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ALFRED MARSHALL'S PRINCIPLES OF ECONOMICS:
A CENTENARY PERSPECTIVE FROM THE ANTIPODES

by

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The text of this working paper formed the basis for a lecture given on 23rd May 1990, in the Department of Economics, to commemorate the Centenary of the publication of the Principles of Economics by Alfred Marshall. The Lecture was co-sponsored by the Economic Society of Australia (New South Wales Branch) and the Centre for the Study of the History of Economic thought at the University of Sydney.

# ALFRED MARSHALL'S PRINCIPLES OF ECONOMICS: A CENTENARY PERSPECTIVE FROM THE ANTIPODES

The Principles of Economics, whose centenary of publication is being celebrated this year, was published on 1 July 1890 by the London publishing house of Macmillan. Its announcement in Macmillan's quarterly listing for new books and new editions, described its author as Professor of Political Economy in the University of Cambridge, Fellow of St. John's College; sometime Fellow of Balliol College, Oxford and indicated that the book was the first of two volumes. In smaller print, it then described the work more fully in a concise paragraph which undoubtedly was drafted with substantial assistance from its distinguished author:

> This treatise which has been long in preparation is an attempt to present a modern version of old doctrines with the aid of the new work, and with reference to the new problems, of the age. Professor Marshall, while regarding economic laws and reasonings as merely part of the material which conscience and common sense have to turn to account in solving practical problems, gives special prominence, not only to the ethical quality of the motives by which a man may be influenced in choosing his ends, but also to the sagacity, the energy, and the enterprise with which he pursues those ends. The present volume is divided into seven books, under the following headings: I. Preliminary Survey; II. Some Fundamental Notions; III. Demand or Consumption; IV. Production or Supply; V. The Theory of the Equilibrium of Demand and Supply; VI. Cost of Production further considered; VII. Value, or Distribution and Exchange.

(Macmillan, 1942, pp. 127-8).

The subsequent issue of Macmillan's quarterly listing added extracts from reviews which had appeared on Marshall's new book. For example, The Times noted, among other things, : "This great treatise on Economic Science bids fair to take for the present generation the place which Mill's work took for the generation of forty years ago ... it is a contribution of capital importance to the higher literature of economic science ..." (cited in Macmillan, 1942, p. 128). Similar sentiments were expressed in many of the other newspapers which reviewed Marshall's book as well as in the more lengthy notices it received in the burgeoning journal literature.

An example of the latter is the glowing review produced by the German economist, Adolph Wagner, for the Harvard Quarterly Review of Economics. Its concluding paragraph (Wagner, 1891, p. 22) succinctly summarised a major distinguishing feature of Marshall's Principles: "... the first volume establishes in just and admirable fashion the continuity between classical English political economy and the science as it must stand to satisfy the demands of the present. It marks no revolution, but a progress, made with due regard to every advance in the science." In a similar vein, Edgeworth, then Tooke Professor of Political Economy at King's College, London and soon to become Drummond Professor at Oxford, noted that the chief centre of interest of the work laid in its Book V on the theory of equilibrium of demand and supply and that this fundamental symmetry between the actions of supply and demand explains why both were considered by Marshall to determine value in contrast to earlier views which saw either cost of production or, alternatively, utility, as the determinant of value. Edgeworth shrewdly notes in this context that Marshall's celebration of supply and demand



emphasises the general equilibrium characteristics of the work which were (deliberately) swamped in textual presentation designed to highlight practical, partial equilibrium, applications of these important components of Marshall's engine for reaching economic truths (Edgeworth, 1891, pp. 24-31, esp. 24-25, 27, 29).

The early reviewers drew attention to some of the major characteristics of the Principles of Economics which persisted over all of its eight editions so lovingly prepared by their author over the subsequent thirty years. These include Marshall's view of his work as an attempt at completion of earlier economic perspectives rather than as a synthesis of opposite views (cf. Shove, 1942, pp. 133-4)[3]; his appreciation of the theoretical necessity of a general equilibrium framework to secure determinate solutions to the problem of value combined with an awareness that practical applications required the more limited equilibrium analysis; and his fervent belief that economic science at best is only part of the solution to human problems, although admittedly a part growing in importance, and that therefore no purely economic solutions are ever available for redressing problems such as "the curse of poverty", the problem which, to a considerable extent, inspired Marshall's original entry into economic studies.

