

BEHAVIOURAL ASSUMPTIONS IN NASSAU SENIOR'S ECONOMICS

ANASTASSIOS D. KARAYIANNIS*

Department of Economics, University of Piraeus

Behavioural assumptions in the form of psychological and/or socio-economic human motives in examining and explaining economic phenomena, situations and trends were used by the time of the mercantilists. A leading figure in this methodological approach, particularly during the classical period, was Nassau Senior. In the present article, after presenting relevant ideas and arguments in regard to special human behaviour employed by some outstanding authors before Senior, the analysis is directed towards exploring the role of the two main motives that he stressed: the motive for variety, and the motive for distinction. It is concluded that Senior deserves a tribute for developing an important framework of the various influences of specific human behaviour on some economic variables.

Behavioural assumptions in the form of psychological and/or socio-economic human motives in examining and explaining economic phenomena, situations and trends were used by the time of the mercantilists. A leading figure in this methodological approach, particularly during the classical period, was Nassau Senior. Whilst other classicists used behavioural assumptions in their writings, such as wealth and profit motives, Senior elaborated on the behavioural assumptions much more and influenced later eminent economists, such as Jevons and Marshall. More specifically, Jevons (1871, pp. 40, 53-4; see also White, 1992, pp. 69-70) used Senior's 'Law of Variety' to justify his theory of the 'variation of the final degree of utility'. Marshall (1890, pp. 73-5, 77, footnote 1, 89-90; see also Chasse, 1984) was directly influenced by Senior in the formation of his analysis of human wants and its effects on the elasticity of demand and economic growth.

This recognition of Senior's behavioural approach prompted us to study his ideas and arguments in relation to the role of various human motivations in economic structure and growth. In the first section we present relevant ideas and arguments in regard to special human behaviour employed by some outstanding authors before Senior. We then direct our analysis towards exploring the role of the two main motives that he stressed: the motive for variety, and the motive for distinction. These behavioural

* I wish to thank Stavros Drakopoulos (University of Athens) for his valuable comments and suggestions on an earlier draft of this article.

factors will be examined in the consumption (Section 3) and in the production side of economy (Section 4). Although Senior did not repeatedly take special notice of these motives, it is shown that they were present and implicitly used in the clarification of some important aspects of his analysis. The overall conclusion is that he deserves a tribute for developing, although in an unorganized and rather inadequate manner, an important framework of the various influences of specific human behaviour on some economic variables.

I. SOME EARLY INCORPORATIONS OF BEHAVIOURAL ASSUMPTIONS IN ECONOMICS

The desire of wealth and self-interest motives were well-recognised and incorporated

into economics by various authors of the 17th and 18th centuries (e.g. Hobbes, 1651, pp. 93-5; see also Chalk, 1951). These two behavioural constructions have been used in explaining at least the following causal structure:

1. To justify the need for the improvements of labourers' material condition through its effects on the rate of work effort—the so called 'aspiration effect'.¹

For example, Defoe (1728, pp. 21, 23, 25-6, 37-8) contended that a high wage rate will increase the rate of work effort and the total demand in economy. Similarly, Sir James Steuart claimed that 'it is the multiplicity and complexity of wants which give an encouragement to agriculture, and not agriculture, or an abundance of food, which inspires mankind with a disposition to labour' (1767, vol. 1, p. 131; see also *ibid.*, pp. 48-9, 163, 167). The role of the motive for luxury consumption in increasing the work effort and wage rate of labourers was also emphasised in the writings of North (1691, p. 14), Locke (1692, pp. 58-9), Mandeville (1723, p. 154), Hume (1770, p. 14), and Smith (1776, p. 181).²

2. To show the beneficial effects of increased demand in the level of economic development.

The positive effect on demand by the want for variety of consumption (mainly luxury) goods, has been put forward by Smith. He commented (1776, p. 181) that although the capacity of the human stomach is limited, the desire of man for the consumption of a variety of goods 'seems to have no limit or certain boundary'.

