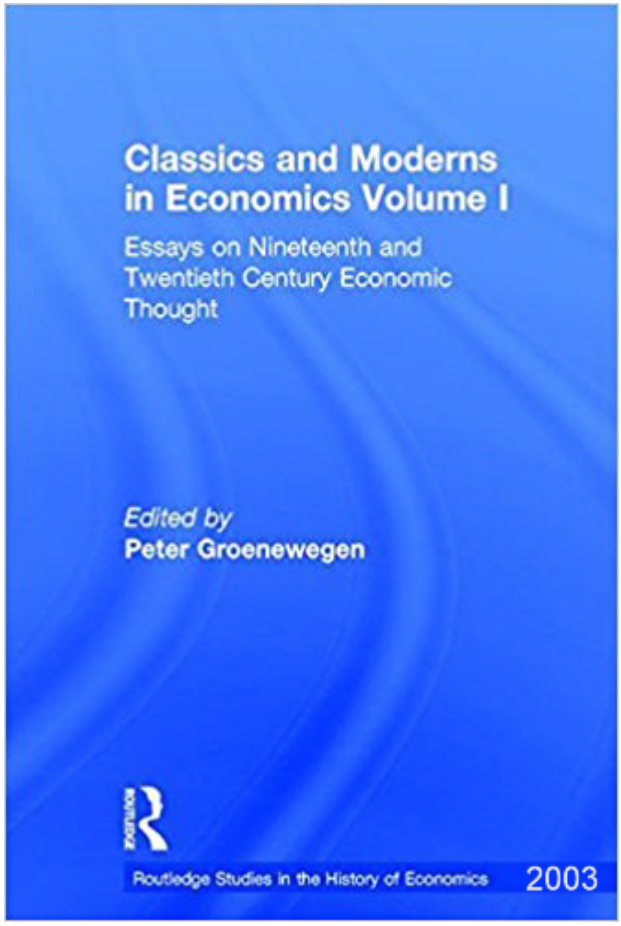
Classics and Moderns in Economics Volume I

Essays on nineteenth- and twentieth-century economic thought

Peter Groenewegen



Classics and Moderns in Economics Volume I

Peter Groenewegen's reputation as a chronicler of the history of economics is unparalleled. Building on his respected collection on eighteenth-century economics, this new book focuses on the nineteenth and early twentieth centuries.

While Part I of the volume concentrates on the classical economists: Thomas Malthus, David Ricardo and Karl Marx, Part II is dominated by the figure of Alfred Marshall. Several essays have never previously been published, while many are difficult to access, having been written across the 1970s, 1980s and 1990s. An invaluable resource for historians, the book displays the evolving nature of Peter Groenewegen's work over the years.

Of interest to students and academics involved in the history of economics, this collection should be on any self-respecting economist's bookshelf. Groenewegen is one of *the* authorities on nineteenth- and twentieth-century economics.

Peter Groenewegen is Professor of Economics at the University of Sydney, Australia. He has written widely on the history of economics, including *Eighteenth-century Economics* (Routledge, 2002).

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Acknowledgements

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Introduction

The present book is a second collection of my essays on the history of economics, the first concentrating on previous centuries, particularly the eighteenth. This book, as its title satisfactorily indicates, includes a selection of my contributions to nineteenth- and twentieth-century economics. Their original publication dates range from 1967 to 2001, hence once again reflecting my extensive interest in the whole of the history of economics, sustained over the greater part of my academic career. They also reflect a variety of interests and a generalist approach to the subject, which may be considered as out of place in an age of ever-increasing specialisation. A list of the contents ranked chronologically in terms of original dates of publication (or completion) appears as the appendix to this introduction.

The first three operative words of my title for this book indicate that it discusses classics and moderns. The latter designates adherence to the use of the marginalist method in economics; the meaning of 'classics' in this context is a little more ambiguous. The nature of this ambiguity is raised in Chapter 8, which reviews Marx's approach to defining classical economics. The operational stance on classical economics adopted here is an amalgam of Marx's views and the more contemporary delineation of British classical political economy from Smith to John Stuart Mill and Marx. In a sense, it also embodies Marshall's quite distinctive view of the 'classics' as books of continuing influence, an interpretation of the term which covers much of the work produced by the economics writers whose views are explored in the essays that follow. It needs to be observed as well that the broad, comparative intent of many of these essays makes their classification into such categories somewhat problematic.

It may be noted at the outset that the vast majority of these essays come from a relatively later stage of my career than my work on seventeenth- and eighteenth-century economics. The last initially derived from my postgraduate studies, devoted as they were to the economics of Turgot, and to the history of (mainly British) value, production and distribution theory written from 1650 to 1776. In this book, only one item (Chapter 2) dates from the 1960s and, interestingly, half of its contents are devoted to the eighteenth-century economist Sir James Steuart. Only two essays come from the 1970s (Chapters 3 and 6). Both are devoted to matters associated with Ricardo, though the second draws as well on

pre-Ricardo economic writings from the eighteenth century and before. The remainder of the contents was published after my appointment as Professor of Economics at the University of Sydney, perhaps a good reason to justify starting this book with the published version of my 1981 inaugural lecture, though as indicated later, there are other, and better, reasons for this as well. Eight essays come from the 1980s, eighteen from the 1990s, and three from the years 2000 and 2001. The heavy concentration of these essays on the later decades of my academic career as professor, owes much to the research interest I developed from the mid-1980s in Marshall and his economics. I then made the decision to write a biography of Alfred Marshall, and commenced research to that end during a period of study leave in Cambridge in 1984. The biography was published in 1995 (Groenewegen 1995). Almost two-thirds of these essays incorporate a Marshallian theme and emphasis; more than half feature his name in the title.

A further general attribute of the contents of some of these essays can be drawn attention to in the opening remarks of this introduction. Several of them included in this book also reflect an emphasis on the economics of Australia, my adopted country. Together with Bruce McFarlane, I had written a brief study of the history of Australian economics as part of the Routledge series of national histories of economics (Groenewegen and McFarlane 1990). Chapter 13 mentions Australian economics explicitly in the title; Chapters 10, 24, 31 and 32 have an Australian flavour in parts of their texts.

The original place of publication of the material reprinted here is also rather diverse. Thirteen of these essays were originally published as chapters in books, of which four were contributed to *Festschriften* dedicated to colleagues and friends in three European countries. The last thereby illustrate my cosmopolitan associations: the persons celebrated in this way include an Italian, a Dutchman and two Englishmen, one of whom was my former supervisor for doctoral studies at the London School of Economics, the late Bernard Corry. Seventeen of the essays were originally contributed to journals: of which eight to Australian journals, three each to British or American journals, two to Italian journals, and one to a French journal. Two of the essays have never previously been published. The first of these was an invited address to an Australian Conference of Economists to commemorate the centenary of the birth of Keynes (Chapter 24); the second was a chapter written for a projected volume of essays on Marshall, which in the end never eventuated. Finally, three of the essays are review articles (Chapters 5, 21 and 32); one (Chapter 28) is a brief obituary of an economist whom I greatly admire (Joan Robinson), as is also clearly indicated in the dedication to Chapter 1 (and see below in this introduction). Two of the essays were centenary tributes to two major economists of the twentieth century, both born in 1883 (Chapters 24 and 27).

A more detailed discussion of the contents

In line with the title, the book is divided into three parts. The first, containing nine essays, is simply called 'classics', a term discussed at length in Chapter 8 in

the context of Marx's use of the term, as indicated previously. The second part, with fourteen essays, covers 'moderns' whose work was largely prepared in the nineteenth century. It has a heavy concentration on Marshall's economics (ten chapters), although many of these are comparative studies linking Marshall's thought with that of other economists and, more widely, with other thinkers.

The third and final part is devoted to 'moderns' of the twentieth century. Its nine essays all appear in Volume II and deal with Keynes (Chapters 24–6), Schumpeter (Chapter 27), Joan Robinson (Chapter 28), the Cambridge School of Economics between the two world wars (Chapter 29), Jacob Viner (Chapter 30), Colin Clark (Chapter 31) and the 'cream' of contemporary economic writers (thirty-six in all) whose major work was almost invariably published after World War II (Chapter 32). There are many inter-connections between these parts, frequently by way of comparisons with Marshall, who is linked with Smith, Ricardo and Marx (Chapters 1, 17 and 18), with Foxwell and Keynes (Chapters 20, 24 and 25) and, more generally, with the whole of the Cambridge School between the two world wars (Chapter 29).

The remainder of this introduction looks in more detail at each individual essay of Volume I, that is, chapters 1–16.

Classics

Chapter 1, my inaugural lecture at the University of Sydney, published in 1982, makes a good opening essay for this volume. After all, its subject matter covers two major 'classics' and one 'modern' economist on the subject of 'history and equilibrium' in a comparative exercise on how these matters were treated by three giants among economists: Smith, Marx and Marshall. Chapter 1 is a good curtain raiser for other reasons. The lecture was dedicated to Joan Robinson, who herself had pontificated on this subject in a manner critical of much practice by contemporary economists. She in turn was kind enough to write after she had read the lecture, that 'it is always a pleasure when one finds that some seed has fallen on fertile grounds' (Joan Robinson to the author, 23 September 1981). The essay therefore indirectly links with my obituary of Joan Robinson, written two years later (Chapter 28), while the issue of the importance of history for economists is a recurring theme in much of my work. This aspect of my research was captured in the title of my autobiographical essay (not included here), 'Economics Does Have a Useful Past, and yes, History Is Important' (Groenewegen 1997a) and, of course, in much of its contents. Although over twenty years old, the lecture reprinted as Chapter 1 in my view contains material which is of abiding value. It can, therefore, still be read with profit since it touches a problem difficult to resolve in practice, that of the complex links between equilibrium analysis, factual material and historical time, of which a familiarity with history particularly reminds.

Chapter 2 also links an eighteenth-century economist to one from the nineteenth century, partly on the subject of applying history to economics. Moreover, it introduces a genre of article to which I have frequently

contributed as a historian of economics – commemorating anniversaries of major works in economics. Chapter 2 celebrates the bicentenary of the publication of Sir James Steuart's *Principles of Political Œconomy* (1767) and the centenary of publication of the first volume of Marx's *Capital* (1867). Needless to say, the reflections inspired by these commemorative events were comparative; hence its comments on the blending of historical material with the theory which is a noted feature in the work of both of these economists. In addition, Chapter 2 discusses Marx's appreciation and criticism of Steuart's work, an opportunity for further elaboration of similarities and differences between these authors of major theoretical treatises. It was written as a monograph for the New South Wales Branch of the Economic Society of Australia in February 1967.

The origins of Chapter 3, which are also recounted in its opening endnote, are sufficiently instructive to warrant some comment in this general introduction. As indicated there, the topic for this essay and the research it entailed arose from a conversation at Cambridge in 1972 on the precise origins of the phrase 'supply and demand'. Being then on leave in London, it was not difficult to follow up this conversation by revisiting seventeenth- and eighteenth-century literature of relevance in the pleasant surroundings of the Goldsmiths Library (which also features in Chapter 20) and reaching the somewhat paradoxical conclusion that Ricardo was the economist who first featured the term 'supply and demand' in a prominent place, that is, a chapter title of his *Principles*, most likely via his friend James Mill. 'Prominent place' is an important qualification in this context, since as Thweatt (1983) indicates, there had been earlier occasions when economic writers used the phrase 'supply and demand'. The evidence for this is clearly stated in Chapter 3 and needs no further comment; the point I wish to raise in this introduction is that such historical trawling for the first use of a term is an interesting exercise in historical scholarship which can often lead to unexpected results. Frequently, to put the matter more generally, the adoption of contemporary terminology follows well after the identification of the phenomenon which it describes and summarises. 'The Origin of the Phrase "Supply and Demand"' is a telling illustration of this phenomenon, perhaps the reason why it was quickly accepted by the editors of the *Economic Journal*, where it was published within twelve months of submission.

Chapter 4 has a further eighteenth-century theme. It raises aspects of the post-enlightenment debate over population and the possibilities of progress. Malthus explicitly dealt with this in his 1798 *Essay on the Principle of Population*. As the second of two talks given at the University of Lecce in 1998, Chapter 4 was designed to contrast the optimism on growth and progress so visible in Enlightenment writing, including Smith's *Wealth of Nations* (the topic of the first talk at Lecce and reprinted in my volume of essays on the eighteenth century – Groenewegen 2002), and the more pessimistic, sombre note introduced to such prospects by the Malthusian population argument. The last, as is well known, summarised and developed a long tradition of eighteenth-century

thinking on population, and in that context popularised a number of arguments which not long afterwards became the stock in trade of the second generation of classical economists. The pessimistic note on progress from what Malthus believed were its inevitable consequences for population, relied on a number of underlying propositions of his *Essay*, propositions which in the early nineteenth century rapidly gained the status of stylised facts. For the purpose of the argument in Chapter 4, diminishing returns in agriculture (in contrast with the increasing returns thought generally to prevail in manufactures) was a major foundation stone of that pessimism, and hence a key factor differentiating nineteenth-century classical economics from the earlier, more optimistic stage of classical political economy (especially that of the Physiocrats and of Smith). Diminishing returns in agriculture became a hallmark of nineteenth-century classical economics and gave its outlook on progress a distinct, long-run, pessimistic flavour. This made it easy for Carlyle and others to attach the adjective 'dismal' to the science of political economy. On the other hand, Carlyle's friend and contemporary J. S. Mill, often regarded as one of the last of these classical economists, turned its ultimate consequence, the stationary state, into a state of relative bliss, an opportunity for spiritual and cultural advancement. By relating this major change in economic thought to the French Revolution and the associated Napoleonic Wars, Chapter 4 places this important transition in the development of classical economics firmly within its historical background of massive political, social and philosophical change generated by these events on the stage of world history.

Chapter 5 is also devoted to Malthus' economics, but examines it as a whole in the context of reviewing the collection of Malthus' writings published by Pickering in 1986. It was written at the invitation of the late George Stigler in his capacity as editor of the *Journal of Political Economy*. This review article is worth reprinting for several reasons. First, it provides a general appreciation of Malthus' economics and draws attention to one of its aspects less frequently commented on: the economics of education. Second, and more generally, it discusses standards for judging editions of collected works in terms of those set – almost by way of absolute standard – by Sraffa's edition of the collected works of Ricardo. Given the high costs of these ventures, it also provides a cost comparison with readily available reprints, in which the edition under review came out quite badly. I have since then applied these standards when reviewing other collected editions of nineteenth-century economists (for example, Groenewegen 2001).

Chapter 6 is the second oldest paper in the collection, having been presented at a conference of Australian economists in 1971 and published with revisions the following year. It raises three aspects about Ricardo's theory of value and distribution, of which one was inspired by the reswitching debate, an offshoot of the famous Cambridge controversies of the 1960s and 1970s in the theory of capital. The first 'note' comments on Stigler's well known assessment of Ricardo's labour theory of value as a 93 per cent theory. It was designed to show that Ricardo's views on this matter were rather more flexible than Stigler's

interpretation supposed. For example, depending on the durability of the machine used in the illustrative calculation, it is possible to reveal the presence of a 32 per cent labour theory of value in Ricardo's arithmetic. The second 'note' illustrates the interdependence of value and distribution theory in Ricardo's system once a one-commodity world (corn economy) was abandoned. It does so by using the tool box provided in Sraffa's *Production of Commodities by Means of Commodities* in an elementary way, thereby providing a simple explanation of this interdependence which I still find useful for teaching purposes. The discussion of Ricardo's economics in the light of the reswitching of techniques, the third 'note' on Ricardo, remains interesting in my view because of the additional light it sheds on the controversial introduction of his chapter on machinery in his *Principles*. It suggests that this chapter was a *volte-face* on Ricardo's part in more ways than the one more generally recognised in the literature (that is, Ricardo's candid admission that under certain conditions the introduction of machinery could cause unemployment).

Chapter 7, first published in 1982 in the first issue of *Contributions to Political Economy*, illustrates a specific episode in opinions about Ricardo's authority in political economy after his death, which has implications for the view taken of the development of economics from the 1830s. This post-1830 development can either be presented as a continuous evolution in economic thought, or it can be seen as a dual phenomenon of two separate streams emanating from Ricardo's economics. Chapter 7 illustrates this by examining the Ricardian credentials of De Quincey's economics with respect to value in its two manifestations, *The Dialogue of Three Templars* (1824) and the work of twenty years later, *The Logic of Political Economy* (1844). Such a comparison shows quite clearly that De Quincey abandoned his labour theory of value which he had so assiduously defended in 1824 for a general 'supply and demand' ('usefulness' and 'difficulty of acquiring') theory in 1844, a change explicable on political (anti-radical) grounds. It should be recalled in this context that Ricardo's labour theory itself had inspired the radical interpretation of the 'Ricardian socialists' in the intervening years. The argument of Chapter 7 is also interesting because it points out that De Quincey's change of heart on value theory was rarely explicitly commented on, even by those with a decided interest in noting this type of change, such as Marx and, following him, Maurice Dobb. More generally, the story Chapter 7 tells is part of what the late Krishna Bharadwaj (1978) has described as the gradual subversion of the classical theory.

The last two chapters of Part I deal, even if somewhat indirectly, with issues raised by the economics of Marx. Chapter 8 examines his conception of classical political economy by investigating both its dual-nationality aspects (French and British political economy) and its specific timing between the middle of the seventeenth century and the 1820s. It also situates this classificatory device of Marx within the context of specific features of his economics. Chapter 8 first appeared in 1987 in an issue of the relatively short-lived journal, *Political Economy: Studies in the Surplus Approach*. It continues to be of interest because of its stress on the ambiguous qualities in classificatory categories like

classical political economy, hence suggesting that such concepts in periodisation in the history of economics need careful explanation and definition and cannot be simply taken for granted, as is so often the case. The chapter has therefore also an important historiographical intent.