Less explicitly, these reviewers also drew attention to some of the features of Marshall's book which justify extensive centenary celebrations of its first publication. Edgeworth noted in one of his reviews, a relative "freedom from mistakes" rare in "such an extensive investigation of the most bewildering of the sciences." (Edgeworth, 1891, p. 31). He failed to note this quality was bought at the cost of a lack of clarity when stating principles and a deceptively simple style which obscured but never eliminated the difficulties underlying theoretical propositions and their application.[2] In his obituary of Marshall, freely drawing on notes supplied by Edgeworth, Keynes emphasised the many significant contributions which this volume of Principles contained. Neglecting those already mentioned, these ranged from explicit analysis of the element of time in terms of clearly defined long and short periods, distinctions between external and internal economies, prime and supplementary costs; consumer surplus; the idea of elasticity and its application to the theory of demand; while his general emphasis on the notion of the margin and substitution enabled that generalisation of the theory of value to embrace both exchange and production, both commodity prices and remuneration of agents of production which is one of the major distinguishing characteristics of the marginal revolution. (Keynes, 1972, pp. 205-210).[3]

Having said this, how does a centenary lecturer of Marshall's Principles continue? Given the extraordinary volume of Marshall appreciations which have appeared on similar occasions and which are already appearing this year in the context of the centenary, what can be said about this text which, though it itself replaced the dominant authority of its day, John Stuart Mill's Principles of Political Economy which had ruled supreme from 1848, has now itself been superceded by many generations of economics texts? Geographical location, as the title chosen for this lecture suggests, provides one solution to this problem, and one which forms the concluding section of this paper. The classical attributes of this work, enshrined in its cautious appreciation of the limitations of what economics can, and cannot do, provide a further suggestion of highlighting the continuing value of Marshall's great book which justify this commemoration. Where better, given Marshall's fervent belief in the value of the growth of economic freedom for progress, to emphasise such limitations in the context of competition, its meaning and benefits, to which his text drew attention. Contrary to the experience of war and preparations for or against war which provided the backdrop to fiftieth anniversary celebrations of the Principles (cf. Viner, 1940, p. 254), the centenary setting is coloured by reaffirmations of the necessity of economic freedom and competition for sustainable economic development. As is fitting for a classical treatise, which on Marshall's own criteria of what constitutes classical, continues to offer stimulating insights, his views on competition have still much to offer to current debate.



This brings me to the final point I wish to make in this already lengthy introduction. To some extent the celebration of the centenary of Marshall's Principles in 1990 embodies a degree of false pretences, because the first edition this explicitly notes was supplanted by its author with extraordinary rapidity when he issued a very substantially revised second edition as early as 1891.[4] Furthermore, for most people, the eighth edition is the Principles of Economics. This did not appear till 1920, and therefore only celebrates its seventieth birthday this year, hardly an anniversary which invites official commemorations. For these reasons the eighth edition, still in print in paperback (though regrettably with different pagination from the original eighth)[5], as the living version of Marshall's Principles, selfstanding as a single volume of foundations and no longer the first of two volumes, is the version of the book cited in the remainder of this lecture. Its successive parts concentrate on the limits of economic freedom and competition as perceived by Marshall and on some Antipodean perspectives of his work of interest in this centenary before a brief concluding remark.

## I

Marshall's views on the importance of economic freedom or competition for economic progress were in many respects centrally displayed in his book. Inspired at least in part by Hegel,[6] his vision of the growth of free industry and enterprise was not only designed to emphasise "the essentially organic character of economic problems" (Marshall, 1961, II p.4) but also to indicate that given the essentials of human nature, progress could only come from economic freedom, or that extension of freedom of action and choice which for him charactertised modern business. Marshall revealed an explicit preference for the term, "economic freedom" over that of "competition" because the latter carried moral and political overtones he wished to avoid (Marshall, 1961, I pp. 9-10).[7]

