the view that this was due to differences in climate and argued that more or less rapid progress was a function of circumstances and genius or aptitude. A large population would be expected to include a large number of people of exceptional genius. But genius on its own was not enough; education and other circumstances were necessary for genius to flourish. The combination of genius and opportunity give rise to differential progress between men and between nations. Once labour was divided according to men's aptitudes, the unequal division of goods and

social responsibilities meant that the majority who were employed on rough and lowly work were unable to make the same progress as other men (Meek, 1973: 89). Hence

Education brought about an even greater difference between the various parts of one and the same nation than did wealth, and as between different nations it was the same. (Meek, 1973: 89)

Once a nation got an advantage in terms of its knowledge, its progress accelerated from day to day while that of more backward nations remained immobilised.

Condorcet's (1743-1794) *Sketch for a Historical Picture of the Progress of the Human Mind* was written 1793 while he was imprisoned by the Robespierre faction of French revolutionaries. The work was intended to trace the cultural and intellectual progress of the human race from the earliest times until the formation of the French Republic. The final chapter was devoted to a discussion of the future progress of the human mind. Condorcet was of the view that fortunes would naturally tend to equality if the law had not privileged some by means of endowments and regulations. Like his mentor, Turgot, he believed that freedom of commerce would lead to greater equality and that the several causes of inequality reinforced each other. Unlike Turgot, Condorcet concluded that this meant that remedies such as education could be more potent in their effect.

If instruction become more equal, industry thence acquires greater equality, and from industry the effect is communicated to fortunes; and equality of fortunes necessarily contributes to that of instruction, while equality of nations, like that established between individuals, have also a mutual operation upon each other. (Condorcet, 1796: 265-6)

As far as the amelioration of the human race is concerned, Condorcet thought that new discoveries in the sciences and the arts¹ would continue to be made, and, that as a consequence, there would be improvements in the means of individual and general prosperity. As new discoveries are made, they are gradually simplified and integrated with existing knowledge so that they can be grasped by those of ordinary capacity. Hence, the progress of the sciences allowed progress of the art of instruction, which, in turn, accelerated the progress of the sciences. As a result of better organisation of the knowledge that had been achieved, in every generation, 'what may be acquired in a given space of time, by the same strength of intellect and the same degree of attention, will necessarily increase' (Condorcet, 1785; 285).

As we saw above, Pascal, Fontanelle and St Pierre had developed theories of progress based on the accumulation of scientific knowledge. In England, Bernard Mandeville developed a more comprehensive theory of progress encompassing practical as well as theoretical knowledge.

To men who never turn'd their thoughts that way, it certainly is almost inconceivable to what prodigious height, from next to nothing, some arts may be and have been raised by human industry and application, by the uninterrupted labour and joint experience of many ages, though none but men of ordinary capacity should ever be employed in them.....yet it is certain that this task would be impracticable, if it was not divided and subdivided into a great variety of different labours; and it is certain that none of these labours require any other, than working men of ordinary capacities. (Mandeville, II, pp.141-2).

The restless industry of man to supply his wants, and his constant endeavours to meliorate his condition upon earth, have produced and brought to perfection many useful arts and sciencesto which we can assign no other causes, than human sagacity in general, and the joint labour of many ages, in which men have always employed themselves in studying and contriving ways and means to soothe their various appetites, and make the best of their infirmities. (Mandeville, 1924, II, pp. 128)

Mandeville insisted that innovations were made not by theoreticians but by active, stirring and laborious men who put their hand to plough and tried experiments. He pointed to the difference between knowing a violin when you see it, and knowing how to play upon it and, like contemporaries such as Swift, he adopted the Baconian criticism of the separation of reason from practice (Mandeville, 1730, pp. 129-30).

Mandeville's emphasis on activity rather than book learning as the source of innovation implies that what matters for progress is education in its broadest sense. This includes socialization, training and apprenticeships, learning by doing as well as formal schooling and professional training. It implies a weaker role for formal education than that implied by Turgot and Condorcet whose focus is more on knowledge per se. However, it is important to note that from Fontenelle onwards, the work of the French authors situated scientific advance with a broader socioeconomic context.