Chapter 9 deals critically with Loria's treatment of Marx and Marx's economics in the context of his quarrel with Engels, Marx's literary executor. It was originally presented at an Italian conference on the reception of German historical economics in Italy, of which it was clearly a specific example. It thereby raises another theme which has occupied me occasionally as a historian of economics. This is the process by which economic knowledge is diffused, particularly when it crosses national, and hence cultural boundaries, and the transformation of such knowledge as part of this process. Chapter 9 is also a minor chapter in the development of Marxian economics, and as such raises some interesting issues. These include major problems in Marxism such as historical materialism and the transformation problem, as well as the historical issue of misinformation and wrong interpretation of Marx's life and work on the part of Loria.

The nine chapters on 'classics' which constitute Part I are therefore confined to only a few of the 'classical economists': Smith (Chapter 1), Steuart (Chapter 2), Malthus (Chapters 4, 5), Ricardo (Chapter 6), De Quincey (Chapter 7) and Marx (Chapters 1, 2, 8 and 9). Chapter 3 is a hybrid – within classical economics only if Marx's position on the subject is accepted – largely because it tried to discover when a certain phrase, 'supply and demand', first came into the language of economics as a major analytical term, a task which entailed the examination of much eighteenth-century literature before Adam Smith. When read in conjunction with Chapter 7, it can be seen why this historian of economics saw it as paradoxical that Ricardo's *Principles* was the first book which placed the phrase 'supply and demand' in a prominent place as part of a chapter title.

Moderns: the nineteenth century

The fourteen chapters of Part II deal with marginalist economics: they do so in a general manner in its opening essay (Chapter 10) and more specifically in the context of Marshall's taxation analysis (Chapter 16) and the economics of Pantaleoni (Chapter 22). For the majority of chapters in Part II, they do so only if marginalist economics is taken as a broad classificatory device in the history of economics, into which Marshall's economics is included as a matter of course. In fact, the bulk of the essays included here only touch Marshall's marginalism peripherally. They basically deal with broader issues such as his relationship with the classics, his views on the history of economic thought, his attitude to his library, his flirtations with Hegelian philosophy and evolutionary doctrine, and so on. Many of them, as already indicated in this introduction, were by-products of my research for a Marshall biography. Part II, it can be said here, also includes two essays (Chapters 14 and 23) on what can be described as issues

in 'feminist economics', both drawn from a workshop on 'Feminism and Economics in Victorian England' (organised by the University of Sydney's Centre for the Study of the History of Economic Thought). Chapters 28 and 32 from Part III likewise fall partly into this category, as noted later in the introduction to the second volume.

The first chapter of Part II is a general survey of the English-speaking pioneers of marginalist value and distribution theory. It was written as a chapter for the third volume of a series of books on recent thought in the history of economics, of which the previous two volumes dealt respectively with pre-classical and classical thought. Chapter 10 successively deals with the contributions to value and distribution theory of Jevons, Marshall, Wicksteed, Edgeworth and Pigou in England, and of J. B. Clark and Irving Fisher in the United States. Among other things, Chapter 10 draws attention to further possible Australian roots of some of Jevons' economics, with special reference to the economic thought of Woolley, the foundation Professor of Classics at the University of Sydney, with whose work Jevons was familiar. More generally, Chapter 10 surveys the recent literature on marginalist value and distribution theory in the English-speaking world. Aspects of its concluding comments continue to be pertinent to contemporary economic practice.

Chapter 11 is a comparative study of Smith, Marshall and Allyn Young on what Marshall described as the 'Cournot problem' (the compatibility of competition with increasing returns). It was written for a two-volume *festschrift* for Brian Loasby, and in several ways connects with the argument of Chapter 1 in this book on 'History and Equilibrium'. A major feature of Chapter 11 is its stress on the fact that the three economists being compared all saw progress and the division of labour as somewhat incompatible with equilibrium theorising; while in addition they ranked progress from application of the division of labour and increasing returns as of far greater importance than issues of competition and market equilibrium, particularly with respect to aspects of human welfare and progress. Those familiar with Brian Loasby's work will appreciate the aptness of this chapter as a tribute to his research.

Chapter 12 deals with the influence of Hegel on Marshall. It was published in 1990 in *Economie Appliquée*, though an earlier draft was presented at a history of economics conference in the 1970s. As explained in its note 3, it arose from my desire to square, if at all possible, Hegel's explicit rejection of the view, *natura non facit saltum* (which Marshall took as his motto on the title page of the *Principles*) with Marshall's claims in the preface of that book that his work owed much to Hegel's philosophy, particularly his *Philosophy of History*. The essay concludes that the young Marshall had indeed used Hegel's *Philosophy of History* on a number of points, but that visible Hegelian influence had virtually disappeared from Marshall's work by the start of the 1890s and that the little there was, was in fact gradually removed in successive editions of the *Principles*. Moreover, Chapter 12 acts as an illustration of Marshall's peculiar use of his sources; that is, he tended to milk them for his own special requirements even if such use of their views generated conflicts with their overall system of thought.

Chapter 13 explores Marshall's use of the economics of two authors who published their economic work in Australia. The first of these Australians, W. E. Hearn, is relatively well known. Hearn's *Plutology* was admired by the young Marshall as a useful text for beginners, while his relatively early study of its contents undoubtedly assisted the strong evolutionary thrust which marked much of his economic work. The other Australian influence on Marshall's work came from the economic writing of David Syme, with special reference to his *Outlines of an Industrial Science* (1876). Both Hearn's and Syme's book were annotated by Marshall – the necessary point of departure for suggesting their influence on Marshall's economics. In particular, a passage from Syme's *Outline* marked by Marshall in pencil and reproduced in Chapter 13 (below, p. 203) anticipates an income and a substitution effect of a price rise in bread, the subject for analysis in Marshall's famous remarks on what became known as Giffen goods, the source for which has never, as far as I know, been successfully traced to Giffen's extant writings. This in itself makes the essay worth reprinting, while its rather obscure place of publication in an early issue of the *History of Economic Thought Society of Australia Newsletter* probably accounts for the fact that its findings on this score were never taken up by the literature. An appendix to Chapter 13 notes all the passages which Marshall marked in his copies of these two Australian economics books.

Marshall's views on women in relation to economic progress are the subject of Chapter 14. As indicated previously, it originated in a workshop on feminism and political economy in Victorian England organised in May 1992 by the Centre for the Study in the History of Economic Thought at the University of Sydney. Its proceedings, with some additional material, were published in 1994 by Elgar (Chapter 23 on Clara Collet also comes from this book, though it was not part of the original workshop). More specifically, Chapter 14 examines Marshall's views on the role of women in human capital creation (nurture and education), and the manner in which women's paid employment may hinder that task to the general detriment, in Marshall's view, of society as a whole. In addition, Chapter 14 discusses Marshall's 'Social Darwinist' opinions on marriage, heredity, race progress and social progress, which can only be dimly perceived in an unsystematic way in various footnotes scattered through his *Principles*. Chapter 14 benefited from my detailed study of Marshall's work for the Labour Commission (see Groenewegen 1994; 1995: ch. 11, 360–71; 1996) as well as from my reading of most of the eugenics and evolutionary texts which either were present in Marshall's library or cited in his work. Chapter 14 thereby contributes essential background to Marshall's notorious misogynist attitudes. Moreover, it provides yet another illustration of the breadth of Marshall's political economy, from which such issues were never cast out as 'non-economic'.

Marshall's evolutionary views are further and more systematically explored in Chapter 15. *Pace* Chapter 13, it elaborates on the potential influence of Hearn's *Plutology* (probably the first economics text to make explicit use of Darwin's theories to elucidate economic principles) in this context. Chapter 15 also

expands on the problematic issue of time in economics with special reference to increasing returns equilibrium economics (a topic also broached in Chapters 1 and 11). In its conclusion, it draws attention to an exception explicitly noted by Marshall to his motto, *natura non facit saltum*, which was suggested by Marshall's intensive study of industrial facts and not in anyway inspired by Hegel's criticism of that principle (discussed in Chapter 12, pp.181–2 and n3). Some of the specific biological content of Marshall's *Principles* and his other work is likewise considered in Chapter 15, a special point of interest given his self-acknowledged lack of expertise in the field and his famous claim that biology is (or ought to be) the mecca of good economics. First published in 2001, Chapter 15 reprints the most recent papers in this volume.

Chapter 16 is a more technical piece on Marshall's economics, dealing with Marshall on taxation. It was initially prepared for a 1990 conference on Marshall at Cambridge as part of the centenary celebrations of the first publication of Marshall's *Principles of Economics*. Despite this specific purpose for which it was written, Chapter 16 covers Marshall's tax analysis from all parts of his work, thereby providing the first comprehensive overview of Marshall's taxation economics. After a brief survey of the essentials of the British tax system for 1870–1920, Chapter 16 analyses Marshall's general taxation principles (including his views on optimal taxation); examines his preferences for specific tax instruments and reviews his contributions to the theory of tax incidence. Analysis of Marshall's views on taxation is especially instructive because it sheds additional light on some of the more innovative aspects of his theory of value and price. These illustrate his caution in providing policy recommendations, thereby reiterating his view that no simple economic doctrines can be true and useful. A further interesting aspect of Chapter 16 is that it reveals a distinct support on Marshall's part for Smith's rather incomplete and imprecise incidence analysis, as compared to the more abstract and precise tax incidence conclusions derived by Quesnay and Ricardo. On the last point, Chapter 16 therefore supplements the contents of Chapter 18, which deals more generally with Marshall's opinions on Ricardo.

Omissions

This introduction should also indicate that the thirty-two chapters included in both volumes of *Classics and Moderns in Economics* by no means represent my total output on the economics of the classics and moderns of the nineteenth and twentieth centuries. From my writings on classics, for example, if these are defined as nineteenth-century writers before 1870, I have omitted papers on Saint-Simon, on Mangoldt, on Carlyle, on Roscher and on Ruskin (of which the last is still unpublished). In connection with Part II on nineteenth-century moderns, I have omitted a great deal more of my work. In the first place, I have deliberately left out a number of my articles on Marshall, largely on the ground that much of their content was duplicated in my biography of Marshall (Groenewegen 1995) which is still in print and, in any case, very accessible.

This includes an article on the establishment of the Cambridge economics and politics tripos (Groenewegen 1988), one on Marshall's teaching practices in economics at Cambridge (Groenewegen 1990), one on Marshall's 'weird and wonderful partnership' with Mary Paley Marshall (Groenewegen 1993), one on Marshall's work on the 1890s Labour Commission (Groenewegen 1994), some shorter pieces on Marshall published in the first three issues of the *Marshall Studies Bulletin*, and a piece on the centenary of publication of Marshall's *Principles* in *Australian Economic Papers* (Groenewegen 1992). I have also omitted several papers on aspects of Australian economics suitable for this part, as well as papers on Henry George and J. B. Clark. Likewise, in connection with the twentieth-century moderns for Part III, my surveys on radical economics and on taxation economics for the Academy of Social Sciences in Australia (Groenewegen 1979; 1983) could have been included, as well as papers on the Australian experience with respect to the post-1945 internationalisation of economics (Groenewegen 1997b) and on the number of women contributors to Australian economic journals (Groenewegen and King 1998). These would all have distinctly enhanced the Australian flavour of the volume, and greatly added to its length. Whether my actual choice of material for inclusion has already been too generous is a judgement left to my readers. My choice has been predicated on whether, in my view, the pieces reprinted have still something worthwhile to offer, particularly when this has not been sufficiently recognised because of relative inaccessibility of the original material.

I should indicate as well that the material reprinted has not been materially altered. Changes that have been made were to correct spelling errors or poor expression, and to make explicit cross-references to material included in this volume (or to eliminate cross-referencing which was no longer apt). Where relevant, I have also added brief indications (in square brackets) of factual errors and provided material on actual publication when that was still imminent in the originally printed version. A now-antiquated referencing system used in the original version of Chapter 1 has been altered. Readers are therefore confronted with the text of the material as originally published. A companion volume of my essays on eighteenth-century economics (and before) was published by Routledge in 2002.

Concluding comments

Editing these papers as part of preparing the final manuscript has been an interesting experience. It enabled me to review a great deal of my academic work in the history of economics written over the last four decades. What surprised me was on how little of the specific historiographical contents of this work I had changed my mind. Only some minor factual errors had to be corrected – on Steuart's economics for Chapter 2 and in connection with Hegel in Chapter 12. Another, more general change may be noticed. Over the years since 1984 I have acquired much greater admiration for Marshall's subtle economics from my careful study of his life and work. Moreover, my views on the importance of

history and institutional formations for gaining a real understanding of the workings of an actual economy have considerably strengthened. In conclusion, the enjoyment and other benefits I have received from revisiting my history of economics work will, I hope, be matched by the usefulness of this collection for historians of economics of my own generation and, more importantly, of the next generation, who largely come to the material herein reprinted for the first time.

Appendix

Chapters in chronological order by year of publication

Year	*Chapter*	*Short title*
1967	2	Steuart and Marx
1972	6	Three notes on Ricardo
1973	3	Origin of phrase 'supply and demand'
1982	1	History and political economy: Smith, Marx and Marshall
	7	Thomas de Quincey: 'faithful disciple of Ricardo'?
1983	24	J. M. Keynes (1883–1946)
	27	J. A. Schumpeter (1883–1950)
	28	Joan Robinson (1903–83)
1987	8	Marx and classical political economy
1988	13	Marshall and Australian economics
	5	Pickering's Malthus
1990	10	Neoclassical value and distribution theory
	12	Marshall and Hegel
	16	Marshall on taxation
1991	19	Marshall and the history of economic thought
1993	18	Marshall on Ricardo
1994	14	Marshall, women and economic development
	23	Clara Collet (1860–1948)
	30	Jacob Viner and the history of economics
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References

Bharadwaj, Krishna (1978) 'The Subversion of Classical Analysis: Alfred Marshall's Early Writings on Value', *Cambridge Journal of Economics*, 2(3) 253–71.

Groenewegen, P. D. (1979) 'Radical Economics in Australia: A Survey of the 1970s', in F. H. Gruen (ed.) *Surveys of Australian Economics*, Sydney: Allen and Unwin, vol. 2, 171–223.

——(1983) 'Australian Taxation Policy', in F. H. Gruen (ed.) *Surveys of Australian Economics*, Sydney: Allen and Unwin, vol. 3, 191–249.

——(1988) 'Alfred Marshall and the establishment of the Cambridge Economics Tripos', *History of Political Economy*, 20(4) 627–67.

——(1990) 'Teaching Economics at Cambridge: Alfred Marshall as Lecturer in Political Economy', *Scottish Journal of Political Economy*, 37(1) 40–60.

——(1992) 'Alfred Marshall's *Principles of Economics*: A Centennial Perspective from the Antipodes', *Australian Economic Papers*, 31(59) 9–24.

——(1993) 'A Weird and Wonderful Partnership: Mary Paley and Alfred Marshall, 1877–1924', *History of Economic Ideas*, 1(1) 71–101.

——(1994) 'Alfred Marshall and the Labour Commission', *European Journal of the History of Economic Thought*, 1(2) 273–96.

——(1995) *A Soaring Eagle: Alfred Marshall 1842–1924*, Aldershot: Edward Elgar.

——(1997a) 'Economics Does Have a Useful Past, and yes, History Is Important', in A. Heertje (ed.) *The Makers of Modern Economics*, Cheltenham: Edward Elgar, vol. 3, ch. 1.

——(1997b) 'The Australian Experience', in A. W. Coats (ed.) *The Post-1945 Internationalisation of Economics*, annual supplement to *History of Political Economy*, 28, Durham NC: Duke University Press, 61–97.

——(2001) 'Review of Collected Works of Robert Torrens', *Contributions to Political Economy*, 20, 99–105.

——(2002) *Eighteenth-century Economics*, London: Routledge.

Groenewegen, P. D. (ed.) (1996) *Official Papers of Alfred Marshall: A Supplement*, Cambridge: Cambridge University Press for the Royal Economic Society.

Groenewegen, P. D. and King, Susan (1998) 'Voices from the Journals: Women Contributors to four Australian Economic Periodicals', *Economic Papers*, 17(1) 13–31.

Groenewegen, P. D. and McFarlane, Bruce (1990) *A History of Australian Economics*, London: Routledge.

Robinson, Joan (1975) *Collected Economic Papers*, 2nd edn, vol. 2, Oxford: Blackwell.

Schumpeter, J. A. (1912) *Economic Doctrine and Method: An Historical Sketch*, trans. R. Aris, London: Allen and Unwin, 1954.

——(1954) *History of Economic Analysis*, London: Allen and Unwin.

Stigler, G. J. (1965) 'Textual Exegesis as a Scientific Problem', *Economica*, n.s., 32, 446–50.

Thweatt, William O. (1983) 'Origin of the Terminology "Supply and Demand"', *Scottish Journal of Political Economy*, 30(3) 287–94.

Part I
Classics

1 History and political economy

Smith, Marx and Marshall[1]

The opportunity to give an inaugural lecture presented to a newly appointed professor is a privilege which also entails some traditional responsibilities. The first of these duties is that, in filial piety as it were, some tribute is paid to predecessors and some remarks are presented on the tradition which is being followed. The second feature of an inaugural lecture is that it should present a broad overview of the discipline in which the appointment has been made, frequently with special reference as to how it should be studied, and also how it should be taught. In addition, such a lecture should reflect the tastes and specialties of the new incumbent of the chair, and thereby display in public some of the reasons for the appointment.