The link between competition and economic progress as disclosed in his reading of economic history was quite direct for Marshall, although the notion that contemporary industrial life could be distinguished from earlier times by being more competitive was not entirely satisfactory to him. (Marshall, 1961, I p.5). Marshall's reasons for this are instructive. First, he indicated that areas for collective action and cooperation are now deliberately chosen as areas where competition is unworkable or unnecessary. Hence a positive



role for the state can now be delineated, a role he increasingly tended to see as regulatory rather than as managerial. This clearly implies that Marshall was fully aware of some limitations to the benefits from competition. Secondly, the bad repute into which competition had fallen in Marshall's day, and ascribed by him to the contemporary prominence given to its anti-social forms, implied dangers in a practice of associating a term 'competition', "which suggests evil" with the factors making for modern civilisation (Marshall, 1961, I p. 10). Unlike many modern economists who see in increasing competition an almost universal panacea for economic ills, Marshall described competition as necessary only in a <u>non-virtuous</u> world where human action is not ruled by altruism and a strong sense of social responsibility: "energetic cooperation in unselfish work for the public good" is far superior to "even the best form of competition" though "history in general, especially the history of socialistic ventures" shows that neglect of "the imperfections which still cling to human nature" is only appropriate for that "golden age ... to which poets and dreamers may look forward" (Marshall, 1961, I pp. 8-9). For Marshall, human frailty explained both the necessity for competition and the problems of socialism.[8]

These moral factors associated by Marshall with the word 'competition', not only explain his preference for using the phrase, "economic freedom" instead; with its echoes of Smith's penchant for "natural liberty".[9] That preference also highlights his classical interpretation of competition in terms of freedom of entry rather than in terms of the logical requirements of a perfect competition designed to satisfy a lust for determinate solutions to theoretical problems.

Marshall himself was of course fully aware of a theoretical need for notions of "free competition" in the investigation of "equilibrium of supply and demand in their most general form" (Marshall, 1961, I p. 341). The notion of "perfect competition" with its requirement of "perfect knowledge of the state of the market" could only really be applied to highly organised markets like the money market, the stock exchanges and wholesale raw produce markets (Marshall, 1961, I p. 541) though had Marshall been writing seventy years later in a world where "insider trading" is a not an unusual feature of stock exchange activity, the real world of "perfect competition" would have become even smaller for him.[10]

It is well known in fact that the system of business organisation which Marshall himself chose to investigate was not the artificial construct of perfect competition but the real world of enterprise. This world is portrayed by Marshall as frequently non-competitive in the pure competitive sense of the word. This is illustrated by Marshallian emphasis on business features such as loss leaders, fears about the possibility of spoiling the market; price discrimination; combinations and trusts of producers and merchants, employers and employees; marketing costs; advertisers, and heterogeneous, and often artificially differentiated, products (Marshall, 1961 I, e.g. I pp. 324, 374-5, 396, 458). For Marshall, competition is inevitably constrained by both space and time and markets need therefore to be characterised in terms of their spatial and temporal characteristics in so far as they affect homogeneity of product, information transmission, nature and transaction and participants. He would have rejected the more sterile division of market structures by the theoretically driven categories lying



between the strictly logical polar cases of pure competition and pure monopoly (Marshall, 1961, I pp. 326-30). Informative analysis of actual industrial and market organisation of which Marshall was an acknowledged master can only be constructed from such a broader type of analytical framework.[11]

Adherence to this type of analytical perspective, is one reason why Marshall was never seduced by the extravagant claims being made for the welfare consequences of competitive equilibrium in the context of the so-called doctrine of maximum satisfaction (Marshall, 1961, I, Book V ch. xiii). At least two major objections could be raised against the view that an equilibrium position of supply and demand universally reflected maximum aggregate satisfaction as had been maintained by the Bastiat School of Economic Harmonies, and, in unguarded moments, even by the originator of the great school of general equilibrium. Apart from assuming away "all differences in wealth" between the parties involved in economic transactions with respect to the relative degrees of satisfaction they derive from additions to that wealth (or income), an abstraction Marshall generally regarded as illegitimate, this perspective neglected the variations in input-output relations embodied by diminishing and/or increasing returns.[12] From this perspective, for example, falls in prices generated by increasing returns need not impose losses on producers.[13]