As Roy Pascal and Ronald Meek have shown, a staged view of cumulative development can also be found in the Scottish authors of the mid to late eighteenth century including Adam Smith, William Robertson, Adam Ferguson and James Millar. In his *Essays on the History of Civil Society* (1763, p.7) and, somewhat later, in his *Principles of Moral and Political Sciences*, 1792, Adam Ferguson outlined a vision of cumulative development according to which:

The state of nature relative to the species.....consists in the continual succession of one generation to another; in progressive attainments made by different ages; communicated with additions from age to age; and in periods, the farthest advanced, not appearing to have arrived at any necessary limit.....

So long as the son continues to be taught what the father knew, or the pupil begins where the tutor has ended, and is equally bent on advancement, to every generation, the state of art and accommodation already in use serves but as ground work for new inventions and successive improvement.

(Ferguson, *Principles of Moral and Political Science*, pp.192-5)

All of the above authors had a cumulative view of development in which each generation built on what it inherited from the previous generation. Education in its broadest sense had a key role to play in the transmission of knowledge and practices from one generation to the next. Some such as William Petty, Turgot and J S Mill gave a role to individual talent or genius alongside education. Others including Mandeville, Smith and Helvetius made the assumption that men were naturally equal and that any differences between them were the product of education and life experience. As Adam Smith famously put it: ‘the difference between the most dissimilar characters, between a philosopher and a common street porter, for example, seems to arise not so much from nature, as from habit, custom, and education’ (WN.I.ii.4). Likewise Helvetius: ‘The great inequality of mind observable in mankind, therefore, only depends on the different education they receive and the unknown and varied chain of circumstances in which they are placed.’ (Helvetius, 1759: 220). These two views have different implications. Both recognised the importance of investment education and training. Both could recognise that the outcome for individuals depended on their educational opportunities. However, if individual genius also matters then the failure to provide opportunity to all who may possess particular genius may have implications for the efficiency of outcomes.

Income Distribution

Authors for whom the difference between those in various occupations was produced rather than natural could be regarded as having something in common with the human capital approach in so far as they emphasised that higher costs of production of skilled labour required higher wages as compensation. The conception of economic man not just as an exchanger but as ‘an entrepreneur of himself’, to use Foucault’s characterization of the human capital approach, was actually more appropriate in an institutional setting in which craftsmen were in fact independent entrepreneurs than in one in which wage labour is the dominant form.

In his earliest writing Mandeville linked the education of youth to the perpetuation of trades in the economy.

In the education of youth, in order to their getting of a livelyhood when they shall be arrived at maturity, most people look out for some warrantable employment or other..... By this means all arts and sciences, as well as trades and handicrafts, are perpetuated in the commonwealth, as long as they are found useful, the young ones that are daily brought up to them, continually supplying the loss of the old ones that die. (Mandeville, 1924, I, p.58)

Later in the essay on the charity schools, he emphasised that parents choosing a trade for their children devoted a great deal effort to the choice of trade. The trade chosen had to be such that they could afford the relevant fees but they also sought to choose the trade most likely to be advantageous for their children. One of his complaints against the charity schools was that the governors did not deliberate on which trade was best for the children in their care; their priority was to find tradesman willing to take on the boys (FBI: 300). As a consequence, some trades were overstocked while others were undersubscribed. This was destructive to the harmony of the nation which was never better kept than when no one interfered with it.

Mandeville also gave further consideration to the workings of the labour market in volume two of the Fable noting that regardless of the value men set upon themselves, labour which most people are capable of doing would always be the cheapest while that which required long training or particular genius would command higher remuneration.