This last aspect of the tradition associated with inaugural lectures presented me with a difficult choice. Should I follow in the footsteps of Professor Alan Prest, who in his 1972 inaugural lecture at the London School of Economics, reviewed the challenges of the 1970s faced by students of public finance? There are even greater challenges faced by the public finance student in the 1980s, and it was tempting to comment on them, particularly with reference to what I see as misguided and unsubstantiated theories produced by the so-called new 'supply-economists' and public choice theorists who are becoming increasingly influential voices in public sector economics. This temptation was, however, resisted, and the feature of political economy to which I wish to draw your attention in this lecture is related to my other major interests in the subject: classical political economy and post-Keynesian economics. My work in these areas provided the inspiration for the title and content of this lecture. It also provides an opportunity to present some ideas on how the subject ought to be studied, while in addition it allows me to pay tribute to a common characteristic which was shared by my four illustrious predecessors to the chair of economics I now hold.[2]

It is convenient to begin with my predecessors. My immediate predecessor, Emeritus Professor Simkin, held the chair for a decade from 1970 to 1980. His predecessor, the late S. J. Butlin, vacated the chair of economics which he had held at Sydney since 1946 (as acting Professor since 1943) for a chair in economic history, first at Sydney and then at the Australian National University. His predecessor, R. C. Mills, was appointed to the chair of

economics in 1921 when he succeeded the foundation Professor of Economics at this university, R. F. Irvine, who had been appointed in 1912. Although, in strong contrast to the University of Melbourne, there was no chair in economics at this university in the nineteenth century, the history of serious political economy study by Sydney University academics does go back to the very foundation of the university. As Craufurd Goodwin (1966: 547–56) has shown in his *Economic Inquiry in Australia*, two of the three foundation professors in Australia's oldest university – that is, Morris Birkbeck Pell and John Woolley – had a decided interest in economics in their teaching and in their intervention in the public life of the colony of New South Wales. This, as Michael White (1982) has recently shown, had important consequences for the education of the young Jevons, who was then employed by the Sydney mint. Lectures on political economy were given on a more formal basis in the arts curriculum by John Paterson in 1866–7, and in the 1880s and 1890s by Professor Francis Anderson. The teaching of political economy and economics at Sydney University has therefore a long history, but this topic cannot be further pursued since it provides material for a lecture in itself.

Let me therefore return to my immediate predecessors: Irvine, Mills, Butlin and Simkin. Those who are familiar with their biographies,[3] or who recall at least some of them personally, will know that they were quite different personalities, and exercised in many ways quite distinct influences on the development of studies in economics at the University of Sydney, initially within the arts degree structure, and later as formalised within the degree of Bachelor of Economics. But despite these substantial differences, a common thread runs through their approaches to the study of political economy: an enormous love of history and strong appreciation of the importance of historical knowledge for students of political economy. If there is a Sydney tradition in the teaching of economics, it is clearly contained in the strong association between history and political economy which my predecessors professed. Let me illustrate this briefly.

For Irvine, the importance of history in the study of political economy was explicitly stated in his important lecture, *The Place of the Social Sciences in a Modern University,* which he delivered in 1914 and in which, in particular, he drew attention to the importance of the institutionalist tradition for serious students of the science (Irvine 1914). For R. C. Mills, as S. J. Butlin (1958: 8–9) has pointed out, his economics, 'applicable to problems of practical policy … was rooted in an historical approach to economic doctrine', as is particularly reflected in his magnum opus, *The Colonisation of Australia 1829–1842*, first published in 1915 but recently reprinted by Sydney University Press (Mills 1915). The name of Butlin remains almost synonymous with Australian economic history, and the qualities of the late S. J. Butlin in this regard need no further enumeration. The monuments to his historical scholarship are his *Foundations of the Australian Monetary System 1788–1851* (Butlin 1953a), the history of the ANZ Bank (Butlin 1961) and the two-volume history of the war economy 1939–45 (Butlin 1953b; Butlin and Schedvin 1977). Finally, I think

that the most important work of my immediate predecessor, Emeritus Professor Simkin, is not his textbook on economic theory, *Economics at Large* (Simkin 1968a) which has now been virtually forgotten, but his very important *The Traditional Trade of Asia* (Simkin 1968b), which was not only well received by economic historians but by historians in general, including a historian of the culinary arts (Tannahill 1973: 105, 110). Apart from their practical work in the field of history and its importance in economics, my four predecessors to the chair in economics were also keen students of the history of ideas, and strongly supported the Sydney tradition in the teaching of the history of economic thought, which until 1960 was regarded as so essential in the Faculty of Economics that it was compulsory for all its graduates.

Those familiar with my work in teaching and research will know my love for the history of economics: I might add that, indeed, it was history which led me to the study of economics when as a high school student in the 1950s I realised that an understanding of modern world history could not be achieved without considerable knowledge of economics. My subsequent study of economics has taught me that the inverse of this proposition is also true, an understanding of modern economics and its practical application cannot be achieved without a solid knowledge of history in its manifold aspects. The title of this lecture therefore reflects an important aspect of the Sydney tradition in the teaching of economics which I intend to follow; it reflects my strong interest in the history of economic thought; it also reflects my views on the teaching of economics and political economy as characterised by my work in the reconstruction of political economy on what are called post-Keynesian lines.

A few preliminaries must, however, be removed by way of further examination of my title in order to put the subject matter of this lecture into its proper perspective. I have explained my choice of the first part of my title, 'History and Political Economy'; I must now indicate my reasons for including the second part: 'Smith, Marx and Marshall'. It can be said of course that this is self-evident, given my interest in the history of economic thought. These three names reflect that interest, since after all, Smith, Marx and Marshall represent three important traditions which all were immensely influential on the further development of the science. However, the names of Smith, Marx and Marshall do not only conjure up crucial chapters in the history of economics, which relate them indirectly to my title of history and political economy; this association between them and my title is more direct and more fundamental. All three of these great economists were directly involved in history and political economy, since their major works involved the application of a historical method for the elucidation of the basic laws of the science of political economy. All three were therefore more than mere economists – they were superb economic historians, philosophers and social scientists, who saw their subject matter as the study of 'man in society' and who viewed that subject matter as a source for action and not just contemplation. There are other broad similarities in their work, but their development would take me too far from the subject on which I wish to concentrate. This should now be explained.[4]

My selection of Smith, Marx and Marshall as part of the title of my address on history and political economy is not in order to concentrate on this heroic theme which runs through their respective life work. My purpose is less ambitious: I wish only to examine one aspect of it, which highlights differences rather than similarities in their approaches to the study of political economy. In the remainder of this lecture I want to examine the manner in which they faced and tried to resolve the theoretical problem of blending analytical considerations with the force of history. In short, I wish to present a brief comparative study of their diverse attitudes to the analytical problem which Joan Robinson (1974) has summarised by the rubric: *history versus equilibrium*.[5] After a brief examination of the nature of this problem, I provide some comments on the manner in which it was handled by Smith, by Marx and by Marshall, before presenting some final conclusions on the lessons to be learnt from this comparative study.

History versus equilibrium

Those familiar with the literature of modern economics will know that the problem of history versus equilibrium underlies the theoretical debates between post-Keynesian economists and their more orthodox counterparts, who are frequently described by epithets such as 'mainstream economists', 'neo-neoclassicals', or, if the expression is pardoned, 'bastard-Keynesians'. This, and not the difficulties embodied in the theory of capital of Böhm-Bawerk and Wicksell, Samuelson and Solow, was at the heart of the famous Cambridge controversies which are still far from concluded. It is true that the early skirmishes were fought on the narrow terrain of the pure theory of capital, and that certain illogicalities of the dominant theory were the first casualties in this theoretical and practical struggle of economic ideas. As Joan Robinson (1975: xiv) has pointed out, these casualties are important only in a negative sense: they clear the way for better theory to develop. A further, and more essential precondition for such development is a sound appreciation of the limitations associated with the concept of equilibrium and the difficulties associated with analysis in historical time. This is the major aspect of modern, post-Keynesian economics, and influences not only the theory of capital and distribution, but also the theory of price determination under modern industrial market conditions, the theory of business cycles, of growth, of inflation and of unemployment.

Following Joan Robinson (1974: 49–50), three features of this issue may be quickly summarised.[6] First, let us briefly examine the definition of equilibrium. It has been defined by one leading general equilibrium theorist, Professor Frank Hahn, in the following terms: 'Prices and input-output combinations are said to be equilibrium prices and input-output combinations if, when they rule, no economic agent has any inducement to change his method of production, and no input is in excess demand'. This definition implies that all economic agents completely realise all the economic consequences of all the actions they may take. It requires perfect foresight, eliminates uncertainty (and hence money),

and misrepresents the real nature of plans such as those underlying, for example, business investment and household saving, which, because their consequences are spread over future time, are liable to uncertainty because times may change. In short, the notion of equilibrium interpreted in this manner is incompatible with actual history.[7]

A second curious feature of the concept is that equilibrium is seen as the end of an economic process. By trading and re-trading (re-contracting) in a market, groups of individuals with initial endowments of ready-made goods or stocks of productive services, end up with a selection of goods that each individual prefers as compared with the endowment at the start of the process. If this story is interpreted as an historical process, which no-one of course can logically do, there is the implication that in the past period, the equilibrium was not established. This raises the question, as Joan Robinson (1974: 49) puts it: 'Why are the conditions that led to a non-equilibrium position "today" not going to be present in the future?'.

Third, and in some ways most importantly, the concept is based on a mechanical analogy which is inappropriate to economic analysis. Mechanical movements in space which can lead to natural equilibria in the theory of mechanics cannot be used by analogy to explain economic transactions taking place in time, since time, unlike space, is a one-way street, where we can only go forward. The past in economics can be undone, if at all, only by costly and frequently lengthy adjustments. There is therefore a fundamental asymmetry in the notion of equilibrium as it is applied in economics, which is strikingly different from the more symmetrical approach to equilibrium analysis in mechanics (for example, the pendulum). The dilemma raised by these differences is illustrated by the 'putty-clay' debate in capital theory, where the putty-Meccano set-steel-butter school of thought treated (and continues to treat) time as if it were a two-way street perfectly analogous to space. Another example is the development of the notion of 'logical time' in economics, which bears no resemblance to historical or clock time, and the application of which is highly dangerous if its limitations are not fully understood.

A knowledge of history eliminates this potential source of confusion and inaccurate or misleading application of theory to policy prescription. The issue, although seemingly self-evident, and in some respects trivial, is nevertheless highly important. A policy issue of the 1970s illustrates this. It is widely accepted, although there is considerable difference of opinion about the precise quantitative effects, that the fast increase in real wages in 1974 in Australia was partly responsible for the rapid rise in unemployment, especially in the second half of that year. From that well-established fact, the argument that reductions in real wages would quickly restore full employment 'equilibrium' suggested itself to some economists, who thereby clearly revealed their lack of historical sense, because they failed to appreciate the irreversibility of the past. A sharp cut in real wages, as suggested, for example, in the IMPACT model (see Dixon *et al.* 1979: 23–8) would not restore the employment opportunities which had been lost through employers responding to higher labour costs in 1974 with

re-organisation of the operation of their plant or the technology embodied in it. That re-organisation could not be costlessly undone and was for all practical purposes irreversible. At best, therefore, lower real wage costs may improve the availability of job opportunities in the future in those industries where such substitution possibilities are readily available.

The above illustrates why I regard historical knowledge as an important input into economics.[8] Historians, familiar with the analysis of processes through time, will never eliminate the realities of time from their analysis. This brings me back to Smith, Marx and Marshall. As is so often the case in the literature of economics – a feature of this literature which makes serious study of its history such an important part of a thorough economic education – Smith, Marx and Marshall were all in their own way fully acquainted with the important problem of history versus equilibrium, and needless to say, all three attempted to solve it in their writings on political economy. We must therefore now briefly investigate their attempted solutions to this problem.

Adam Smith and equilibrium

Adam Smith is frequently described as a pioneer of equilibrium analysis (for example, by Blaug 1964: 41–4). A more recent, and by many, highly regarded commentator on Adam Smith, Professor Samuel Hollander (1973: ch. 4, esp. 114–16) has gone so far as describing Smith as an important originator of the general equilibrium tradition, a contribution which most historians more correctly attribute to Walras if we interpret the notion of general equilibrium in the manner of Hollander.[9] Such observations on the nature of the economics of the *Wealth of Nations* are largely based on what I perceive to be a misreading of the contents of Smith's analysis of natural and market prices which he presented in Book I Chapter 7 of his magnum opus.

The commentator who wishes to present Smith as the 'inventor' of what later became known as short period Marshallian competitive equilibrium in the goods market – in which (market) price is equated with minimum average cost – is immediately faced with one problem. Smith studiously avoids use of the word 'equilibrium' in this analysis, as he indeed does in the whole of his work, and a careful reading of that analysis, together with some knowledge about his intellectual background, suggests that this omission was probably quite intentional because Smith, as the superb historian he was,[10] would have regarded this type of mechanical analogy as inappropriate to the phenomenon he was studying.

Let me explain this point further. It is still insufficiently appreciated by many economists that Smith, now largely remembered for his work on political economy, was in actual fact a person with an extremely wide educational background; versed in the natural sciences, in mathematics, in literature and in the arts, as well as in all the social sciences, including of course, history and the developing science of political economy. It is his acquaintance with the natural sciences which is essential to demonstrate his familiarity with the concept of equilibrium. We know that Smith received a thorough introduction to the

natural sciences at Glasgow University in the 1730s. In 1755, his second published contribution (1755: 17–18) favourably compared the physics and astronomy of Boyle and Newton with that of Descartes. Shortly thereafter, in any case before 1758, he completed his celebrated *Principles which Lead and Direct Philosophical Enquiries Illustrated by the History of Astronomy* (posthumously published by his friends Joseph Black and James Hutton in 1795 in the *Essays on Philosophical Subjects* which also include his unfinished *History of the Ancient Physics*) (Smith 1795). His library, as can be seen in Mizuta's catalogue (Mizuta 1967) included all the major works of Newton, and many other works on physics, mathematics and mechanics. He was, therefore, certainly aware of the concept of equilibrium, as used in mechanics.[11]

It is even more interesting to note that Smith's contemporaries in economics, with whom he was personally acquainted, were using mechanical analogies, including that of equilibrium, in their discussions of economics. These include David Hume, Quesnay and especially Turgot. Turgot used the example of a spring in his celebrated exposition of the law of variable proportions (Turgot 1767: 112), and in his discussion of the various employments of capital in his *Réflexions* (Turgot 1766: 76–87) he explicitly employed the notion of equilibrium ('une espèce d'equilibre') by way of analogy using an example of the properties of communicating vessels. The word 'equilibrium' is also used in one of his letters on the grain trade (1770: 175 and cf. 167–8) in the context of his 'iron law' of wages, as well as in a letter to Hume (25/3/1767) on the same subject (see Rotwein 1955: 211–12). Although, to my knowledge, Quesnay did not use the actual word 'equilibrium' in his economic writings, one version of his important *Tableau Economique* in its introduction provides all the characteristics of equilibrium analysis (Quesnay 1763: 687–8), and an analogy is presented between the economic system as analysed there and a machine.[12] For Hume, similarly, although the word 'equilibrium' was not used,[13] equilibrium analysis was presented in both the theory of interest (Hume 1875: 323–4, and cf. Patinkin 1965: 366–72) and, more importantly, in his celebrated exposition of the automatic mechanism of specie distribution (Hume 1875: 332–3; and cf. Viner 1937: 84–5). Smith was of course familiar with these aspects of Hume's work, including the latter.[14]

A careful reading of the text of Smith's discussion of market and natural prices (Smith 1776: 72–81) supports the contention that Smith was wary of the application of mechanical analogies to economic analysis. This can be briefly demonstrated. Although Smith clearly discusses the mechanism (reactions of supply to excess or below normal profits) by which actual market prices gravitate towards the natural prices, and although he indicated in his preliminary treatment that this adjustment process is speedy (Smith 1776: 74–7) this position is later substantially qualified for the situation where market price exceeds natural price. The relevant passage is worth quoting:

> But though the market price of every particular commodity is in this manner continually gravitating, *if one may say so*, towards the natural price,

> yet sometimes particular accidents, sometimes natural causes, and sometimes particular regulations of police, may, in many commodities, keep up the market price, *for a long time together*, a good deal above the natural price.
>
> (Smith 1776: 77, my italics)

The asymmetry of this analysis is striking, and is clearly taken very seriously by Smith, who spends the remaining pages of the chapter developing it. His position contrasts very strongly in this respect with the similar analysis by Turgot (1767: 120, n16) in which the latter argued for the equality of market and fundamental (natural) price in a perfectly symmetrical manner. It should also be noted that Smith emphasises long adjustment periods, and, in one example of gravitation of a market price to its natural price, talks in terms of an adjustment period of ninety years (Smith 1776: 220).[15] The mechanical analogy of the pendulum used in this connection with its symmetrical movement is therefore not applicable to Smith's analysis of the effects of competition on market prices.

In my view, the most plausible explanation for Smith's suspicion of 'equilibrium analysis' is the view that has been presented here: Smith's superb appreciation of the real frictions in economic life as revealed by historical experience led him to place no faith in the mechanical analogies which his contemporaries, especially Turgot, had introduced into the subject. To summarise quickly in the context of this lecture: Smith's solution to the problem of history versus equilibrium was to refrain from using the concept of equilibrium mechanically.[16]

Marx and equilibrium

Marx's credentials as a historian cannot be questioned, even though many of his conclusions as an economic historian are still the subject of considerable controversy. His major completed piece of work on political economy, the first volume of *Capital*, published in 1867, bears tribute to his skilful blending of abstract theory and historical analysis. This is illustrated in his discussion of the struggle over the length of the working day, his analysis of the implications of technical innovation in the machine tool industry, his examination of the employment consequences of technical progress, and his review of the early history of capitalist development in the discussion of primitive accumulation. It is less frequently appreciated, and by some indeed suppressed, that Marx was a skilful equilibrium economist, though in this context the purpose of his equilibrium analysis is frequently misunderstood.