A careful study of Marshall's "theory of value" embracing as it does his views on competition, market structures and economic dynamics, and which produced so many of the foundations on which the basics of contemporary micro-economics are constructed, may therefore pay handsome dividends. Too many valuable insights of Marshall were lost in this process of transmission and can only be easily retrieved by a re-exploration of Marshall's text (cf. Newman, 1960; Loasby, 1978). Failure to do so may induce inadequate appreciation of the limitations of that theory to which its master-builder *unashamedly*, but *sometimes* ambiguously, pointed. Apart from giving a better understanding of the nature of economic theory by more full explanation of these limitations, this practice prevents hasty application of artificial theoretical constructs to real world problems. Reading the papers provides far too many, and almost daily, occurrences of such hasty, and dangerous applications of competitive market analysis in the world today to need to press the *point that these neglected though central aspects of Marshall's* Principles need to be recovered.[14]

## II

An *Antipodean* perspective on Marshall's economics can be provided in a variety of ways. In the first place, for reasons alluded to by Keynes (1972, pp. 164-5), it is salutary to reflect on the fact that without the existence of Australia, or, more specifically, its pastoral development, the Principles may never have been written. It may be recalled that Marshall's initial education was planned by his evangelical father with an eye to a scholarship to John's College, Oxford for a study of classics, followed by ordination and a missionary career. Marshall's dislike of classical studies, his love of mathematics, and perhaps early beginnings of his religious doubts which eventually grew into agnosticism and loss of faith,



made him desire to go to that other St. John's College, at Cambridge, to study mathematics. The latter would have been prevented for want of money, as, despite his father's steady employment in the Bank of England, Marshall's family was not well off and there was little hope for a substantial scholarship to enable study at St. John's Cambridge. To the rescue comes Uncle Charles who assisted with a loan, which Marshall was able to pay after graduating in 1865 with first class honours in mathematics (second Wrangler). How Marshall moved from mathematics to economics via ethics, metaphysics and psychology, Keynes (1972, pp. 168-74) and others (Whitaker, 1975, 1 pp. 6-9) have also told but Australia's role in this process, which turned Marshall to economics, has rarely been emphasised. Keynes' rendition of the story, "which Alfred often told", of how his uncle gained the means to assist his Cambridge university education, tells all one needs to know about this aspect of Australia's contribution to Marshallian economics:

> Having sought his fortunes in Australia and being established there at the date of the gold discoveries, a little family eccentricity disposed him to seek his benefit indirectly. So he remained a pastoralist, but, to the mirth of his neighbours, refused to employ anyone about his place who did not suffer from some physical defect, staffing himself entirely with the halt, the blind, and the maimed. So when the gold boom reached its height his reward came. All the able-bodied labourers migrated to the gold-fields and Charles Marshall was the only man in the place able to carry on. A few years later he returned to England with a fortune, ready to take an interest *in a clever, rebellious nephew.*

In a sense to be clarified further in this part of the lecture, not only can it be said that for some time, therefore, the Australian economy rode on the sheep's back but that Australian economics as well, gained much assistance from this source.

The Principles themselves reveal indirect benefits of Marshall's acquaintance with the Australian pastoral industry, whether via Uncle Charles or other ways is immaterial in this context. Marshall's famous example of the marginal shepherd (1961, I p. 516n.1) which so annoyed J.A. Hobson, was enriched by colourful illustration from Australasian experience: "In Australasia, where men are scarce, land is abundant and a sheep is of relatively little value, there are often less than ten men, except at shearing time, to each 2000 sheep ..." Likewise, Australia's wool industry was used to illustrate the importance of joint products, (joint-supply) since the export of wool and the high price (generally) to be had for it, explains the low price of mutton in Australia. "Afterwards, the low price of meat gave a stimulus to the industries of preserving meat for exporation, and now its price in Australia is higher." (Marshall, 1961, I p. 389).