Nothing can be dear, of which there is great plenty.... And scarcity enhances the price of things much oftener than the usefulness of them. Hence it is evident why those arts and sciences will always be the most lucrative that cannot be attained to, but in great length of time, by tedious study and close application; or else require a particular genius, not often to be met with. (Mandeville,1924, II: 350).

Education and experience were conceived as important not just for individual development but for the wider possibility of progress. Before the advent of the factory system and the employment of machinery on a large scale, progress was seen as being based on the accumulation of knowledge rather than the accumulation of capital. Such accumulation required the transmission of knowledge from one generation to the next and in this transmission education in its broadest sense had an important role to play. As we shall see, the classical authors approached this from two perspectives: the macro or developmental perspective on the one hand and the micro on the other. The latter perspective has something in common with modern theories of human capital although it is fair to say that despite its individualistic approach the ambitions of human capital theory go well beyond the purely micro level.

Despite Mandeville's clear statements linking remuneration and training and his assertions with regard to the equilibrium of the labour market, no adequate justification is provided by him. However, a very precise discussion of these issues can be found in Chapters VII to IX of Richard Cantillon's *Essay on the Nature of Trade in General*. Chapter VII clarifies why the labour of the husbandman is of less value than that of the handicraftsman. Cantillon explains that if the husbandman puts his son to a trade, he loses his assistance and must pay the expenses of his apprenticeship. Given that the working life of a man was 10-12 years, a husbandman would never be willing to put his son to a trade if mechanics did not earn substantially more than labourers (Cantillon: VII). In Chapter VIII, Cantillon discusses the operation of the market using the example of a village with two tailors. One may attract more customers than the other if he does better work. If one dies, the other will be able to raise his price or give priority to some customers. As a result some villagers will find it to their advantage to make purchases elsewhere until such time as another tailor comes along. While the vicissitudes of the market may influence the earnings of handicraftsmen, the general rule is that those crafts which require the longest training or greatest ingenuity must be the best

paid. In Chapter IX, Cantillon explains that the number of labourers, handicraftsmen and others who work in a state is naturally proportioned to the demand for them. If the labourers of a village have several sons, there will be too many to cultivate the lands. The surplus adults must migrate elsewhere to find work. If they do not, they will live in poverty and be unable to support children. The argument also applies to handicraftsmen. If they have no work, they will quit their village. On the other hand, if there is a continuous increase of work, there is gain to be made and handicraftsmen will arrive from elsewhere to share it. On the basis of these arguments, Cantillon concluded with the criticism of the charity schools already referred to above.

For Mandeville and Cantillon, the costs of training were a cost that had to be covered by the remuneration in the particular trade, there was no suggestion that the remuneration in question was a return on a particular form of capital. Adam Smith went somewhat further in that direction. Having noted that the acquisition of useful abilities always cost a real expense ‘which is a capital fixed and realized, as it were, in his person. The improved dexterity of a workman may be considered in the same light as a machine or instrument of trade which facilitates and abridges labour, and which though it costs a certain expense, repays that expense with a profit.’ (WN.II.i.17).

Smith explained the mechanism involved in the following terms:

When any expensive machine is erected, the extraordinary work to be performed by it before it is worn out, it must be expected, will replace the capital laid out upon it, with at least the ordinary profits. A man educated at the expense of much labour and time to any of those employments which require extraordinary dexterity and skill, may be compared to one of those expensive machines. The work which he learns to perform, it must be expected, over and above the us, will replace to him the whole expense of his education, with at least the ordinary profits of an equally valuable capital. It must do this too, in a reasonable time, regard being had to the uncertain duration of human life , in the same manner as the more certain duration of the machine.