To illustrate this last proposition, reference has to be made to the unfinished[17] Part III of the second volume of *Capital*, edited by his friend Friedrich Engels and published in 1885. This contains Marx's famous theory of simple and expanded reproduction, the last and more important of these analyses occupying only one chapter of the work. Despite its unfinished nature, the merits and implications of this theoretical work were quickly appreciated by Marxist

economists such as Rosa Luxemburg (1936; 1951; and cf. Robinson 1951); by the Russian economists Feldman and Preobrazhensky in the 1920s, and by the Polish economists Oscar Lange and Michal Kalecki in the 1930s. Its merits were also recognised by the Kiel school which flourished in Germany prior to the rise of Hitler, as demonstrated by the work of Lowe, Burchardt and the (then) young Wassily Leontief (see Clark 1977; Samuelson 1967: 617–18). The impact of Marx's reproduction models was even felt in Japan in the 1930s in the work of Kei Shibate in the *Kyoto Economic Review* (1933).

More recently, Morishima's work on Marx's economics (1973; 1974) has given the highest accolades of praise which modern mathematical economics can bestow on anyone's contribution. Marx, in Morishima's opinion,

> should … be ranked as high as Walras in the history of mathematical economics. … However, unlike Walras, Marx constructed a two stage general equilibrium theory. … It is no exaggeration to say that before Kalecki, Frisch and Tinbergen no economist except Marx, had obtained a macro-dynamic model rigorously constructed in a scientific way.
>
> (Morishima 1973: 1–3)

Unfortunately, as is often the case in the mathematical formulation of classical political economy,[18] some of the essentials of Marx's argument were lost, and for the purpose of this lecture one of these essentials must be pointed to. In his analysis of 'extended reproduction', Morishima (1973: ch. 10) carefully analysed the conditions for an equilibrium growth path established by Marx, but in so doing, as he himself admits,[19] failed to discuss some of Marx's conclusions derived from the analysis.

The essentials of Marx's great contribution, now familiar to all economists after the work of Harrod and Domar,[20] can be simply summarised following Joan Robinson (1964):

> When a constant proportion of income is added to capital every year and capital bears a constant ratio to income, then income expands continuously at a constant proportional rate. Thus when 10 per cent of income is invested every year, and the stock of capital is 5 years' purchase of net income, then the stock of capital, the rate of investment per annum, consumption per annum and net income per annum, all expand cumulatively at 2 per cent per annum.
>
> (Robinson 1964: 74)

This theorem is now commonplace. However, the important question it raises is: to what use can the model be put? The answer to this question has been provided by Joan Robinson with consummate Hegelian skill:[21]

> The meaning of a proposition depends very much upon what it denies. In this respect the model is two-sided. On the one hand, it shows that there is

> no inherent logical impossibility in conceiving of a capitalist system enjoying continuous expansion – it contradicts the view that there is an inescapable necessity for capitalism to run down. On the other hand, the model shows that certain special conditions are required for continuous expansion, and so it contradicts the view that there is, in general, an automatic tendency for capitalism to keep going.[22]
>
> (Robinson 1964: 74)

The importance of the second proposition is greater than the first, as can be demonstrated when history is introduced into the argument.[23] This was clearly recognised by Marx (1957) when he explored the implications of his equilibrium growth models. As he pointed out, the disproportionality possibilities inherent in the model (Marx 1951: 409–11, 466–9, 503–5) are greatly increased under the anarchic conditions of capitalist production as compared with socialised, planned production (Marx 1951: 424–5). When the model is disaggregated, these break-down possibilities are even greater. Marx therefore explicitly denied the existence of an automatic mechanism that would allow the restoration of an equilibrium position when the initial equilibrium had been disturbed.[24]

What, then, was Marx's solution to the problem of history versus equilibrium? Unlike Smith, Marx fully realised the theoretical importance of equilibrium analysis – as he also realised the importance of mathematical modelling (see Smolinsky 1973) – for which his work in the theory of reproduction provides the perfect illustration. However, unlike many modern equilibrium economists, Marx was fully aware of the limitations of equilibrium analysis arising from the conflict between history and equilibrium. He therefore valued equilibrium propositions for what they denied rather than for what they affirmed. Marx's careful inferences from equilibrium analysis therefore reveal the possibilities of a peaceful co-existence of history and equilibrium.

Alfred Marshall and equilibrium

Marshall the equilibrium economist needs no introduction. His contributions to this subject are reproduced in varying degrees in all the modern texts on microeconomic principles. His actual contributions can be studied (and should be studied) in the pages of his *Principles of Economics* (Marshall 1920), more clearly in his *Pure Theory of Foreign Trade and of Domestic Values* (Marshall 1879) and, thanks to Professor Whitaker and the Royal Economic Society, in his early economic writings (Marshall 1975). His faith in equilibrium is illustrated by the famous metaphor of the balls in the bowl of Appendix I (Marshall 1920: 818–19), rigorously formulated in his Mathematical Appendix and symbolised by the Marshallian cross of supply and demand drawn daily in economics classes all over the world.

Marshall the economic historian requires some reminders. His most accessable economic history is now hidden in Appendix A of the definitive edition of

his *Principles*, dethroned from its more prominent place in Book I of the early editions. The much richer economic history of the later publications (written earlier) such as the now rarely consulted *Industry and Trade* (Marshall 1919) and *Money, Credit and Commerce* (Marshall 1923) are testimony to his powers in this subject. His love of history is also clearly documented in his early writings, (Marshall 1975: vol. II, esp. part III.i) and his wife's recollections about his early lectures at Cambridge which contained history 'mixed-in with the' theory (Marshall 1947: 20). Why is Marshall the equilibrium theorist now remembered, and why is Marshall the economic historian now largely forgotten and ignored?

The answer to this question provides the clue to Marshall's approach to the problem of history versus equilibrium. It can be deduced from three sources: first, the variations on the subject which occurred in the prefaces to the successive editions of his *Principles*, second, his ambivalence on the subject can be deduced from his papers on methodology included in the *Memorials* reprinted after his death (Pigou 1925), and third, they are crystallised in Marshall's own anecdote about his 'patron saint' as told by John Maynard Keynes (1924: 37–8) in his biographical memoir of Marshall. These three indicators of Marshall's difficulties with history and equilibrium can be briefly examined (the best analytical indication is Appendix H of his *Principles*).

An examination of the prefaces to the eight editions of Marshall's *Principles* – a task greatly facilitated by the magnificent variorum edition prepared by his nephew Guillebaud (1961) – provides an interesting indication of Marshall's reactions to his readers' opinions on the objectives of his *magnum opus*. The historical nature of economics, characterised by the importance of continuity in economic development, is taken for granted in the preface to the first edition (reprinted in Marshall 1920: ix). However, criticism from some readers that 'the prominence of the phrase "the equilibrium of demand and supply" in Books V and VI … suggested … a mechanical treatment of economic problems' (Marshall 1898a: v) had to be combated, and these readers were politely referred to the historical and methodological introduction then still in Book I. By the time of the eighth edition, the importance of history and economic biology to serious economic study is emphasised even more (Marshall 1920: xiii–xiv) but the mechanics inherent in equilibrium analysis is now defended as proper procedure in a volume of foundations as the *Principles* was clearly intended to be. The explicit recognition of this was not included till the sixth edition (1910) (see Guillebaud 1961: II, 25). By 1920 Marshall appears therefore to have realised that in his main work equilibrium had triumphed over history.

The battle between the two is even more clearly illustrated in Marshall's methodological pieces (Marshall 1885; 1897; 1898b). The first of these, Marshall's inaugural lecture given after his election to the chair of economics at Cambridge, was largely a methodological plea to all students of economics for historical awareness and the need to study the facts (1885: 154–5). It also provided condemnation of the hasty application of theory (1885: 162) and

emphasised the need for historical judgement, thereby recognising the services and the exaggerations of the historical school (1885: 170–1). This position was more or less repeated in Marshall (1897: esp. 296–9).

In the subsequent article on distribution and exchange published in the *Economic Journal*, Marshall (1898b: 312–13) pontificated on mechanical and biological analogies in economics with special reference to the terms 'statics' and 'dynamics' borrowed from physics. This paper reflects a distinct departure from the position Marshall took in his inaugural lecture, and anticipates the defence of equilibrium analysis made in the preface to the sixth and later editions of the *Principles*. Although aware of the dangers of which he gives due warning, Marshall now defends analytical concepts such as 'the stationary state' and the notion of a 'stable equilibrium' and the analogy (so dangerous as we saw earlier) of the pendulum, borrowed from mechanics. The problem of time, elsewhere (and earlier) described as the chief difficulty in economics (Marshall 1920: vii) is not mentioned when it is argued that this mechanical analogy 'should not be abandoned' (Marshall 1898b: 317). By the turn of the century, Marshall the equilibrium economist was winning against Marshall the economic historian (Guillebaud 1961: II, 62–75).

This fault in Marshall is partly explained by Keynes in the reproduction of Marshall's study about his patron saint. The passage is worth quoting in full (and appears to be Keynes' recollection of Marshall's own words):

> About the time that I first resolved to make as thorough a study as I could of Political Economy (the word Economics was not then invented) I saw in a shop window a small oil painting (of a man's face with a strikingly gaunt and wistful expression, as of one 'down and out') and bought it for a few shillings. I set it up above the chimney-piece in my room in college and thenceforward called it my patron saint, and devoted myself to trying how to fit men like that for heaven. Meanwhile I got a good deal interested in the semi-mathematical side of pure economics, and was afraid of becoming a mere thinker. But a glance at my patron saint seemed to call me back to the right path. This was particularly useful after I had been diverted from the study of ultimate aim [i.e. the elimination of poverty] to the questions about Bimetallism, *etc.* which at one time were dominant. I despised them, but 'the instinct of the chase' tempted me towards them.
>
> (Keynes 1924: 37–8)

The portrait referred to hangs now in the Marshall library at the University of Cambridge, presumably for the edification of the current generations of economics students who work there in their initial training. I wonder, however, how many of these students are aware of the temptations against which Marshall's patron saint was to act as safeguard. Keynes related the story in the context that Marshall was 'too anxious to do good' and was thereby too slow to publish his work; for me it crystallises much more the struggle in Marshall's mind between history and equilibrium, which I have just briefly outlined. As in

the case of bimetallism, where mathematics triumphed over social science, equilibrium in the end defeated history in Marshall's economics.

This defeat became a rout through Pigou, Marshall's successor to the chair at Cambridge. He brought the diagrams out of the footnotes and put the algebra and calculus into the text.[25] Marshall's dilemma of history versus equilibrium was forgotten, until it was rediscovered to some extent by his prize pupil, John Maynard Keynes, and by one of his intellectual heirs, Joan Robinson. This almost gives this lecture a happy ending; unfortunately this is not the case, as I will now briefly demonstrate.

Conclusions

The major moral of this lecture is perfectly clear and obvious: the tremendous importance of history for students of economics. Such reminders cannot be repeated too often (who, except for a few, now remember the presidential addresses by Phelps-Brown [1972] and Leontief [1971] given a decade ago?). In addition, there are still unfortunately too many economists left who see history as the opposite of theory. I was therefore particularly pleased to see such a reminder made by the eleventh R. C. Mills Memorial Lecturer just over six months ago (Sylos-Labini 1981) when he demonstrated the importance of examining technological change in its proper historical perspective.

If this moral was all I wanted to demonstrate, then I would have largely wasted your time. Moreover, the second part of my title would have been redundant, since I would not have had to elucidate the different approaches of Smith, Marx and Marshall to the problem of history versus equilibrium. From this comparison a further and more important observation can be made. Although the more I read the *Wealth of Nations* the more I admire the mature wisdom of its author (and the more I deplore the inanities of some of the commentators on Smith) I cannot applaud his solution to the problem of history versus equilibrium, at least in the manner in which I interpret his work. Within the context of Marshall's work, I have long appreciated the sagacity of Joan Robinson's remark, that 'the more I learn about economics the more I admire Marshall's intellect and the less I like his character' (Robinson 1953: 259): I think that the defeat of Marshall (economic historian) by Marshall (equilibrium economist) in the longer run had serious and detrimental consequences for economics. On this issue, therefore, as on some others, I side wholeheartedly with Karl Marx. By all means, use equilibrium analysis and mathematics in economic theory – without theory there can be no science – but appreciate its limitations. As illustrated in his discussion of the reproduction schemas, Marx knew these limitations exceedingly well. Furthermore, he knew the best antidote to over-abstract reasoning: a study of history and a knowledge of statistics (Marx's love of blue books is legendary). This lecture is therefore not a critique of theory or of mathematical economics: its intention is to repeat Phelps-Brown's (1972: 9) request that economists need to be not only numerate but also historiate, and to point to the need to apply theory, particularly equilibrium theory, only with the

greatest of care. (For a very fine example, which exhibits such understanding by a superb theorist, see Pasinetti [1974: esp. 118–20.])

If I can impart my love for history to my students, and inculcate the dangers of misleading inferences from economics theory, then I feel that I will not waste my time in my life as Professor of Economics and that, in a moderate measure, I will repay the faith placed in me by those who appointed me as Professor of Economics at this university. At the same time, in adopting this procedure, I will continue in a modest way what is valuable in the Sydney tradition created by my four illustrious and very different predecessors.

Notes

1 Inaugural lecture given at the University of Sydney, 29 June 1981. This lecture is dedicated to Professor Joan Robinson, whose writings constituted the major influence of a living economist on my economic education. My intellectual debt to her work in preparing this lecture is self-evident and, I hope, sufficiently acknowledged. To her influence on my teaching of economics, only my students can testify (and see below, Chapter 28).

2 A lecture on public finance, by contrast, would have allowed me only to pay such tribute to R. C. Mills and S. J. Butlin, both of whom worked in the area of federalism and taxation policy, to which so much of my own recent work has been devoted.

3 On the life and work of Irvine see McFarlane (1966); on the work of R. C. Mills the short biography by S. J. Butlin (1958); on the work and life of S. J. Butlin, the obituaries by his student C. B. Schedvin (1978) and his brother N. G. Butlin (1978).

4 One similarity of special interest to the historian of ideas is the close association between Smith, Marx and Marshall and the German philosopher Hegel. The influence of Hegel on Marx is so well known that it requires no documentation. Marshall acknowledged his indebtedness to Hegel in the preface of the first edition of his *Principles* (reprinted in Marshall 1920: ix) but the peculiar features of this Hegelian legacy on Marshallian economics have not been greatly discussed in the literature. (For an exploration of some of them, see my 'Marshall and Hegel' [below, Chapter 12]. Smith's influence on Hegel has been documented by Plant [1973: 57, 113 esp.] and by Chamley [1965; 1967]).

5 This provides a further link of the topic to economics at Sydney University, since Professor Robinson gave a seminar based on this paper during her visit to Sydney in 1975.

6 This summary is therefore not complete and omits, for example, the fundamental methodological difference between the two Cambridges on the comparisons of equilibrium position. See the debate between Pasinetti and Solow in the *Economic Journal*, 1970, and, for a simpler version of the argument, Kregel (1976: 34–6).

7 With characteristic candour, this is fully admitted by Hahn. See his inaugural lecture (Hahn 1973: 31–2) where he states: 'at the point, when large historical vision is at issue, equilibrium economics is inadequate to the task'. As indicated in the next section, this view had been independently discovered by Adam Smith two centuries before.

8 This is, of course, not the only reason for the importance of history in economics. A knowledge of history also provides an appreciation of the realities of human existence and behaviour which is so frequently forgotten in the interpretation of mathematical theories. On this, see the presidential addresses of Phelps-Brown (1972) and Leontief (1971) to the Royal Economic Society and American Economic Association respectively.

9 For an examination of the classical and neoclassical meanings of general equilibrium and the important differences between them, see the excellent study by Walsh and Gram (1986).

10 For a comment on this, see Paolo Sylos Labini (1976: 216–23), where he demonstrates the accuracy of Smith's economic history in the light of modern research.

11 It should be noted, however, that Smith did not use the term 'equilibrium' in either his *History of Astronomy* or his *History of the Ancient Physics*. He was however, fully cognisant of the notion, see Smith (1795: 115–16, 188).

12 Smith similarly would have regarded the economic system as a machine [cf. Smith 1795: 66] but not as self-adjusting, as Quesnay did in his analysis of the *Tableau*. See also Pownall (1776: 337–9), who praised Smith's *Wealth of Nations* for its portrayal of the economic system as a machine.

13 Hume's historical bent [on this see Thurlings (1978: ch. 3, esp. 106–7)] may also have induced him to avoid the word 'equilibrium', though Hume's much smaller acquaintance with the natural sciences as compared with Smith makes this less likely.

14 In the context of Hume's specie mechanism, it is interesting to note that Smith criticised aspects of this in his *Lectures* (Meek *et al*. 1978: 506–7). This indicates that Smith fully grasped Hume's doctrine and its purpose, and makes his omission of that doctrine in the *Wealth of Nations* only explicable on the ground that Smith had become disenchanted with equilibrium analysis when he wrote the latter, possibly because of the conflict between the speed of the adjustment process implicitly assumed by Hume, and the speed of adjustment of prices and specie flows as revealed by historical experience. On this issue, see Viner (1937: 87), Eagley (1970: 61–8), Petrella (1960: 365–74) and Hollander (1973: 174–6, 205–7).

15 Smith (1776: 220, note w-w) indicates that the first edition estimated this adjustment period at a century. The reduction to ninety years in the second and subsequent editions is neither explained by the editors, nor by Smith.

16 I therefore strongly disagree with Samuelson (1977) in which he implies that Smith was an equilibrium theorist; because this so-called 'vindication' of Smith misses the point of Smith's analysis. The best current interpretations of Smith on the subject of market and natural price in print are those by Kaushil (1973) and Larsen (1977).

17 As Engels writes in the preface to this volume, 'It was no easy task to put the second book of *Capital* in shape for publication'. Only one manuscript, not those on reproduction, 'had been revised throughout and was ready for the press' (Marx 1957: 1). As Smolinsky (1973) has pointed out, this is all the more the pity since Marx had been trying to formulate mathematically his work on reproduction based on Quesnay's *Tableau Economique* (see esp. Smolinsky 1973: 1193, 1199).