3. To interpret the function of the self-interest motive as a mechanism for the promotion of the general welfare.

This was mainly accomplished by Mandeville (1723, pp. 85-86, 118, 157) and Smith (1762-3, pp. 348-9; 1776, pp. 26-7).

¹ The aspiration effect has been denned by Eagly (1961, p. 53) as the increase in 'the average product of labour resulting from an increase in the population's level of aspiration for material goods'.

² Perrotta (1997) has adequately shown that in 18th-century economic literature, the mechanism of the increased consumption as an incentive for the advancement of labourers productivity was well recognised and extensively employed.

Furthermore, some authors recognised a more delicate consumers' behaviour explained by special motives, such as the preference for the consumption of a variety of luxury goods and the motive for self-distinction. For example, Locke considered fashion, which influenced the demand pattern, as being an instrument for self-distinction: 'Fashion is, for the most part, nothing but the ostentation of riches, and therefore the high price of what serves to that, rather increases than lessens its vent' (1692, p. 59). J. J. Rousseau similarly explained the preference for luxury consumption arguing that 'all that multiplicity of objects of luxury, amusement, and idleness, which strike the eyes of all, . . . can the less be hidden, as their whole purpose is to be seen, without which they would be useless' (1758, p. 152). Smith also noticed that 'the chief enjoyment of riches consists in the parade of riches' (1776, p. 190), and thus 'the rich not being able to distinguish themselves by the expense of any one dress [when its price has been decreased], will naturally endeavour to do so by the multitude and variety of their dresses' (*ibid.*, p. 686).

From the previous citations it can be deduced that at the beginning of the 19th century the ground was ripe for a more sophisticated incorporation of behavioural assumptions in economics. This task was mainly undertaken by Senior.

Senior explicitly emphasised the variety of human motives more than any other classical economist (including J.S. Mill) in justifying his methodological views, not

only in regard to the character of economics, but also in the way that its premises may be deduced (Bowley, 1937, pp. 45, 49, 60-1). The incorporation of behavioural assumptions into the main body of economic theorizing is accomplished by Seniors' using the methodological device of introspection or the 'matter of consciousness' in investigating important economic phenomena. He also stressed the usefulness of some well specified assumptions derived as a 'matter of observation' in establishing the 'four elementary propositions of the science of political economy' (Senior, 1836, p. 26). He argued that in human sciences the deduction of general premises about human behaviour is based upon the scientist's introspection (1852, p. 27). Thus, the scientist 'explains, as fully as his knowledge will allow, the motives which induce the mechanist to erect the steam engine, and the labourer to work it. And these are laws of mind' (1852, pp. 33-4).

Senior seems to have used human motives to explain the human economic action as Mandeville (1723, p. 91) proclaimed, saying 'that it is impossible to judge of a Man's Performance, unless we are thoroughly acquainted with the Principle and Motive from which he acts'.¹ Senior, implicitly using the effectual relationship between human emotion, goals and actions, explained some important economic effects and changes produced upon the direction and the rate of particular economic variables. He used, apart from the 'desire for wealth', two additional human motives, which not only are behind it and determine its strength, but also function autonomously in explaining some economic effects relevant to a particular economic environment, such as the

¹ Human motives have been treated similarly by modern scholars. For example, Katona (1975, p. 44), denned human incentives as 'the forces that pull the organism in a certain direction, toward certain ends and goals'.

capitalist mature economy: (a) the motive or the preference for the consumption of variety of goods; and (b) the motive for social and economic distinction. Let us see more extensively the way in which he incorporated such behavioural variables in the consumption and production sides of his economic analysis.