Adam Smith enumerated a number of other sources of variation. These included the ease or hardship of the work; the constancy or inconstancy of employment; the greatness or otherwise of the trust reposed in the workmen and the probability or improbability of success (WN.IX.part I). Whereas Cantillon simply reported seven years as being the normal length of apprenticeship, Smith argued strongly that seven years was altogether unnecessary, that it

was no guarantee of adequate workmanship; that a young man was more likely to learn his trade if he could gain in the process of doing so and that it had no tendency to form young people to industry because apprentices derived no benefit from greater exertion. These long apprenticeships were an aspect of the incorporation of traders which was practiced in Europe and had the effect of restraining competition in some employments to a smaller number than would be otherwise disposed to enter into them (WN.I.X. part II). Another aspect of policy in Europe was identified as increasing competition in some employments beyond what it naturally would be. Here was referring to the fact that young people who were being educated for certain professions such as that churchmen were often supported by means of pensions, exhibitions, scholarships and bursaries provided either from the public purse or by the donations of private people. This allowed large numbers to enter the profession who in order to get employment were willing to accept a lower remuneration than the length of their education might have otherwise entitled them to (Smith, 1924:118). A third aspect of the policy of Europe which, in Smith's view, led to distortions of the labour market was the settlement laws. These along with the apprenticeship regulations prevented the free circulation of labour from place to place and from one employment to another (Smith, 1924 I: 123-30).

As notes in the introduction, human capital theory did not feature as an explanation of wage differentials in the writings of most classical economists after Smith. J.R. McCulloch followed Smith more or less to the letter in spelling out the causes of wage differentials. He supported his discussion of the human capital with the following example:

Suppose that the education of a skilled labourer—a jeweller, or engraver, for example—and his maintenance down to the period when he begins to support himself, cost 300*l.* more than is required for the maintenance of an unskilled labourer down to the same period: it is plain that, to place these individuals in the same situation, the skilled labourer should earn as much, over and above the wages earned by the one that is unskilled, as may be sufficient, not only to yield the usual rate of profit on the extra sum of 300*l.* expended on his education, but also to replace the sum itself, previously to the probable termination of his life. If he obtain less than this, he will be underpaid, and if he obtain more he will be overpaid, and there will be an influx of new entrants into his business, until their competition has reduced wages to their proper level. (McCulloch, 1864: 305-6)

McCulloch also discussed possible causes of the low earnings of scientific and literary men which he attributed to the durability of their products. Commenting on the same issue, J S Mill attributed it to the fact that many of those involved in these occupations were of independent means. He also raised issues such as the lack of social mobility which gave rise to a quasi-caste system in the various trades and professions (Miller, 1966: 303).

The Role of Government in Education

Bernard Mandeville is often viewed as a pioneer of laissez-faire based on his warnings about the harmful effects of meddling. However, Mandeville's complaints about meddling referred to the actions of fashionable do-gooders rather than government. Moreover, he repeatedly insisted that private vices were turned into public benefits by the 'dexterous management of the skilful politician'. While he would discourage and even hinder a multiplicity of petty schools with poor quality teaching, he proposed that each country should be provided with one or more large schools erected at public charge for Latin and Greek (Mandeville, 1924, I: 295). In order to encourage more relevant education and more diligence on the part of the professoriate in the universities, he proposed that, in addition to their publically provided stipends, professors should receive part of their pay directly from students as well as several other reforms – a view which was later endorsed by Adam Smith. Generally he appears to have assumed that parents could be relied upon to provide for their children's education in so far as it was within their means and, as we saw earlier, he thought that no good would come of forcing education on the poor.

We saw also that Adam Smith argued that the attention of government was necessary in order to prevent the corruption and degeneracy of the great body of the people and that this might be done 'by encouraging and even imposing' more education. However, Smith seems to have regarded the charity schools as a solution to the problem of provision.