18 See the remarks made in notes 9 and 16 above.

19 Morishima (1973: 128) stated 'our equations (8) and (17) do not take Marx's view of crises properly into account', despite the fact that the purpose of Marx's analysis of reproduction was to illuminate aspects of the theory of crises (see Marx 1957: 410–11, 424–5, 466–9, 487, 503–5).

20 The similarity between Harrod's dynamics (1939; 1948) and Marx's reproduction schema is now well known. As Joan Robinson put in 1953,

> Mr Harrod was rather taken aback when I drew his attention to the fact that this theory was in *Capital*, Vol. II. But he is a thorough Keynesian and has long ago spewed up every bit of stinking fish he ever ate. So after the shock had worn off, he saw how right I was.
>
> (Robinson 1953: 263)

21 Joan Robinson's skill in riding a 'Hegelian bicycle' (to adapt one of her famous metaphors) is contrasted with her caustic comments on 'Hegelese' in another context (Robinson 1953: 264–8).
22 This conclusion led to two important controversies. First, that now known as the 'break-down' controversy between European Marxists at the turn of the century. It also provided the foundation for the Cambridge controversies in capital theory, when Solow and Swan tried to restore an automatic tendency to equilibrium in growth theory through the re-introduction into that theory of the aggregate production function, and thereby the influence of changes in relative 'factor' prices on 'factor' substitution. The logical error implied in aggregate production functions is now well known.
23 This was demonstrated by Joan Robinson in her review of Harrod (1948) where one of her first comments is that Harrod's world is 'a world without history' (Robinson 1949: 233, cf. esp. 244–8 where the consequences of this omission are discussed).
24 This is now (erroneously) known as 'Harrod's knife-edge'. See Joan Robinson (1973; 1965), in the first of which papers she originally coined this expression. For a historical account, which explains why this expression is a misnomer and which also discusses Keynes' criticism of Harrod (1939), see Kregel (1980).
25 In fairness to Pigou it should be pointed out that he too was a good historian, as demonstrated by Pigou (1923; 1927; 1935; 1946).

References

Blaug, Mark (1964) *Economic Theory in Retrospect*, London: Heinemann.
Butlin, N. G. (1978) 'A Fraternal Farewell: Tribute to S. J. Butlin', *Australian Economic History Review* (18).
Butlin, S. J. (1953a) *Foundations of the Australian Monetary System, 1788–1851*, Melbourne: Melbourne University Press, 1953.
——(1953b) *War Economy 1939–1942*, Australian War Memorial, Canberra.
——(1958) 'Richard Charles Mills (1886–1952)', introduction to H. C. Coombs, 'Conditions of Monetary Policy in Australia', First R. C. Mills Memorial Lecture, Department of Economics, University of Sydney, April.
——(1961) *Australia and New Zealand Bank*, London: Longmans.
Butlin, S. J. and C. B. Schedvin (1977) *War Economy 1942–1945*, Canberra: Australian War Memorial.
Chamley, Paul (1965) 'Les Origines de la Pensée Economique de Hegel', *Hegel Studien*, 3.
——(1967) 'La Doctrine Economique de Hegel et la Conception Hegelienne du Travail', *Hegel Studien*, 5.
Clark, D. L. (1977) 'The Kiel School: Its Contribution to Capital and Growth Theory', paper delivered at Sixth Conference of Economists, Hobart, May.
Dixon, P. B., Powell A. A. and Parmenter, B. R. (1979) *Structural Adaptation in an Ailing Macro Economy*, Melbourne: Melbourne University Press.
Domar, E. D. (1967) '*Das Kapital*, A Centenary Appreciation', Discussion, *American Economic Review*, 57.
Eagley, Richard V. (1970) 'Adam Smith and the Specie Flow Doctrine', *Scottish Journal of Political Economy*, 17.
Goodwin, C. D. W. (1966) *Economic Enquiry in Australia*, Durham NC: Duke University Press.
Groenewegen, P. D. (1977) *The Economics of A. R. J. Turgot*, The Hague: Martinus Nijhoff.
——(1990) 'Marshall and Hegel' (below, Chapter 12).

Guillebaud, C. W. (1961) *Marshall's Principles of Economics*, 9th variorum edn, London: Macmillan.
Hahn, F.H. (1973) *On the Notion of Equilibrium in Economics*, Cambridge: Cambridge University Press.
Harcourt, G. C. (1972) *Some Cambridge Controversies in the Theory of Capital*, Cambridge: Cambridge University Press.
Harrod, R. F. (1939) 'An Essay in Dynamic Theory', *Economic Journal*, 49.
——(1948) *Toward a Dynamic Economics*, London: Macmillan.
Hollander, Samuel (1973) *The Economics of Adam Smith*, London: Heinemann.
Hume, David (1752) *Essays and Treatises on Several Subjects*, in T. H. Green and T. H. Grose (eds) *Essays Moral, Political and Literary by David Hume*, vol. 1, London: Longmans, Green, 1875.
Irvine, R. F. (1914) *The Place of the Social Sciences in a Modern University*, Sydney: Angus & Robertson.
Kaushil, S. (1973) 'The Case of Adam Smith's Value Analysis', *Oxford Economic Papers*, 25.
Keynes, J. M. (1925) 'Alfred Marshall, 1842–1924', in A. C. Pigou (ed.) *Memorials of Alfred Marshall*, London: Macmillan.
Kregel, Jan (1976) *The Reconstruction of Political Economy: An Introduction to Post-Keynesian Analysis*, 2nd edn, London: Macmillan.
——(1980) 'Economic Dynamics and the Theory of Steady Growth: An Historical Essay on Harrod's "Knife-Edge"', *History of Political Economy*, 12.
Larsen, Robert M. (1977) 'Adam Smith's Theory of Market Prices', *Indian Economic Journal*, 24.
Leontief, W. (1971) 'Theoretical Assumptions and Non-Observed Facts', *American Economic Review*, 61.
Lindgren, J. R. (1967) *The Early Writings of Adam Smith*, New York: Augustus M. Kelley.
Luxemburg, Rosa (1936) 'The Second and Third Volumes of *Capital*', in Franz Mehring, *Karl Marx*, London: Allen & Unwin.
——(1951) *The Accumulation of Capital*, London: Allen & Unwin.
McFarlane, B. J. (1966) *Professor Irvine's Economics in Australian Labour History*, Canberra: Australian Society for the Study of Labour History.
Marshall, Alfred (1879) *The Pure Theory of Foreign Trade: The Pure Theory of Domestic Values*, LSE Reprints no. 1, London: London School of Economics, 1949.
——(1885) 'The Present Position of Economics', in A. C. Pigou (ed.) *Memorials of Alfred Marshall*, London: Macmillan, 1925.
——(1897) 'The Old Generation of Economists and the New', in A. C. Pigou (ed.) *Memorials of Alfred Marshall*, London: Macmillan, 1925.
——(1898a) *Principles of Economics*, 4th edn, London: Macmillan.
——(1898b) 'Mechanical and Biological Analogies in Economics', in A. C. Pigou (ed.) *Memorials of Alfred Marshall*, London: Macmillan, 1925.
——(1919) *Industry and Trade*, London: Macmillan.
——(1920) *Principles of Economics*, 8th edn, London: Macmillan.
——(1923) *Money, Credit and Commerce*, London: Macmillan.
——(1975) *The Early Economic Writing of Alfred Marshall, 1869–1890*, edited and introduced by J. K. Whitaker, London: Macmillan.
Marshall, Mary Paley (1947) *What I Remember*, Cambridge: Cambridge University Press.
Marx, K. H. (1957) *Capital*, vol. II, Moscow: Foreign Languages Publishing House.

Meek, R. L., Raphael, D. O. and Stein, P. G. (eds) (1978) *Adam Smith: Lectures on Jurisprudence*, Oxford: Oxford University Press.
Mills, R. C. (1915) *The Colonisation of Australia, 1829–1942*, facsimile edition with an introduction by S. J. Butlin, Sydney: Sydney University Press.
Mizuta, H. (1967) *Adam Smith's Library*, Cambridge: Cambridge University Press.
Morishima, Michio (1973) *Marx's Economics*, Cambridge: Cambridge University Press.
——(1974) 'Marx in the Light of Modern Economic Theory', *Econometrica*, 42.
Pasinetti, L. L. (1970) 'Again on Capital Theory and Solow's "Rate of Return"', *Economic Journal*, 80.
——(1974) *Growth and Income Distribution Essays in Economic Theory*, Cambridge: Cambridge University Press.
Patinkin, Don (1965) *Money, Interest and Prices*, 2nd edn, New York: Harper & Row.
Petrella, Frank (1968) 'Adam Smith's Rejection of Hume's Specie-Flow Mechanism: A Minor Mystery Resolved', *Southern Economic Journal*, 34.
Phelps-Brown, E. H. (1972) 'The Underdevelopment of Economics', *Economic Journal*, 82.
Pigou, A. C. (1923) *Essays in Applied Economics*, London: P. S. Kind & Sons.
——(1927) *Industrial Fluctuations*, London: Macmillan.
——(1935) *Economics in Practice*, London: Macmillan.
——(1947) *Aspects of British Economic History 1918–1925*, London: Macmillan.
Pigou, A. C. (ed.) (1925) *Memorials of Alfred Marshall*, London: Macmillan.
Plant, Raymond (1973) *Hegel*, London: Unwin University Books.
Pownall, Governor (1776) 'A Letter from Governor Pownall to Adam Smith', in E. C. Mossner and I. R. Ross (eds) *The Correspondence of Adam Smith*, Oxford: Oxford University Press, 1977.
Quesnay, François (1763) Chapter VII of Mirabeau's *Philosophie Rurale*, attributed to Quesnay in *François Quesnay et la Physiocratie*, Paris: INED, 1958.
Robinson, Joan (1949) 'Mr Harrod's Dynamics', reprinted in A. H. Hansen and R. V. Clemence (eds) *Readings in Business Cycles and National Income*, London: Allen & Unwin, 1953.
——(1951) 'Rosa Luxemburg's *Accumulation of Capital*', in Joan Robinson, *Collected Economic Papers*, vol. 2, Oxford: Blackwell, 1964.
——(1952) 'The Model of an Expanding Economy', in Joan Robinson, *Collected Economic Papers*, vol. 2, Oxford: Blackwell, 1964.
——(1953) 'On Re-reading Marx', in Joan Robinson, *Collected Economic Papers*, vol. 4, Oxford: Blackwell, 1973.
——(1965) 'Harrod's Knife-edge', in Joan Robinson, *Collected Economic Papers*, vol. 3, Oxford: Blackwell, 1965.
——(1970) 'Harrod after Twenty-one Years', in Joan Robinson, *Collected Economic Papers*, vol. 4, Oxford: Blackwell, 1973.
——(1974) 'History versus Equilibrium', in Joan Robinson, *Collected Economic Papers*, vol. 5, Oxford: Blackwell, 1979.
——(1975) Introduction to 2nd edn of vol. 3, Joan Robinson, *Collected Economic Papers*, Oxford: Blackwell, 1975.
Rotwein, Eugene (1955) *Hume: Writings on Economics*, London: Nelson.
Samuelson, P. A. (1967) 'Marxian Economics as Economics', *American Economic Review*, 57.
——(1977) 'A Modern Theorist's Vindication of Adam Smith', *American Economic Review*, 67.

Schedvin, C. B. (1978) 'Sydney James Butlin (1910–1977)', *Economic Record*, 54.
Simkin, C. G. F. (1968a) *Economics At Large*, London: Weidenfeld & Nicolson.
——(1968b) *The Traditional Trade of Asia*, Oxford: Oxford University Press.
Smith, Adam (1755) 'A Letter to the Authors of the *Edinburgh Review*', in J. R. Lindgren (ed.) *The Early Writings of Adam Smith*, New York: Augustus M. Kelley, 1967.
——(1776) *An Inquiry into the Nature and Causes of the Wealth of Nations*, eds A. S. Skinner, R. H. Campbell and W. B. Todd, Oxford: Clarendon Press, 1976.
——(1795) *Essays on Philosophical Subjects*, in J. R. Lindgren (ed.) *The Early Writings of Adam Smith*, New York: Augustus M. Kelley, 1967.
Smolinsky, Leon (1973) 'Karl Marx and Mathematical Economics', *Journal of Political Economy*, 81.
Solow, R. M. (1970) 'On the Rate of Return: Reply to Pasinetti', *Economic Journal*, 80.
Sylos-Labini, Paolo (1976) 'Competition: The Product markets', in T. Wilson and A. S. Skinner (eds) *The Market and the State*, Oxford: Clarendon Press.
——(1981) 'Technological Change under Contemporary Conditions: An Economist's View', 11th R. C. Mills Lecture, 21 October 1980, in *Economic Papers* (66).
Tannahill, Reay (1973) *Food in History*, London: Eyre Methuen.
Thurlings, Th. L. M. (1978) *Turgot en Zijn Tijdgenoten*, Wageningen: Veenman & Zonen.
Turgot, A. R. J. (1766) *Réflexions sur la Formation et la Distribution des Richesses*, in P. D. Groenewegen, *The Economics of A. R. J. Turgot*, The Hague: Martinus Nijhoff, 1977.
——(1767) 'Observations on a Paper by Saint-Péravy', in P. D. Groenewegen, *The Economics of A. R. J. Turgot*, The Hague: Martinus Nijhoff, 1977.
——(1770) 'Letters on the Grain Trade', in P. D. Groenewegen, *The Economics of A. R. J. Turgot*, The Hague: Martinus Nijhoff, 1977.
Viner, Jacob (1937) *Studies in the Theory of International Trade*, New York: Harper and Brothers.
Walsh, V. and Gram, H. (1980) *Classical and Neoclassical Theories of General Equilibrium*, Oxford: Oxford University Press.
White, Michael (1982) 'Jevons in Australia: A Reassessment', *Economic Record*, 58.

2 Reflections on two centenaries in political economy

The year 1967 witnesses two important[1] anniversaries in the history of political economy which should not go unnoticed by those interested in economics. The first of these anniversaries is the bicentenary of the publication of *An Inquiry into the Principles of Political Œconomy being an Essay on the Science of Domestic Policy in Free Nations. In which are particularly considered Population, Agriculture, Trade, Industry, Money, Coin, Interest, Circulation, Banks, Exchange, Public Credit, and Taxes*, by Sir James Steuart: the second is the centenary of the publication of the first volume of *Das Kapital. Kritik der politischen Oekonomie*, subtitled *Der Produktionsprocess des Kapitals*, by Karl Marx. The purpose of this monograph is to present a comparison of some aspects of these two books and to give a brief appreciation of their present standing in the history of economic thought.

Although it may seem strange that there are points of comparison between the work of an eighteenth-century Scottish aristocrat with Jacobite sympathies and that of a nineteenth-century German philosopher and leader of an international working-men's association, a study of the two works brings many similarities to the forefront. Steuart's *Principles of Political Œconomy* and Marx's *Capital* have a great deal more in common than the fact that they share the same year in which to celebrate centenaries of publication.

The first point that strikes any reader of the two works is the similarity in style of writing and mode of expression. Both authors have a (deserved) reputation of being almost impossible to read. Steuart's style has been described as 'cumbrous and pedantic and almost unreadable',[2] and Adam Smith remarked with reference to the *Principles* that 'he understood Sir James's system better from his conversation, than his volumes'.[3] Steuart's major work 'remains an extremely difficult and tiresome book to read'.[4]

Marx's style is almost proverbially heavy. It is often long-winded and is especially not easy to follow when the author is engaged in theoretical argument. A prime example of this is the first part of *Capital* dealing with 'Commodities and money', from which the following quotation is taken in order to illustrate this point:

> The two phases, (C-M-C and M-C-M) each inverse to the other, that make up the metamorphosis of a commodity constitute together a circular move-

> ment, a circuit: commodity-form, stripping off of this form, and return to the commodity-form. No doubt, the commodity appears here under two different aspects. At the starting-point it is not a use-value to its owner; at the finishing point it is. So, too, the money appears in the first phase as a solid crystal of value, a crystal into which the commodity eagerly solidifies, and the second, dissolves into the mere transient equivalent-form destined to be replaced by a use-value.
>
> The two metamorphoses constituting the circuit are at the same time two inverse partial metamorphoses of two other commodities. One and the same commodity, the linen, opens the series of its own metamorphoses, and completes the metamorphosis of another (the wheat).[5]

A second similarity in the work of Steuart and Marx is their factual and historical approach to the study of some aspects of economics. Neither of the two was afraid of abstract theoretical argument, but, on the other hand, they were also concerned with a study of their economic and institutional environment in order to advance or to correct their hypotheses.

Steuart's historical approach is shown especially in his discussion of the economics of population and agriculture, which is the subject matter of the first book in the *Principles*. In this book, his method is often similar to that 'used occasionally by Hume, and extensively by Cantillon: the method of conjectural economic history'.[6] This is especially apparent in his theory of luxury as a catalyst in economic development, his theory of location and the origin of towns, and in his discussion of the connection between agricultural surplus and the evolution of 'free hands'. Although he was acquainted with the two authors mentioned above, Steuart developed this method considerably and virtually made it his own.[7]

Steuart's awareness of the connection between economics and history is also illustrated by the emphasis he placed on economic phenomena in shaping past and present situations and institutions. 'The great alterations in the affairs of Europe within these last three centuries' are ascribed by him to the 'discoveries of America and the Indies, the springing up of industry and learning, the introduction of trade and the luxurious arts, the establishment of public credit, and a general system of taxation'. These, as well as other events, have changed governments from being 'feudal and military' to being 'free and commercial'.[8] This is close to an economic interpretation of history.