II. CONSUMER'S BEHAVIOUR AND VARIETY-DISTINCTION MOTIVES

Senior, under his main thesis that individuals are egotistically activated, tried to develop a more general theory of value than that of Ricardo. One step toward this direction was the inclusion of the factor of utility in those determining the value of goods.¹

Senior instead considered the wants of consumers as simple given data, and attempted to inquire how they are formed. He claimed that 'of the three conditions of value, utility, transferableness, and limitation in supply, the last is by far the most important' (1836, p. 11). The 'limitation in supply', according to Senior, is produced by the scarcity of the factors of production and is influenced by 'two of the most powerful principles of human nature, the love of variety, and the love of distinction' (1836, p. 11; see also Bowley, 1937, p. 97). He considered (1836, p. 12) the motive for distinction to be superior to that for variety, without, however, explaining the reason.² The existence and function of this motive for distinction had been noticed in the literature before 1836. Senior himself had already recognised it in his earlier works stating that: 'the principal sources of happiness are the social affections' (1826, p. 14), and 'in the progress of civilization,... wealth becomes the principal means of distinction and influence' (1831, p. 42). This motive, however, had been identified also by

Bentham, who commented not only on the motive for wealth or 'a pleasure of possession' (1789, p. 34), but also upon 'the love of reputation' (1789, p. 108). Also, Malthus (1814, p. 118) recognised the want for distinction as an incentive for increased productivity.

Senior used four main postulates upon which his economic analysis was based. The first one, which is 'a product of consciousness', is based upon the hedonistic principle (Drakopoulos, 1991, p. 36) and states that 'every man desires to obtain additional wealth with as little sacrifice as possible' (1836, p. 26). The 'desire for wealth' motive is explained by Senior not only through the self-interest principle (1852, p. 9) but, furthermore, by the motives for variety and distinction, as wealth determines individual's rank in society (1836, p. 199) and is a standard of 'power and pre-eminence' in the civilized countries (1836, p. 187). This desire is insatiable, because 'every person

¹Senior (1836, p. 6) defined utility in terms of pleasure and pain in the same manner as Bentham did (1789, p. 2). Senior (1836, pp. 11-12) also recognised the notion of diminishing utility as an explanation of the consumer's choice behaviour, but he did not use such a principle in fully explaining the determination of the relative values of goods.

²The motive for distinction is one used by modern scholars under the term 'esteem need' (see Maslow, 1954, p. 45).

has some unsatisfied desires which he believes that additional wealth would gratify' (1836, p. 27).

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However, the acknowledgment of special human incentives influencing economic behaviour—except for the widely accepted self-interest and profit motives—was not an exclusive priority of Senior. The other exponents of the utility approach in the early 19th century had something to say about the psychological and/or behavioural causes which determine utility. For instance Richard Whately, who influenced Senior on many subjects (such as methodology, the exact definitions of terms, the role of utility, etc.), introduced some special psychological motives of individuals compatible with their 'desire for wealth and exchange'. He diversified (1832, pp. 18-19) wants according to personal preferences and/or external circumstances (e.g. the level of income). Then, as well as the profit motive (1832, pp. 97-8), he specifies some other 'instincts of... Man [which] . . . lead to the advancement of society' (1832, p. 102). These 'instincts' are: (a) 'the inclination for self-indulgence and ostentation' (1832, p. 54); and (b) the want for a variety of consumption goods (1832, pp. 94-5). The main result of such incentives is the emergence of emulation among men (1832, p. 145). This emulation activity results in an increased work effort and production activity that will increase economic development (1832, pp. 147-8).

One year later, Mountifort Longfield (1833, p. 44), who independently from Senior developed a utility theory of value, mentioned the motive for variety in determining the extension of demand for luxury goods. Longfield, having argued that the living standard of workers is determined by their wage rate and not the other way around (see Moss, 1973, p. 325), maintained that the motive for variety consumption induces labourers to increase their work effort and their wage rate above the level of bare subsistence (Longfield, 1833, pp. 205-6).

Among the other members of the classical School who followed the cost of production explanation of value, it was McCulloch who recognized, in addition to self-interest (e.g. 1864, p. 97), the following additional socio-economic incentives of human beings: (a) 'the principle of improvement', which is 'the desire of adding to our means, and improving our condition' (1864, pp. 21, 23, 56); and (b) 'the passion to

rise', namely, 'to ascent still higher in the scale of society' (1864, p. 23). These two motives of 'want and ambition are the powerful springs that gave the first impulse to industry and invention, and which continually prompt to new undertakings' (1864, P-177).