In the chapter on the limits of government in his *Principles of Political Economy*, J S Mill argued that the business of life was generally better performed when those who have an immediate interest in it are left to take their own course (Mill, 190-9: 953). Whereas in the case of material objects, it could be presumed that the consumer was a competent judge of a commodity, this was the case with education (Mill, 1909: 953). The uneducated were not in a position to recognise their need for education and even if they did they could not adequately judge its quality. Mill considered it desirable that that all children have access to certain primary elements and means of knowledge. Failure by parents to provide them with this

opportunity would impose a cost on the children themselves and the community at large. Consequently, Mill was of the opinion that government should have the power to impose on parents the legal obligation of providing elementary instruction for their children. This, in turn, meant that steps had to be taken to ensure that such instruction was accessible to them free of charge or at very moderate cost (ibid. : 954). Charitable provision was not adequate in quality or quantity for this purpose. It was therefore the duty of government to ensure supply by providing pecuniary support for the provision of elementary schools. Sometimes, it was necessary for government to establish schools and colleges but Mill was adamant that government support for education should not mean a government monopoly (Mill, 1909: 956) even though he acknowledged that government teachers were on average superior to private instructors. For government to have complete control over education was in Mill's opinion despotic. Individuals should have the power to set up rival establishments. Government was justified in requiring from all the people a certain basic level of education but not, according to Mill, in prescribing how and from whom they should obtain it. (Mill, 1909: 956; 1985: 175-9).

Modern theorists of human capital also accept a role for government in education provision. Like Mill they attribute the need for intervention to imperfections in the market. Because human capital inheres in human beings, it cannot be offered as collateral for loans to cover the cost of education and training. This creates difficulties for poor people who don't have other forms of capital to invest in themselves and causes underinvestment in human capital relative to physical capital. Becker, for example accepts, that the neglect of this part of the population is not only inequitable, but also inefficient and that, consequently, there is a strong case for support. Friedman (2002: 99) argues that such support should be delivered not through taxpayer funding for higher education but in the form of loans which would make capital available at comparable terms for human and physical investment (Friedman, 1955). While he saw loans as an appropriate solution to underinvestment in the case of vocational education, Friedman accepted that there was a case for direct subsidization of courses that were relevant to social and political leadership. Some of his proposals had much in common with those of Mill in that he advocated support for education not through direct provision but through funding.

Authors such as the philosopher, Michel Foucault have found in modern human capital theory the basis for a theory of government as opposed to a theory of the state. In contrast to classical liberalism, neoliberalism based on the idea of the human being as an entrepreneur of

himself involved a mode of governmentality which operated on interests, desires, and aspirations rather than through rights and obligations. Such forms of governmentality involve the development of indirect techniques for leading and controlling individuals without at the same time being responsible for them. They involve power without coercion. This clearly has an ideological function but whether it is entirely new is another matter. As Mandeville was aware, we can evaluate the individual actions and well-being from the point of view of the social whole or 'we can turn the prospect' and look on all those labours as so many voluntary Actions, belonging to different callings and occupations that men are brought up to for a livelihood, and in which everyone works for himself, how much soever he may seem to labour for others. The point is to arrange the institutional framework so that the voluntary actions and social need coincide.

Conclusion

This paper has argued that for the century before Adam Smith, there had been vigorous discussion of the economic role of education in both Britain and France. Before the advent of the factory system and the employment of machinery on a large scale, progress was seen as being based on the accumulation of knowledge rather than the accumulation of capital (Prendergast, 2010). Such accumulation required the transmission of knowledge from one generation to the next and in this transmission education in its broadest sense had an important role to play. The classical authors approached this from two perspectives: the macro or developmental perspective on the one hand and the micro on the other. The micro perspective has something in common with modern theories of human capital although, in consideration of its consequences, it remained conditioned by macro factors.

As well as a stress on moral education, in terms of governability, two approaches to the economic utility of formal education were identified. One, was based on the assumption of an equality of human intellectual endowment. It saw men as the products of circumstances and education. Some who took this point of view regarded education as a means of changing the economy and society for the better whereas others such as Mandeville saw dangers in education that went beyond the needs of society. The other, approach focused on the importance of natural genius and assumed that it was unequally

distributed. Given its importance to society, economic efficiency required the identification of genius and its development for the common good.

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ⁱ Condorcet believed that the view that progress in the arts was necessarily limited was no more than a prejudice (Condorcet, 1795: 282).