Steuart's works are also filled with many attempts to support his theoretical investigations with factual material. This is especially so in his discussion of monetary theory and the theory of public finance, where recent institutional developments are revealed and considered. Despite the use of the 'historical' method, Steuart did not shun abstract argument in his economic reasoning. The remarks quoted below, dealing with the relationship between agricultural surplus and the size of the population, provide an example of this:

> I now suppose man to add his labour and industry to the natural activity of the soil: in so far, as by this he produces an additional quantity of food, in

> so far he lays the foundation for the maintenance of an additional number. This number I shall call (B). From this I conclude, that as (A) is in constant proportion to the spontaneous fruit, so (B) must be in proportion to agriculture (by this term I understand at present every method of augmenting food by labour). Consequently the number maintained by the labour of mankind must be to the whole number of mankind as (B) is to (A + B), as (B) is to (A) and (B) jointly.[9]

Steuart rarely forgot, however, that 'every supposition must be considered as strictly relative to the circumstances presupposed',[10] which meant that he was able to formulate few clear and precise theoretical principles, in contrast with his contemporaries such as Hume and Turgot.[11]

The historical awareness of Marx does not need any documentation. Even a hurried reading of *Capital* will make this clear. The long discussion of the agitation for the ten-hour bill and other factory legislation, the classic descriptions of working and living conditions of large sectors of the English working class, the practice of quoting at length from reports and from blue books on 'the methods of exploitation of the capitalist' are well known examples. Marx himself revealed his method in the following quotation taken from the preface to the first German edition:

> The physicist either observes physical phenomena where they occur in their most typical form and most free from disturbing influence, or, wherever possible, he makes experiments under conditions that assure the occurrence of the phenomenon in its normality. In this work I have to examine the capitalist mode of production, and the conditions of production and exchange corresponding to that mode. Up to the present [1867] time, their classic ground is England. That is the reason why England is used as the chief illustration in the development of my theoretical ideas.[12]

The final sections of the first volume, dealing with the general law of capitalist accumulation, especially the part dealing with the 'so-called primitive accumulation' show Marx's conjectural economic history, interspersed with the facts as he saw them and as they then were available. Marx's work on the economic interpretation of history also needs no introduction. Here the similarities with Steuart are very pronounced.

It is therefore interesting to note that Marx recognised Steuart as a kindred spirit insofar as method was concerned. Although there is criticism of several parts of Steuart's doctrine, Marx praises his Scottish predecessor as 'a writer altogether remarkable for his quick eye for the characteristic social distinctions between different modes of production'; he also called Steuart the 'economist who has handled this subject (i.e. population theory) best'. On several other occasions Marx praised Steuart for his historical insight.[13]

Another factor which the two writers have in common is the high standard of scholarship evident in their works. Steuart and Marx were both extremely

well read in economics as well as in other subjects, and they acknowledged their sources scrupulously. In this matter, they followed much higher standards than their contemporaries.

Steuart showed his indebtedness to many of his economic predecessors and contemporaries in the text of his *Principles*. Among others, he cites Belloni, Richard and Philip Cantillon, Child, Davenant, Dutot, Gee, Harris, Hume, King, Law, Locke, Magens, Melon, Mirabeau, Montesquieu, Petty, Quesnay, Charles Smith, Sully, Sir William Temple, Vauban and Wallace: a list which includes nearly every important eighteenth-century economist prior to the publication of his *magnum opus*.[14] The list of authorities cited in the first volume of *Capital* is even more impressive: Marx's study and reading of the subject embraces nearly every important work on economics written in the seventeenth, eighteenth and early nineteenth century, and is therefore still an important bibliographical source in the history of economics.[15]

The similarities which have been noted so far may be traced to a single source: the German background as regards the academic work of the two authors. This needs some explanation as far as Steuart is concerned. Steuart's long exile from 1748 to 1762 – inflicted on him for the part he allegedly played in the Jacobite revolt of 1745–6 – took him, among other places, to the university towns of Frankfurt and Tubingen. While Book I of the *Principles* was completed in Padua, Books II and III, as well as his scholarly *Dissertation upon the Doctrine and Principles of Money, applied to the German Coin*, were written in Tubingen, It is more than likely that the scholastic atmosphere of this German academic community influenced Steuart considerably as to style, as to his use of the historical method, as to his scholarly approach to the subject. As Sen has remarked:

> While Steuart was a bright conversationalist, his style of writing was extremely heavy. His long exile had not helped to develop a good one and possibly the influence of Tubingen on him in this respect was detrimental. His style improved considerably in later publications.[16]

Apart from these stylistic and methodological considerations, the authors share the markedly poor reception that was given to their major works after publication. The reasons for this reveal further similarities between Marx and Steuart.

Although in the first nine years after its publication, Steuart's *Principles* appear to have sold reasonably well, the publication of Smith's *The Wealth of Nations* in 1776 almost completely stopped its sales. Before the competition from the work of his Scottish contemporary, Steuart's book was reprinted in Dublin (1770) and was translated into French and German. These three editions 'fared much better' than the English edition.

On its appearance the book was quite favourably reviewed in both the *Monthly Review* and the *Critical Review*, though the second of these criticised Steuart on the ground that 'we can have no idea of any statesman interfering in

the commercial concerns of a free country. … Nothing ought to appear more uncontrolled or can be more permanent, than the principles of commerce'.[17] These sentiments were probably the reason why Steuart's book (in contrast to Smith's) was so poorly received in England and Scotland, while, on the other hand, it was so well received in the Germany of the nineteenth century.[18]

Marx's book fared a little better, and 'for some years past the theories advocated in this book (*Capital*, Volume I) have been constantly referred to, attacked and defended, interpreted and misinterpreted, in the periodical press and the current literature of both England and America'.[19] The first German edition of 1867 was followed by a second in 1873, a French edition in serial form in 1872–5, while, shortly after Marx's death, the third German and first English editions were published in 1883 and 1887 respectively. This relative acceptance of the work was due to the fact that 'the theories of Marx … exercise a powerful influence upon the socialist movement which is spreading in the ranks of "cultured" people, no less than in those of the working class'.[20]

Apart from some devastating criticism, the work received little constructive academic attention. In Austria, Marx's theoretical framework of value and distribution was scathingly attacked, especially by the penetrating criticism of Böhm-Bawerk. The school of Lausanne attacked through the pen of Pareto.[21] And according to Joan Robinson,

> On the other hand, in England the situation happened to be such that the academic economists had no occasion to attack Marx. All they had to do was to forget about him. Thus, though *Capital* was written in London, it was very little read there, and still less in Cambridge.[22]

In this sense, Marx's *Capital* fared as badly as Steuart's *Principles*.

The reasons for this failure of the two works are again similar. Both works appeared at a conclusion of an era in the history of economics, and therefore contained basic ideas which were no longer acceptable to the writers of the new generation. This attitude was not congenial to a critical appraisal, and virtually led to the complete rejection of the two books among the new generation of economists.

Steuart has been called 'the last of the mercantilists' in an era when the theory of the balance of trade was being replaced by that of an automatic specie mechanism, and when the doctrine of protection (no matter how qualified) was rejected in favour of universal free trade.[23]

It is true that a great deal of Steuart's economic policy may be described as 'mercantilist': his support for the policy of low cost of production through suitable wage policy, his concern with full employment, his advocacy of low interest rates achieved by legal means, his discussion of population theory from the point of view of having too few rather than too many people, his arguments against complete free trade and his qualified support for protection, and finally, his stress on regulation and control rather than on laissez-faire. There was also little concern with the economic issues to which classical theory directed its

attention: that is, the theory of value and distribution. It is for these reasons that Steuart's work was not accepted by the economists that followed.

Marx, on the other hand, can be called the last of the 'classical' economists. His labour theory of value, his surplus theory of profits, his subsistence theory of wages, and his concern with the accumulation of capital and economic growth and its effect on the distribution of national product, were answers to classical questions and not the answers to the new questions provided by Jevons, Menger and Walras who, by the time of publication of the first volume of *Capital*, were busily formulating the new ideas on value and distribution theory that started the neoclassical era, and the use of the marginal technique in these branches of economics. This difference in outlook between the classical school and the neoclassicals is emphasised in the passage quoted below, where Joan Robinson compared the different views of Marshall and Ricardo on the subject of value. This passage also illustrates the difference between Marx's approach to economics and that of the neoclassicals:

> Marshall did something much more effective than changing the answer. He changed the question. For Ricardo the Theory of Value was a means of studying the distribution of total output between wages, rent and profit, each considered as a whole, This is a big question. Marshall turned the meaning of Value into a little question: Why does an egg cost more than a cup of tea? It may be a small question but it is a very difficult and complicated one. It takes a lot of time and a lot of algebra to work out the theory of it. So it kept all Marshall's pupils preoccupied for fifty years. They had no time to think about the big question, or even to remember that there was a big question, because they had to keep their noses right down to the grindstone working out the theory of the price of a cup of tea.[24]

The labour theory of value was too crude an approximation for the fine and precise questions that the marginalists asked. Marx implicitly recognised this in his analysis of prices of production, just as Ricardo had done in his discussions of the exceptions to the general value rule which he proposed. The problem of relative prices needs sharper tools. But when the neoclassicals rejected Marx's economics on these grounds, they threw the baby (the macro-economic theories of growth, employment and distribution) out with the bathwater (the labour theory of value).[25]

The similarity in the rejection of Steuart's *Principles* and Marx's *Capital* is matched by the similarity in the cause for the renewal of interest in the two books. Just as they had been rejected by what for them was the 'new orthodoxy', so did the 'Keynesian revolution' restore their work to the attention of economists. In recent years, the economics of Steuart and of Marx have been compared to that of Keynes.

This parallel between Keynes and Steuart has been drawn quite strongly by the only full-length commentator on Steuart's economics in recent years [that is, before 1967]. In connection with Steuart's monetary theory it is argued:

> But it is only in the light of Keynesian analysis that what he was really groping for finally becomes clear. … There is no doubt that many of the ingredients of Keynes's celebrated criticism of the quantity theory of money may also be detected in Steuart. … In his emphasis that foreign trade and foreign exchange are of far less importance than the internal economy of the country, Steuart reminds us of Keynes' *Tract on Monetary Reform*'.[26]

On the subject of the rate of interest, the similarity between Keynes and Steuart is perhaps the most pronounced:

> Steuart's discussion on the nature of credit and the relation between the quantity of money and the rate of interest is much more elaborate than any of his predecessors, and readily brings to one's mind recent developments in these fields. It is a pity that Keynes overlooked Steuart. … It would perhaps be going too far to say that in Steuart's 'ready money demands' there is an element of 'liquidity preference', in dissipation' something in the nature of 'Propensity to consume', and in his correlation between 'merchant's profits' and interest some distant resemblance to 'marginal efficiency of capital' and interest; there is, however, little doubt that his eyes were turned in much the same direction as Keynes.[27]

The comparison between Marx and Keynes has been made on several occasions by Joan Robinson. As she puts it in one of her most recent discussions of the subject:

> So far as the theory of crisis is concerned it seems to me that Marx had seen most of what was to be the Keynes theory, but never saw it quite clearly because he failed to keep a grip upon the distinction between the short-run and the long-run effects of investment. In his analysis of capital accumulation in the long-run, he mapped out territory which Keynes hardly answered.[28]

Marx's discussions of Say's Law, effective demand and the reserve army of labour are close to Keynesian discussions of these subjects; even though his discussions of real and money wages, and the effect of changes in wage on employment are not.[29]

Finally, what is the present verdict on the two books which celebrate their centenary of publication this year? In part this question has already been answered, since both Sen and Joan Robinson are very much 'present-day' authors, and they very clearly identify aspects of Steuart's and Marx's economics with present-day trends in economics. Sen also links Steuart with the 'economics of control', i.e. the state direction of economic activity in order to secure such policy ends as balance of payments equilibrium, full employment and social welfare. In this sense Steuart's economics is much more modern than that of his eminent contemporary, Adam Smith.[30]

Similarly, Joan Robinson links Marx with dynamic analysis and economic development, because she has found that

> for a discussion of the questions nowadays found to be interesting – growth and stagnation, technical progress and the demand for labour, the balance of sectors in an expanding economy – Marxian theory provides a starting point where academic teaching was totally blank.[31]

Seen from this angle the two economists have clearly a link with the present. It is this link that makes the study of their work interesting and rewarding, and it also makes some recognition of centenaries in the history of economic thought of importance to all economists.

Notes

1 The stress is here on important. Another economic tract that celebrates its centenary this year is *An Enquiry into the Causes of the Present High Price of Provision*, London, 1767, which has been ascribed to Nathaniel Forster. No doubt there are many others.
2 S. R. Sen, *The Economics of Sir James Steuart*, London, 1957, 186.
3 Sir James Steuart, *The Works*, London, 1805, VI, 378; cited by Sen, *The Economics of Sir James Steuart*, London, 1957, 15.
4 *Ibid*.: 15.
5 Karl Marx, *Capital*, translated from the third German edition by S. Moore and E. Aveling and edited by F. Engels, Moscow, 1959, I, 111–12. All further references to *Capital* are from this edition.
6 E. A. J. Johnson, *Predecessors of Adam Smith*, New York, 1960, 215.
7 On location theory his possible indebtedness to Cantillon may be noted; on the theory of incentives to labour, indebtedness to Hume. See Cantillon, *Essay on the Nature of Commerce in General*, Higgs edn, London, 1959, part I, chs 2–7 and cf. with Steuart, *Principles of Political Œconomy*, London, 1767, Book I chs 8–11; and also Hume, *Of Commerce*, in *Economic Writings of David Hume*, Rotwein edition, London, 1955, 10–12; and Steuart, *Principles of Political Œconomy*, 1767, I, 30–9. Steuart cites both Cantillon and Hume and was therefore acquainted with their work. See S. R. Sen, *The Economics of Sir James Steuart*, London, 1957, Appendix C, 198. [Closer examination of the evidence indicates that it was Phillip Cantillon's work with which Steuart was familiar.]
8 Steuart, *Principles of Political Œconomy*, 1767, I, 10; cf. S. R. Sen, *The Economics of Sir James Steuart*, London, 1957, 49.
9 Steuart, *Principles*, I, 21.
10 Steuart, *Principles*, I, 5.
11 E.g. Hume and the specie mechanism, Turgot and his statement of diminishing returns. These are both precise theoretical statements.
12 Marx, *Capital*, preface to the first German edition, 8.
13 *Ibid*.: 332 n2, 352 n1 and cf. 647, 718, 745. See also S. R. Sen, *The Economics of Sir James Steuart*, London, 1957, 187.
14 See Sen, *The Economics of Sir James Steuart*, London, 1957, Appendix C; and E. A. J. Johnson, *Predecessors of Adam Smith*, New York, 1960, Appendix D.
15 See Marx, *Capital*, preface to the first German edition, 777ff. The list of authorities quoted ranges from Aristotle on value and Xenophon on the division of labour to J. S. Mill and Fawcell.

16 S. R. Sen, *The Economics of Sir James Steuart*, London, 1957, 15, cf. 9–10 and the following passage quoted from p. 11:

> It was partly on her (Lady Montagu's) advice that he finally decided not to modify the rather heavy style of his composition presumably adopted under the influence of German scholarship, about which he himself had *considerable* qualms. The old lady would certainly have done her friend a much better service if, instead of being awed by the subject, she had influenced him unhesitatingly to follow her own lighter style. Steuart would then have avoided a grave handicap from which his magnum opus very seriously suffered.

17 *The Critical Review*, XXIII, 411, cited by Sen, *ibid*.: 14; the reviews are contained in the *The Monthly Review*, XXXVII, April–July 1767, *Critical Review*, May–July.
18 E. A. J. Johnson, *Predecessors of Adam Smith*, New York, 1960, 212, S. R. Sen, *The Economics of Sir James Steuart*, London, 1957, 13ff. Roscher praised it, as did Hufeland, Herrenschwand and Rehberg.
19 Marx, *Capital*, preface to first English edition, 3.
20 *Ibid*.: 6.
21 See Böhm-Bawerk, *Karl Marx and the Close of his System* (1898), and his *Capital and Interest. A Critical History of Interest Theories* (1882) part IV, ch. III. Pareto's critique is contained in the introduction to *Extracts of Karl Marx's Capital* (1893) and *Les Systèmes Socialistes*, vol. II (Paris, 1902).
22 Joan Robinson, *On Re-Reading Marx*, Cambridge, 1953, 5. [The sentiments expressed in the text are inaccurate; Wicksteed was one critic of Marx; Marshall had spent some time studying volume I of *Capital*.]
23 Haney, *History of Economic Thought*, New York, 1949, p. 138.
24 Joan Robinson, *On Re-Reading Marx*, Cambridge, 1953, 22.
25 See Joan Robinson, *Essay on Marxian Economics*, London, 1949, ch. XI; and M. H. Dobb, *Political Economy and Capitalism*, London, 1938, esp. ch. III.
26 S. R. Sen, *The Economics of Sir James Steuart*, London, 1957, 98–9, 105.
27 *Ibid*.: 102–3.
28 Joan Robinson, 'What Remains of Marxism?', in *Collected Papers in Economic Theory*, III, Oxford, 1975, 162–3.
29 See Joan Robinson, *Essay on Marxian Economics*, *ibid*.: esp. chs 6, 8, 10.
30 See S. R. Sen, *The Economics of Sir James Steuart*, London, 1957, 184ff.
31 Joan Robinson, 'Marxism, Religion and Science', in *Collected Papers in Economic Theory*, III, Oxford, 1975, 149.

3 A note on the origin of the phrase 'supply and demand'[1]

Although supply and demand analysis as such played a large part in the discussion of the determination of relative prices from at least the middle of the seventeenth century, the phrase 'supply and demand' itself was not used in the literature until the beginning of the nineteenth century. In view of the continuing emphasis placed on supply and demand in economic discussion today, a note on the introduction of this phrase into the English language may serve a useful purpose.[2]

It may be noted at the outset that the phrase 'supply and demand' in connection with the determination of relative prices was first given prominence in English economic literature in the title to Chapter 30 of Ricardo's *Principles of Political Economy and Taxation*, 'On the influence of demand and supply on prices'.[3] In the material which makes up the contents of this chapter, the phrase is used more than half a dozen times in connection with criticism of the opinion of Buchanan, Say and Lauderdale 'that the price of commodities depends solely on the proportion of supply and demand … an axiom in political economy … [which] has been the source of much error in that science'.[4] This would make it appear that the introduction of the phrase 'supply and demand' could be traced back to either one, or all, of the above-named holders of this opinion.