Let us now see why Senior is considered as the classical author who relied much upon behavioural assumptions in explaining important economic phenomena in the supply-and-demand side of the economy.

He used, generally speaking, the human motives and particularly those for variety and distinction: (a) in partly explaining the content and the rate of wealth; and (b) in partly determining the rate of population growth. We say 'partly' because, apart from the behavioural assumptions he used in explaining the trend of some economic

¹ Senior in one of his earlier lectures (1826, p. 12) claimed that 'the pursuit of wealth, that is, the endeavour and enjoyment, is, to the mass of mankind, the great source of moral improvement'.

variables, he also employed physical variables such as the volume of the productive resources possessed by a country.

In regard to the first issue, Senior makes it clear that the main effect of the motive for distinction is to influence the rate of demand and utility of special goods of high exchange value, such as diamonds (1836, p. 13).¹ A secondary effect of the motive for distinction as well as of improvement which characterises 'some of the principal distinctions in individual and national character' (1836, p. 27), is the accumulation and proper use of wealth, as:

the modes in which different individuals would employ it [i.e. wealth] are infinitely diversified . . . [and] ... An equal diversity exists in the amount and the kind of the sacrifices which different individuals, or even the same individual, will encounter in the pursuit of wealth (1836, p. 27).²

Under such a strong incentive for the accumulation of wealth, he advanced a critique similar to Lloyd's on the general glut, arguing that 'a general satiety, that all men may be so fully provided with the precise articles which they desire' (1836, p. 29) is impossible to emerge.³

In regard to the second issue Senior explicitly employed a special human behaviour in explaining the empirical rate of population growth. In particular he related the motives of individuals for variety and distinction with the various kinds of goods consumed and the way of scheduling the demand pattern—an approach still in practice in our century.⁴ He classified consumption goods into: necessities, decencies and luxuries—a distinction previously introduced by Malthus (1815, p. 154).⁵ Decencies are 'those things which a given individual must use in order to preserve his existing rank in society . . . [however] . . . when consumed by the inhabitants of different Countries, or even by different individuals in the same Country, the same things may be either luxuries, decencies, or necessities' (1836, p. 36). Thus, 'a carriage is a

¹ Levy (1982, p. 315) comments that Senior's behavioural assumptions about the human want for variety and distinction is nothing more than a utility function for consumer goods, i.e., 'means to attain ends'. White (1992, pp. 66, 71-2), shows that Senior treated consumption 'as a socially interdependent activity' and his utility theory is a lexicographic type of approach.

² The motive for distinction has been employed by Friedman and Savage (1948, pp. 88-9) in showing the increasing utility of wealth when the individual moves to an upper class of society.

³ William Forster Lloyd used the human motive for variety of goods to criticize the theory of general crises, arguing: 'A general glut of commodities is ... the same thing as a general superabundance of wealth, and would indicate the full satisfaction of all human wants; but that there is, in fact, no

assignable limit to the desires of mankind; for one inconvenience is removed, others present themselves, which before had never been thought of; and thus the passion for wealth expands with the gratification of existing wants, and, if not absolutely infinite, may, at least, be termed indefinite' (Lloyd, 1833, p. 7). Rightly then, Bowley (1937, pp. 108—9) noticed the similarity of the treatment of wealth in terms of the variability of wants between Senior and Lloyd.

⁴ See, for example, Chamberlin's (1957, pp. 120-1, 144) argument of the influence of 'desire for variety' on the product differentiation and the existence of an excess capacity in monopolistic competition.

⁵ Almost the same distinction between wants for necessities, conveniences and luxury goods, was used more than a century later by Georgescu-Roegen (1968, pp. 262—3) in showing a lexicographic choice preference.