Australia is also used by Marshall to illustrate certain aspects of demography. The death rate and natural increase in Australasia are described as very low and fairly high respectively, though, as was coming to be increasingly seen as a problem in Australia itself, the birth rate was low and falling very fast (Marshall, 1961, I p. 192; II p. 297). Aspects of Australian economic progress are related to features of its immigration policy: "Australia also shows signs of vigour, and she has indeed some advantages over the United States in the greater homogeneity of her people. For, though the Australians ... come from many lands, and thus stimulate one another to thought and enterprise by the variety of their experiences and habits of thought, yet nearly all of them belong to one race: and the development of social institutions can proceed in some respects more easily, and faster than if they had to be



adjusted to the capacities, the temperaments, the tastes and the wants of peoples who have little affinity with one another." (Marshall, I p. 752; II p. 734, gives an earlier version of this remark.)

These homogeneous and British aspects of Australia's demographic composition, are related by Marshall to what he sees as one of the more important lessons Australian society can hold out for England's improvement. These are associated with labour relations. In the context of the longer term problems Marshall diagnosed as being associated with the growing strength of the Trade Union movement, he drew attention "to bold ventures" which some "Australasian colonies" were making "under English influence", and which held out "specious promise of greater immediate comfort and ease to the workers." (Marshall, 1961, I p. 45). One example of this type of industrial policy to which Marshall later referred (1961, I p. 715) was the minimum wage legislation, from which experiment, he argued, little direct conclusions could be drawn for England because of the vastly different resource endowment (in terms of land and age composition of population) between the two countries (Marshall, 1961, I p. 715). More important is his warning on the inappropriateness of the universal introduction of the eight hour day in Australia without regard for the differing conditions in Australian industry. Marshall goes so far as to ascribe part of the detrimental consequence of the 1890s depression to this particular factor:

> For instance, when we look at the history of the introduction of the eight hours' day in Australia we find great fluctuations in the prosperity of the mines and the supply of gold, in the prosperity of the sheep farms and the price of wool, in the

> borrowing from old countries capital with which to employ Australian labour to build railways, etc., in immigration, and in commercial credit. And all these have been such powerful causes of change in the condition of the Australian working man as to completely overlay and hide from view the effects of a reduction of the hours of labour from 10 gross (8 3/4 net after deducting meal times) to 8 net. Money wages in Australia are much lower than they were before the hours were shortened; and, though it may be true that the purchasing power of money has increased, so that real wages have not fallen, yet there seems no doubt that the real wagers of labour in Australia are not nearly as much above those in England as they were before the reduction in the hours of labour; and it has not been proved that they are not lower than they would have been if that change had not taken place. The commercial troubles through which Australia passed shortly after the change were no doubt mainly caused by a series of droughts supervening on a reckless inflation of credit. But a contributory cause appears to have been an over-sanguine estimate of the economic efficiency of short hours of labour, which led to a premature reduction of hours in industries not well adapted for it. (Marshall, 1961, I p. 701n.1).

On the other hand, Marshall followed with interest Australia's experiments in conciliation and arbitration, although little of this is visible in the pages of the Principles (for an explanation of this, see Petridis, 1990, pp. 25-6).

Two other Antipodean connections with Marshall's Principles may be mentioned. The first is associated with the explicit recognition he gave in his book to the work of two British born economists who had permanently settled in Australia. Hearn's Plutology is approvingly referred to in the context of pioneering analysis of wants (Marshall, 1961, I p. 91 n.1) while in the first five



editions Hearn's work on industrial organisation was mentioned with approbation. Every edition in the context of the scope of economics also acknowledged the usefulness of Syme's Outlines of an Industrial Science (Marshall, 1898, p. 85n; 1961 II p. 783).[15]

As is usual in most economic exchanges, the benefit flow is not one way and Marshall's economics greatly assisted economic education in Australia when it started to take off in the final decade of the nineteenth century and the early decades of the twentieth century. During the decade of the Australian Economic Association, a study group on Marshall's economics was organised by one of its founders and early Presidents, Walter Scott, then Professor of Greek at the University of Sydney. In his autobiography, Robert Garran (1958, p. 77) drew attention to the importance of Marshall's textbook for the spread of economic education in Australia at the turn of the century. Goodwin (1966, chapter 15) has chronicled the role of Marshall in the economics education at Australian universities during this period in more detail. A set of lecture notes for courses in economics at the University of Sydney in the early 1920s given by R.C. Mills[16] points to the importance of Marshall in that context while my own experience in the 1950s confirms a longevity of Marshall's work in this regard. Both his Principles and Industry and Trade were then still considered as essential reading for the theory of the firm, as presented to us within second year economics studies. In Melbourne, the role of Marshall was even more long-lived largely under the inspiration of Wilfred Prest, who