A perusal of Chapter 1 of Lauderdale's *Inquiry*, 'Of value', almost immediately reveals that the phrase was not introduced by him. His analysis of relative prices, although a supply and demand analysis, uses the terminology of the previous century, since it is completely conducted in terms of a 'proportion betwixt the demand for, and the quantity of, the commodity'.[5] Ricardo cannot therefore have obtained the terminology of 'supply and demand' from this source.

The case of Buchanan's notes to his edition of the *Wealth of Nations* is rather different. In this work, the phrase 'supply and demand' is used in the following passage dealing with the price of labour: 'But it is clear that the price of labour has no necessary connexion with the price of food, since it depends entirely on the supply of labourers compared with the demand'.[6] Further inspection of his work reveals, however, that this passage is an isolated case and that elsewhere different terminology is used in connection with price. The following quotations are much more characteristic of Buchanan's language: 'The price of labour,

like that of every commodity which is bought and sold, rises or falls with the demand; a great or a small demand being invariably followed by high or low wages'.[7] 'Dr. Smith's notion that the price of provisions regulates the money price of labour, is inconsistent with that great law of the market, which suits the price and the consumption of provisions to the supply'.[8]

These, and various other remarks connected with price theory do not indicate that Buchanan was strongly attached to the new terminology. In fact, it can easily be argued that the one passage where Buchanan did use the words 'supply' and 'demand' together, was probably as much an accident as when the same thing happened in a passage from Malthus' *Essay on the Principle of Population*:

> The price of labour, when left to find its natural level, is a most important political barometer, expressing the relation between the supply of provisions, and the demand for them; between the quantity to be consumed, and the number of consumers.[9]

The most likely explanation for these isolated cases of the use of 'supply' and 'demand' in the work of Malthus and Buchanan can be found by an examination of the language used by Smith in his chapter 'Of the natural and market price of commodities', in which the words 'supply' and 'demand' are not infrequently used together in the one sentence.[10] It should be noted, however, that Smith did not use the noun 'supply' in this context, but the verb, and always in the following sense: 'The quantity brought to market … to supply the effectual demand'.[11] His expression for the phrase 'supply and demand' was very much in the eighteenth-century tradition, as is shown in this quotation: 'The market price of every particular commodity is regulated by the proportion between the quantity which is actually brought to market, and the demand of those who are willing to pay the natural price of the commodity'.[12]

This leaves the third of the three authors mentioned by Ricardo, that is, J. B. Say, as a writer to whom the introduction of the phrase 'supply and demand' could be attributed. A hasty reading of the contents of Chapter 30 of Ricardo's *Principles* may in fact lead to such a conclusion, since in that chapter there appears an italicised quotation from Say which clearly contains the terminology in question: '*The value of every commodity rises always in a direct ratio to the demand, and in an inverse relation to the supply*'.[13]

When it is remembered that no English translation of Say's *Traité d'Economie Politique* had appeared by 1817, it is clear that the French text has to be consulted in order to ascertain the language actually used by Say. In French, the above passage reads as follows: 'Le valeur d'un produit s'élevè en raison directe de la quantité demandée, et en raison inverse de la quantité offerte'.[14] It seems therefore to have been the translator of this passage who introduced the term 'supply' in this context as the translation of 'la quantité offerte'.

This translator probably was James Mill,[15] who, as is now well known, had a hand in several other aspects connected with the publication of Ricardo's

Principles. Another of these aspects relevant to this inquiry, was the preparation of the index which under 'D' only contains the entry 'demand and supply', under which heading the references in the first two editions are confined to material appearing in Chapter 30.[16] Furthermore, if it is remembered that Mill aided Ricardo in the subdivision of the work into chapters,[17] and that, perhaps, he may even have offered chapter titles to Ricardo, it is plausible to suggest that the title to Chapter 30, and possibly the 'supply and demand' terminology may owe more to Mill than to Ricardo.[18]

This hypothesis may be supported by some reference to Mill's own economic writings. In the first place, in his *Commerce Defended*, published in 1808, Mill had already used the terminology of supply and demand in the following passage connected with his exposition of the 'law of markets': 'The extent of its [i.e. the nation's] demand, therefore, and the extent of its supply are always commensurate'.[19] Second, when Mill wrote his own textbook *Elements of Political Economy*, 'the principle of supply and demand' is referred to in the discussion of the determination of relative prices in the same matter-of-fact way as it is now in modern textbooks, thereby indicating that this, for Mill at least, had become the usual expression.[20]

One further reference to a popular economics text of the early nineteenth century must be made: that is, to Mrs Marcet's *Conversations on Political Economy*, the first edition of which appeared in 1816.[21] In the analytical table of contents to Conversation XV, 'On value and price', there is a subheading 'Of supply and demand', and some further usage of this terminology in the text of this conversation. For example, Mrs B states at one point: 'When, on the contrary, the supply exceeds the demand, the price will fall below the natural value of the commodity'.[22] As this was an extremely popular textbook,[23] it probably also considerably aided the spreading of the new terminology among the practitioners of political economy in England.

It can therefore be concluded that the phrase 'supply and demand', which does not appear to have been used in the eighteenth century, did not become a common expression in economic literature till the beginning of the 1820s. Initially, its usage was probably derived from Smith's language in his treatment of market price determination, and was infrequently and almost accidentally employed in the early writings of Mill and Malthus, and of Buchanan. The use of the phrase was probably popularised through its inclusion in the text of Mrs Marcet's widely used textbook, and its appearance in a chapter title – for which James Mill may have been responsible – in Ricardo's *Principles*. The invention of the term 'supply and demand' is therefore a further instance of 'multiple discovery' in the history of economics.

Notes

1 This note was written as a result of a conversation at Cambridge with Professor G. C. Harcourt and Dr Bertram Schefold, when the question of the origin of supply and demand arose in connection with a remark made by Dr Schefold that, as far as he knew, Marx was the only German economist of the nineteenth century who used

'Zufuhr und Nachfrage' (supply and demand) rather than 'Angebot und Nachfrage' (offer and demand). The subsequent conversation indicated that a note on this subject might not be out of place.

2 It may be stressed here that the English phrase 'supply and demand', in contrast with the literal translation of the modern French, German, Italian and Dutch equivalents – 'offer and demand' – draws attention to production rather than to exchange. This is probably why Marx preferred the English terminology, and, as this note indicates, why the French, 'l'offre et la demande' was not literally translated into English.

3 Chapter 28 in the first edition, due to the 'wrong' numbering of chapters in that edition; see Piero Sraffa (ed.) *The Works and Correspondence of David Ricardo*, Cambridge, 1953, I, 10, and introduction, xxiv–xxx.

4 Ricardo, *ibid.*: I, 382. Buchanan is mentioned on the same page, Say at 383, and Lauderdale at 384. Cf. also Chapter IV, 90, for a reference to supply and demand in connection with the analysis of 'natural and market price'.

5 Lauderdale, *An Inquiry into the Nature and Origin of Public Wealth*, 1st edn, Edinburgh, 1804, 15, and cf. 13, 18, 27, 38, for similar terminology. That this is the language of the eighteenth century is revealed in the following quotations:

> Goods have a Value from the Uses they are apply'd to; and their Value is Greater or Lesser, not so much from their more or less valuable or necessary Uses; As from the greater or less Quantity of them in proportion to the Demand for them.
>
> (John Law, *Money and Trade Considered*, Edinburgh, 1705, 4)

> as the Demand is greater, or less in proportion to the Quantity of any Thing, so will such Thing, whatsoever it is, be cheaper or dearer.
>
> (Jacob Vanderlint, *Money Answers All Things*, London, 1734, 6)

> The Price of every Commodity must be estimated by the quantity exposed to sale, and the *demands* that are made for it.
>
> (Sir William Mildmay, *The Law and Policy of England, Relating to Trade*, London, 1765, 19)

6 *An Inquiry into the Nature and Causes of the Wealth of Nations by Adam Smith LL.D.*, with notes and an additional volume by David Buchanan, Edinburgh, 1814, IV, 19. This passage was elsewhere quoted by Ricardo, in *The Works and Correspondence of David Ricardo*, ed. Piero Sraffa, Cambridge, 1953, I, 216.

7 Buchanan, in the *Wealth of Nations* (see note 6 above) IV, 42.

8 *Ibid.*: I, 140, note (y).

9 T. R. Malthus, *An Essay on the Principle of Population*, Book III, Chapter V, 2nd edn, London, 1803, 406; 3rd edn, London, 1806, II, 165–6; there is no equivalent passage in the first edition published in 1798. It is interesting to note that the chapter from which this quotation is taken was frequently cited by Buchanan in his notes on wages in Volume IV of his edition of *Wealth of Nations*.

10 In fact, six times in the chapter named. See Smith, *Wealth of Nations*, Modern Library edn, New York, 1937, 57–9, 62.

11 *Ibid.*: 57. Smith used the noun 'supply' only in its budgetary sense.

12 *Ibid.*: 56. See note 5 above for similar quotations from other eighteenth-century writers. This is similar to the language of Lauderdale, who undoubtedly derived it from Smith.

13 Ricardo, *The Works and Correspondence of David Ricardo*, ed. Piero Sraffa, Cambridge, 1953, I, p. 383.

14 J. B. Say, *Traité d'Economie Politique*, 2nd edn, Paris, 1814, II, 395. The passage quoted is in fact a heading in the analytical table of contents, and did not appear in

the subsequent two editions of the *Traité*. The first English translation appeared in 1821 as a *Treatise of Political Economy: or the Production, Distribution and Consumption of Wealth*, translated from the fourth French edition by C. R. Prinsep. Although the passage in question was not included in this edition, Prinsep used 'supply and demand' frequently, notably in the title of Book II, Chapter I: 'Of the basis of value; and of supply and demand'.

15 'The accurate yet free translation of the passages quoted from Say is probably also due to Mill, who had advised against quotation in French'. See Ricardo, *Works*, ed. Piero Sraffa, Cambridge, 1953, I, Introduction, xxii. It is interesting to note that the translation in question is not quite accurate, the 'always' in the English version does not occur in the French text, which could have been, for writers other than Say, a not unimportant addition. Cf. Say, *Traité d'Economie Politique*, 3rd edn, Paris, 1817, II, 388, which conforms more closely to Mill's English translation.

16 Ricardo, *Works*, ed. Sraffa, I, Introduction, xxi–xxii. The entry, 'demand and supply' appears in the index at 433.

17 *Ibid*.: I, Introduction, Part III, esp. xxii–xxv.

18 *Ibid*.: I, xxi, where Sraffa and Dobb argue that 'In detail however Mill probably did a great deal of work [in the preparation of the *Principles*]. Here and there a phrase unmistakably characteristic of Mill … provides evidence of his hand'.

19 James Mill, *Commerce Defended*, London, 1808, reprinted in *James Mill: Selected Economic Writings*, ed. Donald Winch, London and Edinburgh, 1966, 136. Cf. also Malthus to Ricardo, 11/9/1814, where Mr Mill's 'ingenious position' that 'in reference to a nation supply can never exceed demand' is referred to. See Ricardo, *Works*, ed. Sraffa, VI, 132, and cf. Ricardo to Malthus, 16/9/1814, in *ibid*.: VI, 134.

20 James Mill, *Elements of Political Economy*, ch. III, §2, in *Selected Economic Writings*, ed. Winch, esp. pp. 255–7. By 1821 the phrase must already have been quite common. Cf. for example note 14 above, in connection with Prinsep's translation of Say's *Traité*.

21 Jane Marcet, *Conversations on Political Economy: In which the Elements of that Science are Familiarly Explained*, London, 1816. McCulloch, *The Literature of Political Economy*, LSE Reprint, London, 1938, 18, called this 'the best introduction to the science that has yet appeared'.

22 Marcet, *Conversations*, 267, 286.

23 A second edition of the work appeared in 1817, and the work eventually went through no less than seven editions. On its influence on economic theory in the middle of the nineteenth century, see Palgrave's *Dictionary of Political Economy*, London, 1896, II, 690.

4 From optimism in progress to pessimism

Some major implications of Malthus' first *Essay* on population (1798) for attitudes to growth and welfare in the nineteenth century

Between Adam Smith and the second generation of British classical economics (Malthus, James Mill, Ricardo, Torrens and West) there is a gap of a good quarter-century. Although twenty-five years is a long period on most reckonings, this quarter-century may be said to be even longer, metaphorically speaking. The reason is that between Smith and his successors in political economy, there also took place that major event of the French Revolution (1789) and the French Revolutionary Wars it subsequently generated. Malthus' *Essay* is in many respects a direct product of this world-shattering event, via some of the literature on human progress and equality the French Revolution had spawned. The full title of Malthus' *Essay*, after all, is *An Essay of the Principle of Population, as It Affects the Future Improvement of Society: With Remarks on the Speculations of Mr Godwin, M. Condorcet and other Writers*. The view on progress of Godwin and Condorcet, both in a sense 'children' of the French Revolution, was the target of the young Malthus (he was thirty-two on its publication) acting here as political and moral philosopher as much as political economist. Godwin and Condorcet were not only 'children' of the French Revolution, caught up in some of the political and social whirlwind it had created. They were also children of the Enlightenment as the 'age of reason', imbued by its widespread spirit of progress.

Godwin, Condorcet and the spirit of progress

Who were these two writers explicitly criticised by Malthus in his 1798 *Essay*, and what was the nature of their work? Godwin's *Enquiry concerning Political Justice*, first published in 1793, can partly be seen as a response to Edmund Burke's conservative attack on the democratic aspirations of the French Revolution, *Reflections on the French Revolution* (1790), joining the criticism thereof by Thomas Paine, *Rights of Man* (first published in 1791) and that by his *de facto* partner, Mary Wollstonecraft, *A Vindication of the Rights of Women* (1792). Godwin's book, however, was more than that. It was a treatise of morals and happiness (its subtitle), of government and society (it is considered to be an early anarchist classic), of power and of property. It looked to the gradual perfectibility of man and to a growing equality in society, arguing that its

perceived benefits made the coming of a system of complete equality an inevitable consequence of economic, social and political progress.

Condorcet's *Sketch for a Historical Picture of the Progress of the Human Mind*, on the other hand, grew directly out of the four stages theory of progress, in a manner similar to that developed by Adam Smith in the 1750s and 1760s and, more relevant to the case of Condorcet, by his close and older friend, Turgot. Condorcet's first three stages in the *Sketch* are the familiar ones of hunter/gatherers, pastoralists and farmers, but he then to some extent parts company with the earlier version of the theory by associating further development and progress more closely with science and learning than with the 'materialist' stance of how humankind produces for itself its necessary subsistence. Its ninth stage briefly referred to the French Revolution as inaugurating a republican form of government by way of acknowledgment of the turbulent time during which the work was produced. Only the tenth and final stage of Condorcet's work is futuristic. In it, on the basis of science and reason, Condorcet predicted that 'our hopes for the future of the human race can be subsumed under three important needs: the abolition of inequality between nations, the progress of equality within each nation, and the true perfection of mankind' (Condorcet 1795: 173). These were essential to eliminate the false fruits of

> our trade monopolies, our treachery, our murderous contempt of men of another colour or creed, the insolence of our usurpations, the intrigues or the exaggerated proselytic zeal of our priests, [which] have destroyed the respect and goodwill that the superiority of our knowledge and the benefit of our commerce at first won for us in the eyes of the inhabitants.
>
> (Condorcet 1795: 176)

Inequality of wealth, of status and of education are identified by Condorcet (1795: 179) as the great obstacles to progress and freedom, but these barriers will inevitably be overcome. Reason, education and science in a cumulative process will eventually bring about the true incarnation of truth, virtue and happiness, the pinnacle of perfection in human development and existence. As in the case of Godwin, Condorcet focused on the need for equality to be part of the final achievements of human progress.

The Malthusian reply

Godwin's *Political Justice*, and later also Condorcet's work, was debated in the mid-1790s in the Malthus household between father Daniel Malthus, the friend of Rousseau, and son Thomas Robert; the father upholding the cause of reason and enlightenment, perfectibility and equality; the son controverting and in opposition developing the principle of population which was to make him famous. In the words of Bishop Otter, who had been told the story by Malthus himself,

> And when the question had been often the subject of animated discussion between them, and the son had rested his cause, principally upon the obstacles which the tendency of population to increase faster than the means of subsistence, would always throw in the way; he was desired to put down in writing, for maturer consideration, the substance of his argument, the consequence of which was the Essay of Population. Whether the father was converted or not we do not know, but certain it is that he was strongly impressed with the importance of the views and the ingenuity of the argument contained in the MS., and recommended his son to submit his labours to the public.
>
> (cited in Keynes 1972: 84)

The fruits of these labours appeared in the middle of 1798 in the form of a relatively small book. (The relative smallness relates to the giant demographic volumes the *Essay* was to become from the second edition of 1802 onwards). In its first chapter, the work attacked the views on the perfectibility of man and the equality inherent in the ultimate form of society. It did so by a simple appeal to the law of population which, in summary, it presented as an inexorable law of nature (that is, on Burke's dictum, a law of God, since not for nothing was Malthus an ordained clergyman in the Church of England). Stripped to its bare essentials, this law stated 'that the power of population is indefinitely greater than the power of the earth to produce subsistence for man' (Malthus 1797: 5). Such a law of population was not new at the time. Important theories of population had been put forward by many notable economic and political writers including Sir William Petty, Richard Cantillon, Benjamin Franklin, Joseph Townsend, Robert Wallace, Sir James Steuart, David Hume, and even Adam Smith. These all, in varying degrees, had related population growth (and decline) to the level of subsistence, or living standards of the people. The novelty of Malthus' first *Essay* on the subject was the striking, mathematical manner with which he illustrated the potential dilemma for society of this relationship and the way in which he used this principle to combat his egalitarian and utopian adversaries, Godwin and Condorcet.