Decency to a woman of fashion, a Necessary to a physician, and a Luxury to a tradesman' (1836, p. 37). In other words, Senior's classification of goods is related not only to the income of individuals but also to their social class, situation and incentives for distinction and variety (see also Mason, 1998, p. 25). However, we cannot say that he explicitly advanced a conspicuous consumption idea, namely that the rich or middle-class individuals used consumption goods as a way of impressing others.¹ The conspicuous consumption behaviour was emphasised by John Rae (1834, pp. 267-8, 270) who explained it as a consequence of the rich individuals' selfishness and vanity. The conspicuous consumption theory, as it is known, was elaborated at the end of the 19th century by Veblen (1899, pp. 26, 28, 75) who made explicit use of the motive for distinction in describing the relative consumers' behaviour. However, there is no disposable evidence to conclude that Veblen's idea for the influence of the motive for distinction on the consumption schedule of the rich is derived from Senior's writings.² The various kinds of consumption goods that comprise the demand pattern of individuals directly influence, according to Senior, the rate of population. In his lecture on 'Population' (1829, pp. 3, 26-7) where he criticised Malthus' theory, he distinguished among different consumption goods and argued that the 'hope to acquire' decencies will check the incremental rate of population. Then, he concluded that 'habits of considerable superfluous expenditure afford the only permanent protection against a population pressing so closely on the means of subsistence, as to be continually incurring the misery of the positive checks' (1829, p. 34). In his later work he similarly claimed that:

the great preventive check [i.e. of the population] is the fear of losing decencies, or, what is nearly the same, the hope to acquire, by the accumulation of a longer celibacy, the means of purchasing the decencies which give a higher social rank It is by this desire of decencies, as distinguished from necessities, that long-settled civilized Countries are preserved from the evils of a population greatly exceeding the means of comfortable subsistence. (1836, p. 38).

Senior, in this statement, grasped the theory advanced in our century (see e.g. Rabin, 1998, pp. 13-5) that humans are mainly sensitive to how their current economic situation (e.g. consumption pattern and rate, etc.) differs from some reference level, such as friends' and relatives' economic situation, and so on.

He concluded (1836, pp. 42,49) that the motives for variety and distinction and the consequent consumption of non-subsistence goods (i.e., decencies and luxuries), will decrease the rate of population growth by increasing the influence of preventive over

¹ Senior, however, seems to grasp such a conspicuous consumption idea when he notices that luxury goods are changed among different human generations: 'Few vices, however mischievous, have been more censured than the ostentatious expenditure which every succeeding generation seems to consider its own characteristic' (1836, p. 38).

² For a deep analysis of Rae's and Veblen's theories of conspicuous consumption, see Mason (1998,

chapters 2, 5). It seems that Rae influenced Veblen in regard to the development of the theory of conspicuous consumption (see Edgell and Tilman, 1991). The effect of the conspicuous consumption on the form of demand curve has been adequately analysed by Leibenstein (1950) who called it the 'Veblen effect'.

the positive Malthusian checks.¹ Thus Senior, by adopting an argument similar to Longfield,² explained that under the function of the motives for variety and distinction, there is a trend in the rate of real wages to increase as the total income and production is increased.

III. PRODUCTION CAPACITY AND VARIETY-DISTINCTION MOTIVES

Senior also applied behavioural assumptions in the form of psychological and/or social human incentives in explaining economic phenomena and trends of economic variables in the production side of economy. As was mentioned above, the main human motive that he used was 'the desire of wealth', which as he wrote is 'the cornerstone of the doctrine of wages and profits, and, generally speaking, of exchange. In short, it is in Political Economy what gravitation is in Physics' (1836, p. 28). He introduced as a by-product of the 'desire for wealth' the profit motive (1836, p. 190), in explaining not only the allocation of resources among the various production activities, but also the accumulation of capital through the abstinence behavior.³ By relating these motives with the accompanying and/or influencing want for variety and (mainly for) distinction, he described the following effects on specific economic variables.

A first effect of the motives for variety and distinction is the formation of a particular consumption pattern—mostly of the rich unproductive consumers such as 'landlords, annuitants, mortgagees, and fundholders' (1836, p. 162). The rate of demand and reward for special labour, and also the kinds of goods produced are influenced by this consumption schedule (1836, pp. 154-5, 161).