> was always a true disciple of Marshall, believing that 'Economics is the study of mankind in the ordinary business of life', and that established doctrine is constantly in need of

reconsideration in the light of changes in social conditions and institutions. His own copy of Marshall's Principles was famous. Lavishly interleaved with scraps of paper covered in tiny pencil script, it was commonly referred to as 'Prest's bible', and his students at one time pretended to believe that he was preparing the 9th edition. But they read their Marshall, and they read the modern works, and learned the importance of finding out the facts of the Australian economy. As one student put it - 'There's a lot of reading but his lectures are rather like a road map - you recognise the landmarks'.

(Polglaze and Soper, 1977, p. xv)

Let me conclude this Antipodean interlude on the Marshall centenary by briefly recording that two of Australia's best known economists - Douglas Copland and Trevor Swan - were invited to give the Marshall lectures at Cambridge.

## III

Keynes (1972, p. 239) reports Mary Paley Marshall, Alfred's wife from 1877, as saying that her husband was "a great preacher", so that the preaching I have engaged in during this lecture can be justified by being fully within the Marshallian tradition. Its better justification arises from the value there is in occasionally going back to Marshall's Principles to learn more about the foundation of the economics he loved and helped to develop over his long life of devotion to the subject. Commemorating the centenary of publication of this great classic is not an empty gesture of hero or ancestor worship. It is designed to draw attention to the enduring merit of this piece of economic literature. To use Marshall's own words in



describing the characteristics of classical works, the ideas his Principles created "can never die ... and as an existing yeast are ceaselessly working in the Cosmos." (Marshall to Bonar, 17 November 1898, in Pigou, 1925, p. 374). If in this lecture I have briefly drawn attention to some of these ideas whose fermentation is continuing to enrich economic knowledge, and have stirred some of you to re-study or to initially study, the pages of Marshall's Principles, then the purpose of this antipodean centenary celebration of its publication will have been truly served.

## ENDNOTES

1. Others have rejected the accuracy of this perception by Marshall of his own work, arguing that it relies on substantial misinterpretation of essential features in the major works of classical political economy, especially those by Smith and Ricardo and over-reliance on the status of the work of John Stuart Mill as being part of that tradition. See Bharadwaj (1978a and b), but cf. Pasinetti (1983, pp. 139-40) who suggests that the major characteristic distinguishing Marshall's economics from the purer versions of other members of the marginalist school as his adherence to a realistic theory of production, costs and supply which attempted incorporation of classical doctrines into the new marginalist framework, sometimes with devastating results as in the case of increasing returns (Marshall, 1961, Appendix H).

2. Leslie Stephen noted this in a letter (March 1891) he wrote to Marshall on matters arising from the Principles of Economics. While generally congratulatory on Marshall's book, Stephen expressed regrets about the extent to which qualifications were introduced by Marshall when generating conclusions. In Stephen's view, this made for a bad text because students by this practice were denied the basic principles in their subject of study which preliminary educational needs invariably required. In their observations on the Principles occasioned by Marshall's death, Pigou (1925, p. 86) and Keynes (1972, p. 212) shared this judgement in so far as it involved the deceptively easy style and manner in which the text was written.

3. In addition, Keynes (1972) refers to its attempts to remove controversy in history, theory and method. The former relates to the heavy emphasis on facts and historical (inductive) procedures which need to supplement abstract deduction at every step of the argument; the latter relates to Marshall's emphasis on continuity in economic doctrine obtained by his attempt to complete rather than correct earlier writings and which placed what Marshall regarded as the rather extravagant claims for originality by Jevons and the Austrians into proper perspective. These conciliatory attempts to remove controversy from the subject undoubtedly assisted the wide acceptance and favourable review of the Principles.



4. A major revision was the restoration of the book's original plan of contents in terms of six books rather than the seven books in which, as the Macmillan book list noted, the first edition had been sub-divided. Such substantial changes to the first edition in less than a year undoubtedly explain part of Marshall's inability to complete the much heralded second volume, the preparation of which would have been a far better use of Marshall's time than that devoted to the preparation of no less than three further editions over the 1890s.

5. The Papermac edition of 1949 used new pagination and new plates because those used in the previous printings of the eighth edition had by then been worn out. Such reprintings were extensive since as Macmillan (1942) noted, the 1920s and 1930s generated more sales of the book than the previous seven editions did, requiring no less than six reprintings to supply the British and American markets. The so-called ninth, variorum edition edited by Guillebaud for the Royal Economic Society embodies the original pagination of the eighth edition in its first volume which produces that text, with cross references to the second volume which indicates many of the changes made in previous editions. This edition, now unfortunately out of print, is used for the purpose of referencing in this paper.

6. For a detailed discussion of Marshall's early infatuation with Hegel's Philosophy of History in this context, see Peter Groenewegen (1990a).

7. Separate articles published during the publication of the various editions of Marshall's Principles expand on these views of competition in a more systematic form. See Marshall (1890, 1907).

8. Marshall explicitly raised these problems of socialism in his paper on economic chivalry (Marshall, 1907, pp. 333-4) while they derived from his detailed study of the subject including a visit to the "socialist" communities in the United States in 1875, which he described in letters to his mother. For a detailed examination of Marshall's 'tendency' to socialism see Rita McWilliams-Tulberg (1975).

9. Neither Smith's love of "natural liberty" nor Marshall's predelictions for "economic freedom" in the interest of economic and social progress blindfolded them to the benefits of government regulation. Smith's tolerance of legally determined maximum rates of interest because this prevented extravagant borrowings by prodigal (consumers) and speculators stands up exceedingly well in the light of Australian experience following financial, including interest rate, deregulation.

10. It is useful to remind of the relative recent nature of the identification of perfect competition as a theoretical construct and the meaning assigned to competition by economists working before that time. See Stigler (1957); Eatwell (1982).

11. Marshall's Industry and Trade (1919) is a striking example of his talents as a contemporary economic historian while in a letter to Flux commenting on the Cournot dilemma of resolving the conflict between increasing returns and competitive market structures, he noted both the need and manner in which economists could become acquainted with the realities of industry and business and the dangers of not doing so (Marshall to Flux, 7 March 1898, in Pigou, 1925, pp. 406-7).

12. Marshall (1961, I, Appendix H) notes the problems increasing returns raises for economic theory in the manner he was developing it, a candour which is missing in later discussions.



For a further development of this matter, see Groenewegen (1977, pp. 173-4) where I drew attention to it in the context of my Adam Smith bi-centenary lecture.

13. Marshall's tax-bounty analysis was developed in this context but he greatly warned against simple application of such theoretical propositions as practical policy on a wide range of grounds. For a detailed discussion of Marshall on Taxation, see Groenewegen (1990b).

14. As example, though not in the area of competition, is the misuse made of his concept of consumer surplus in measuring welfare losses from taxation and other types of government intervention. Excess burden measurement in terms of the simple formula, $1/2\ e.t.^2.P.Q.$ was discovered by Marshall in the 1870s, was alluded to by him in his criticism of specific commodity taxation and used by him to defend taxes on necessities as an ostensible optimal tax policy. However, his taxation mathematics was never published as a practical policy, because its application was far too difficult.

15. For a full discussion of Marshall's use of Hearn's Plutology and Syme's Outlines of an Industrial Science based on the annotations Marshall made in his personal copies of these books preserved in the Marshall Library, see Groenewegen, 1988.

16. As taken by a distinguished student of this Faculty Mr. Stacy Atkin (1905- ) who was Mills' student between 1923 and 1925. The lecture notes were recently donated by his son and daughter-in-law, Mr. and Mrs. G.R. Atkin of Beecroft and provide a valuable record of the standard of teaching in economics and other Faculty subjects in the early 1920s.

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