A second outcome of the incentive for distinction, emphasised by Senior (1836, pp. 55, 152), is that it causes an increase in the rate of work effort and in extension to ie rate of production.⁴ This behaviour is equally applied to the majority of individuals, as 'experience . . . shows . . . a priori . . . that the greatest and longest continued sacrifices will be made in those Countries in which property is most secure, and the road to social eminence is the most open' (1836, p. 27). In this way he related the

¹ Malthus (1798, p. 126) had clearly indicated, among other causes, the want of luxury consumption as a preventive check of increased consumption. However Senior gave much more importance to such a motive. [Tius, Blaug (1962, p. 74) rightly comments that 'the desire to preserve one's standard, the hope of rising in the world, Senior stressed, are motives as strong as those leading to marriage and procreation. Thus, a rise in living standards provides an automatic preventive check to the growth of population'.

² Longfield argued that the 'love or necessity of variety' will prevent the labourer 'from forming those reckless matrimonial engagements which are supposed to produce a redundancy of population, inconsistent with the comfortable subsistence of the labourer' (1833, p. 206).

³ Gootzeit (1992, pp. 244, 247, 250-1) rightly shows that Senior's theory of abstinence is related more with the expected reward of the entrepreneurial profit than of pure interest.

⁴ Senior, prior to Jennings and Jevons, had recognised that labour generates disutility to the labourers, the rate of which is negatively determined by the real wage rate and productivity: 'The world employment is merely a concise form of designating toil, trouble, exposure, and fatigue Toil, exposure, and fatigue, per se, are evils, and the less of them that is required for obtaining a given amount of subsistence and comfort, T, in other words, the greater the facility of obtaining that given amount, the better, ceteris paribus, will be the condition of the labouring classes; indeed, of all classes in the community' (1836, p. 169).

existence of a special motive to the institutional context of economy as Parsons (1940) did a century later.

Senior was not the only classical author who pointed out the positive effect of the motives for variety and socio-economic distinction on the rate of work effort. John McCulloch, who referred to Adam Ferguson's idea, commented that 'With the lower classes the existence of present, and with the middle and upper classes the fear of the future want, are the principal incentives that stimulate intelligence and activity' (1864, p. 178). Also, at the end of the classical era, J.S. Mill (1848, p. 15) adopted the motive for 'variety of wants and desires' in explaining the increasing work effort of man.¹ A third result produced by the motive for distinction is the introduction of a new economic institution that increases the productive capacity of agriculture. As Senior put it:

in the progress of civilization, as wealth becomes the principal means of distinction and influence, landlords prefer rent to dependents. To obtain rent, that process of cultivation must be employed which will give, not absolutely the greatest amount of produce, but the greatest after deducing the expenses (1836, p. 164).

A fourth effect of the want for distinction is that it enforces the accumulation and the productive use of capital.² According to Senior, the capitalist will be stimulated towards such direction by the motive of distinction, as 'he wishes to raise himself in the world' to abstain from the present 'enjoyment' and to reinvest his profits as an 'act of deferring enjoyment' (1836, pp. 94, 185).³

A fifth consequence of the motive for distinction is the determination of the wage-and-profit rates among different occupations in terms of their 'agreeableness' or 'non-agreeableness'. In regard to the wage rate, Senior (1836, p. 201) claimed that it may be increased when the kind of employment has been accompanied by a very low social level. Similarly, the variations in the rate of profit, he argued (1836, pp. 202-3), are determined by the distinction that any occupation possesses in the social climax of ranks. This influence of the various human incentives or ambitions on the rate of rewards has also been employed by J.S. Mill (1848, p. 390) who commented that the rate of social distinction is a characteristic which differentiates the level of rewards in many production activities.

Apart from the above direct influences of the motives for variety and distinction on some economic variables, Senior implicitly recognised another two. One of these

¹ J.S. Mill elsewhere (1848, p. 892) refers to wealth as typical element of social distinction.

² Senior describes fairly well the capitalist behaviour of capital accumulation and reinvestment processes under the profit motive: 'there is nothing to which a capitalist submits so reluctantly as the diminution of the value of his capital. He is dissatisfied if it even remain stationary. Capital are generally formed from small beginnings by acts of accumulation, which become in time habitual. The capitalist soon regards the increase of his capital as the great business of his life; and considers the greater part of his profit more as a means to that end than as a subject of enjoyment' (1836, p. 192).

³ Senior dismissed the possibility of hoarding, arguing: 'No one supposes that he would lock it up [i.e. money] in a box, or bury it in his garden. Whether productively or unproductively, it still must be spent. . . every man must spend his income; and the less he spends on himself, the more remains for the rest of the world'(1836, p. 17).

influences 'deduced' by his arguments, is that through the want for distinction, individuals will try to advance their position; thus the amount of 'ordinary' and non-educated labour will be diminished. Namely, 'as civilization advances, every person will receive an education which will materially increase his power of production' (1836, p. 134). Senior remarks that in an advanced country (e.g. England of that time), the number of ordinary labourers was only a minority. The majority of citizens were

experienced, educated and skilled workers and self-employed persons. Thus, the major share of income distribution in such an economy would be the profit upon material capital plus the profit upon immaterial or 'personal capital, or, in other words, of education. It is ... on the quantity and the diffusion of this immaterial capital, that the wealth of a Country depends' (1836, p. 134). Thus, he recognised that by the human incentives for the improvement of life and social distinction, individuals will try to advance their education and knowledge, and hence the productive capacity of the economy will be increased. On such a basis he explains why 'Ireland is physically poor because she is morally and intellectually poor, because she is morally and intellectually uneducated' (1836, p. 135).

A second effect of the motive for variety implicitly recognised by Senior arises through the increase of volume and variety of manufactured goods by which economic growth could be advanced. He maintained that one of the main positive effects of the, division of labour is the mass production which reduces the rate of production cost.' He had also stated, under his third and fourth 'fundamental propositions' (1836, p. 26), that the manufacturing sector functioned under increasing returns while agriculture functioned under diminishing returns (1836, pp. 83-4, 86, 109). Therefore, if the demand for manufactured goods increased through the want for variety in consumption, the rate of its production would increase relatively, namely 'the stimulus thus applied to the production of lace would improve every process of the manufacture' (1836, p. 120). Also, as a secondary consequence of the function of such a human incentive, labourers' productivity would be increased through the extension of their knowledge and skill and the introduction of new 'invention' (1836, p. 173).

IV. CONCLUSIONS

Senior incorporates into his economic analysis, developed mainly in his major work, *An Outline of the Science of Political Economy*, the effects of some well-specified human behaviour expressed through special motives, such as the wealth motive and the motives for variety and distinction. The function of these motives, according to Senior, produce the following main economic effects:

1. schedule a special consumption pattern and increase the consumption of luxury goods

¹ Senior takes as an example the function of post offices: 'One of the principal of these advantages (i.e. the division of labour) arises from the circumstance that the same exertions which are necessary to produce a single given result are often sufficient to produce many hundred or many thousand similar results. The Post Office supplies a familiar illustration' (1836, p. 74; brackets added).

2. decrease the natural rate of population growth
3. increase the rate of work effort of individuals and hence the volume of production
4. change some important economic institutions and/or customs
5. reinforce the capitalistic spirit
6. justify the reward discrimination among various occupations
7. reinforce economic growth by encouraging investment in human capital and by increasing the volume of manufacturing production under increasing returns.

A number of historians of economic thought have noticed that Senior produced an 'extremely unsystematic' work (Whitaker, 1904, p. 93), 'worse in arrangement than

Ricardo's' (Schumpeter, 1954, p. 485), and being 'on the verge of great truths, but does not grasp them' (Haney, 1936, p. 349). Unfortunately, these comments may also be applied in the case of Senior's analysis of the various effects of distinctive human motives on important economic variables. However, based on an in-depth reading of his work, it cannot be denied that he, above all other members of the classical school, is the one to whom we must look to for an elaboration of the behavioural assumptions in economic theory.

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