The underlying analytics of the first *Essay* are easily summarised. These commenced with the statement of what were seen as two opposing forces: the biological necessity, and capacity, of the species, to procreate; and the checks to its outcome, the growth of population, which ultimately resolves into a capacity to procreate which outstrips the ability to produce means of subsistence or food. In the shorter run, these checks to population were identified as the preventative check of reducing births through moral restraints and, second, the positive checks to population growth inherent in various causes of death, among which Malthus included vice and misery. Malthus's succinct expression of this scheme in the first *Essay* can be conveniently quoted:

> I think I may fairly make two postulates: First, that food is necessary for the existence of men; secondly, that the passion between the sexes is necessary

> and will remain nearly in its present state. These two laws … appear to have been fixed laws of nature. … Assuming then, my postulate as granted, I say, that the power of population is indefinitely greater than the power in the earth to produce subsistence for man. Population, when unchecked, increases in a geometrical ratio. Subsistence, increases only in an arithmetical ratio. A slight acquaintance with numbers will shew the immensity of the first power in comparison to the second.
>
> (Malthus 1798: 4–5)

Malthus found it necessary for those of his readers not acquainted with numbers to briefly illustrate the manner by which the numerical outcomes of a geometrical series (representing human capacity to generate offspring) outstripped those in an arithmetical series (or the growth of food supply) even when they started from the same base.

> Taking the population of the world at any number, a thousand millions, for instance, the human species would increase in the ratio of – 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, &c and subsistence as – 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 &c. In two centuries and a quarter, the population would be to the means of subsistence as 512 to 10: in three centuries as 4096 to 13, and in two thousand years the difference would be almost incalculable, though the produce in that time would have increased to an immense extent.
>
> (Malthus 1798: 9)

By contrast, the *Essay* did very little to effectively demonstrate that these two alternative formulations of growth paths matched the actual experience of the world's food production and population growth. On the first, food production, little reliable statistical data were available in any case. On the matter of population growth, in the first *Essay* Malthus cited Adam Smith on the circumstance said to prevail in Britain's former North American colonies, where 'the population was found to double itself in 25 years' (Malthus 1798: 37), the first step (and only step taken by Malthus) for establishing a geometrical progression of the type he had used for illustrative purposes. Chapter VII presented further, but less apt, evidence drawn from some eighteenth-century experience in Prussia, Lithuania, Pomerania, Magdeburg and Brandenburg, in the form of short statistical tables, together with some less well organised population data drawn from other parts of the world, including England. (Only by the second edition, when the immediacy of the political polemic had abated, did statistical material on population enter Malthus' argument in a detailed way.)

To return to the essentials of Malthus' population theory in outline, the associations he drew between his laws of increase – of food as compared to population, and the existence of checks to population, may now be briefly indicated. The first such check identified is lack of subsistence, or plain starvation, as population inevitably outstrips the supply of food. In addition, Malthus

identified positive and preventative checks in the form of misery, vice and moral restraint.

The preventative checks mentioned in the first *Essay* by Malthus were moral restraint through the postponement of marriage until a large enough subsistence at the customary level was assured to the intended household of husband, wife and children. This check, Malthus warned (1798: ch. IV) needs to operate on all classes of society. 'The positive check to population by which I mean the check that repressed an increase which is already begun, is confined chiefly though not perhaps solely, to the lowest orders of society' (ch. V).

> To these two great checks to population, in all long occupied countries, which I have called the preventative and the positive checks, may be added, vicious customs with respect to women, great cities, unwholesome manufactures, luxury, pestilence and war. All these checks may be fairly resolved into misery and vice. These are the true causes of the slow increase of [population in] all states of modern Europe.
>
> (chapter V)

The positive check was the one relevant to demonstrate the impossibility of the utopias of equality and perfection envisaged by Godwin and Condorcet as the ultimate stage of human progress. The acquisition of wealth by the lower orders through such schemes of equality would make any recourse to the preventative check for them unnecessary. The poor, therefore, would be enabled to marry freely, and to procreate without any initial restraint. However, once begun, such morally unconstrained procreation would carry the seed of its own destruction by sooner rather than later meeting the barrier of food availability and food production. Malthus sharply concluded that given a particular period during which population doubled, at say twenty-five years, and reflecting

> upon labour necessary to double the produce in so short a time, even if we allow it possible; we may venture to pronounce with certainty, that if Mr. Godwin's [and for that matter, M. Condorcet's] system of society were established in its utmost perfection [read equality], instead of myriads of centuries, not thirty years could elapse, before its utter destruction from the simple principle of population.
>
> (Malthus 1798: 72–3)

The inevitable laws of nature therefore entail the two fundamental laws of society, 'the security of property, and the institution of marriage', and these, once established, ensure the 'inequality of conditions must necessarily follow' (71). Just as Malthus had trumped his father in earlier conversations, so his principle as elaborated in print ensured the briefest of futures for the speculations of the optimistic believers of progress, Godwin and Condorcet.

The analytical significance of the *Essay*

For the future development of political economy, the *Essay* carried a number of analytical implications. These were to shroud political economy with a visage of pessimism which by the middle of the nineteenth century earned it the epithet of 'dismal science' from Thomas Carlyle [though Carlyle had a quite different reason for this nomenclature]. Four propositions could be derived from Malthus' principle, the last two of which relate explicitly to the title of this paper. All of them have dismal or pessimistic implications for progress and growth. They can be simply summarised as follows:

1 The subsistence theory of wages. The fact established by Malthus, that subsistence is a limiting factor on population, and that raised living standards are directly related to population increases, became a justification for positing a rapid response of labour supply to higher than customary (subsistence) wage rates, hence ensuring the wages were held to such a minimum, customary, level of subsistence. This was often called the 'iron law of wages' of political economy, and unlike the optimistic growth vision of Smith, held out little hope for rising living standards of the workers.
2 The assumption of difficulty to increase food supply (or subsistence) in combination with increasing population (and hence labour force) foreshadowed the simple distributional proposition of the wages fund in which a given stock of wage goods (fixed at the end of the harvest) shared among the labour force and dependents in competition, determined the wage in terms of the subsistence that society could afford to pay.
3 The difficulty of growing extra food for a growing population (partly because of the cost of investment relative to yield, partly because of the growing scarcity of fertile land suitably located) emphasised for many (as it had for Malthus) that there was a different law of production for agriculture (diminishing returns) than for manufacturing (constant, or at best, increasing returns). These implied assumptions of Malthus' population theory induced the development of classical rent theory, which in turn evolved into doctrines of the falling rate of profit and the stationary state.
4 From the outset, Malthus used his theory of population to attack the nature of the poor laws as they had been inherited from the practice of the eighteenth century as a source of charitable assistance in case of working-class need and destitution. Such laws made the problem of poverty worse and provided no real alleviation of misery. Unrequited charity simply subsidised population growth, thereby failing to solve the problem of poverty. Unless the handouts were earned by hard work, the poor laws as they existed were a waste of time.

It need not be added that Malthus' views on population gained considerable and authoritative support. Ricardo fully supported Malthus' principle of population and the law of diminishing returns on which it was based. In the following generations, John Stuart Mill was an active neo-Malthusian, as was Wicksell in

Sweden, in the subsequent one. Moreover, Malthus' impact on the Poor Law was profound. The year of his death, 1834, saw the enactment of a new Poor Law instituting Malthus' principles on charity derived from his work on population.

The un-Smithian credential of the second generation – and some other morals

It is now time to relate the impact of the argument back to Smith's views on growth and progress, and their dependence on a strong, optimistic belief in the productivity potential and increasing returns from an ever expanding division of labour. It is the last which make the difference between Smith's vision of the future, and that more dismal prospect held out by his intellectual children and grandchildren. Malthus, ironically, had achieved this reversal by preaching diminishing returns in his advocacy of the principle of population against the utopias of perfected and equalised societies, extracted from the vision of infinite progress generated by some thinkers of the Enlightenment. Diminishing returns was subsequently built into the basic assumptions of classical growth models, following the lead of Ricardo, thence assuring the logical – and dismal – outcome of the stationary state (no matter how cheerfully this could be dressed up as a social opportunity for general improvement by some of Smith's grandchildren such as John Stuart Mill). Smith himself was too realistic a thinker to draw overly optimistic or pessimistic inferences from his scheme of progress and growth. For him it was sufficient to conclude that growth secured through increasing returns from the division of labour enabled workers to raise their living standards and society as a whole to enjoy the true progress of opulence.

Late in the nineteenth century, the Smithian message was recaptured by Marshall. In his *Principles of Economics*, he showed himself fully aware of how crucial increasing returns and the division of labour were for ensuring continual progress in output growth, in living standards and, his own hobby horse, in the standards of life. Marshall never rejected the possibility of increasing returns (as is customary in much contemporary economic theory). Instead, he welcomed it as the essential precondition for social and economic improvement. (He mourned the theoretical difficulties it caused in Appendix H of his *Principles*.) For Marshall, as for Smith, the growth in productivity from division of labour and other associated forms of industrial organisation, is the true source of wealth from which real progress is possible.

The Smithian growth process has another important message in this context. High productivity growth from an ever expanding division of labour allowed society to tolerate a relatively high proportion of the labour force devoted to an unproductive activity. For Smith, such unproductive employment included government activity, and – irrespective of what our private beliefs are on the value of public servants – high productivity today enables a greater public sector (and welfare state) to be supported without adverse consequences for the rate of growth. This allows the presentation of one further positive message from this powerful voice of reason from the eighteenth-century Enlightenment. High

productivity beats both wage cutting and the downsizing of government any time in terms of the prospects for genuine progress and improvement it holds out. Smith's theory of growth and progress continues to have much to offer, even at the start of the twenty-first century. It is this that makes his work so classical in the general sense of the term.

References

Condorcet, Antoine-Nicolas de (1795) *Sketch for a Historical Picture of the Progress of the Human Mind*, trans. June Barraclough, Westport: Greenwood Press, 1979.

Godwin, William (1793) *Enquiry concerning Political Justice and Its Influence on Morals and Happiness*, 4th edn, London: J. Watson, 1842.

Malthus, Thomas Robert (1798) *An Essay on the Principle of Population, as It Affects the Future Improvement of Society: With Remarks on the Speculations of Mr Godwin, M. Condorcet, and other Writers*, with a foreword by Kenneth Boulding, Ann Arbor: University of Michigan Press, 1959.

Marshall, Alfred (1890) *Principles of Economics*, 8th edn, London: Macmillan, 1920.

5 Pickering's collected Malthus

A review article[1]

The publication date (1986) of this first collected edition of the works of Thomas Robert Malthus (1766–1834) coincides with the sesquicentenary of the second, posthumous edition of his *Principles of Political Economy* by William Pickering of London, the forerunner of the publishers of this collection. Its eight volumes[2] are said to comprise all of Malthus' known published writings. This collection (Wrigley and Souden 1986) is also the first in a series of 'Pickering Masters' that promises 'texts reset to modern standards, English translations where necessary, scholarly introductions and textual notes, and a general index for each author'.

The Pickering venture virtually coincides with Malthus publishing initiatives from the Royal Economic Society and Cambridge University Press. In 1926 the Royal Economic Society and Macmillan reprinted the first edition of Malthus' *First Essay on the Principle of Population*, with notes by James Bonar.[3] More than half a century later it is publishing a variorum edition of subsequent versions of the *Essay* that appeared between 1803 and 1826 in tandem with a variorum edition of Malthus' *Principles of Political Economy*. These editions have been prepared, respectively, by noted Malthus scholars Patricia James and John Pullen. Whether this Malthus publishing double is a fortunate coincidence seems doubtful. However, it provides an almost unique opportunity for consumer choice to economists wishing to have a representative sample of Malthus' major work on their bookshelves.

The value of such increased accessibility of Malthus' works for contemporary economists perhaps needs some demonstration. Although for close to a century after his death Malthus was ignored as an economist for all practical purposes, publication of John Maynard Keynes' *General Theory* in 1936 sparked considerable revival of interest in his work. In the centenary allocution written after his revised 1933 *Memoir of Malthus*, Keynes claimed that Malthus had

> a profound economic intuition and an unusual combination of keeping an open mind to the shifting period of experience … [and that] Malthus, above all, was the great pioneer of the application of a frame of formal thinking to the complex confusion of the world of daily events.
>
> (Keynes 1972: 107–8)

Thirty years later, the occasion of the bicentenary of Malthus' birth allowed Robbins (1967: 260) to remind members of the Royal Economic Society 'that Malthus is one of the most illustrious of our predecessors'. Reasons included his 'instinct against rigidity' in thought, his love of truth, and his profound humanity. Such qualities are rare and valuable in economists. Hence, irrespective of the degree of acceptance these appreciations of Malthus induce, an opportunity to study such qualities at first hand provides one strong justification for making Malthus' writings more readily available. Historians of thought will find justification enough from many new interpretations of Malthus' work that have appeared over the last decade, and the evidence of a new Malthus revival such as the 1984 Paris 'Malthus Past and Present' conference, at which no fewer than 164 papers were presented.

Readers of this journal will want to know what benefit the modern economist can derive from studying the collected writings of Malthus. As the views from Keynes and Robbins already cited suggest, such benefits do not come from specific aspects of his doctrine but from the perspectives he brought to the study of political economy. In particular, those seeking explanations for economic events in the modern world will gain from closer acquaintance with what has been described as Malthus' 'wondrous gift' of 'intuition to bring to an explicit level deep problems of economic life' (Stigler [1953] 1965: 311). A full appreciation of this major talent requires careful study of its application by Malthus, something clearly facilitated by the publication of these collected works. Some references to samples from these collected riches may, therefore, at least illustrate this enduring quality in Malthus' writings to which Keynes, Robbins and Stigler have pointed. When learning from mistakes is also a useful quality for the practising economist, Malthus' 'great weakness', or his inability to 'reason well' and to construct theories fully consistent with themselves and the facts of the world (Stigler 1965: 311), may be equally instructive.

As a first sample, economists can be directed to Malthus' introduction to this *Principles of Political Economy* (5: 5–18) with its useful emphasis on the limitations of the science. Malthus' warning about the attraction of simplification and generalisation and the dangers of single-cause explanations, in combination with his reference to Isaac Newton's 'admirable rule' of not admitting more causes than are strictly necessary to solving the problem at hand, is a good example of its methodological wisdom. Equally useful is the associated

> strong conviction … that the frequent combination of complicated causes, the action and reaction of cause and effect on each other, and the necessity of limitations and exceptions in a considerable number of important propositions, form the main difficulties in the science, and occasion those frequent mistakes which it must be allowed are made in the prediction of results.
>
> (8–9)

Furthermore, Malthus' appeal for a need to bring theories 'to the test of experience' and the difficulties inherent in such a test (10–11) can still bear repeating

in economics, as well as the reason for this need that he saw in the essentially applied and practical nature of the subject. The supporting illustrations he gave, drawn from his discussion of limitations on the duties of the state, contain advice, the validity of which stands as firmly today as it did in 1819 when first written (15). This introduction concisely reflects the qualities Robbins praised in Malthus in his non-rigid thinking, his love of truth, and his profound humanity.

A sample of Malthus' capacity for perceptive economic analysis can be found in his discussion of the consequences of an increased paper money supply for prices, activity levels, and the distribution of income, largely intended to illuminate the extent and the manner in which 'an increase of currency tends to increase capital' (7: 46–50; cf. 74–5). This discussion arose from a need to reconcile the practical views of merchants and manufacturers on their perceived ability to increase their productive capital through a loan of paper money with the opinion expressed in the literature that such transactions can in no way increase the capital of the country. Malthus' explanation, then still relatively novel, involved forced saving via the consequences of the distribution of the additional circulating medium on prices and profits in the short run, and increased potential for accumulation from the output effects of this increased capital over the longer run. Although his view is different from Richard Cantillon and David Hume's view on the stimulus to activity from increased money supply (Malthus assumes fully employed resources), he nevertheless used it to settle a conflict of opinion between Hume and Adam Smith on the matter in Hume's favour, on the basis of an episode of Scottish economic history of the 1750s, taking these data also as confirmation of his theory (49). This monetary discussion, inspired by the bullion controversy, also supports the well known note in the *Principles* (6: 260 n10) on the importance of money to the analysis of economic growth because of its effects on the distribution of wealth and the encouragement of economic activity. This seems to be one aspect of Malthus' work that clearly resembles that of Keynes, because it places much emphasis on the importance of analysing a monetary economy and avoiding the dangers of seeing money as a veil.

Malthus' use of empirical data, for which he has also often been praised, is perhaps best illustrated by reference to his ultimate piece on the population theory that was contributed in 1824 to the supplements of the *Encyclopaedia Britannica*. In this work, by careful use of the available US demographic statistics (including making the necessary corrections for immigration), he was able to show the possibility of a country actually doubling its population every twenty-five years for a considerable period of time. This, in combination with evidence obtained from the early nineteenth-century censuses of England and Wales, allowed Malthus to derive a general result. From these data he felt it safe to assert 'that population, when unchecked, increases in a geometrical proportion of such a nature as to double itself every 25 years', an indication for him that it was clearly possible for mankind to increase at this specific rate (4: 184–93). However, the article's emphasis on demographic data to substantiate

the famous geometrical progression of increases in population can be contrasted with the complete absence of empirical evidence to substantiate the prediction that agricultural productivity could not possibly rise eightfold over the next two centuries (194). This perhaps reflects his capacity for inconsistency noted by Stigler. After all, this unsubstantiated prediction about agricultural production in the work for which he always was largely noted sits uneasily with his remarks on the dangers in making economic predictions quoted earlier from the introduction to his *Principles*.

The foregoing is only an indication of the variety and interest of the Malthus material gathered in these collected works. They can easily be increased. For example, a quite different Malthus is presented in his defence of the East India College, where he was professor of political economy. The defence has a clarity of purpose and style that some present university administrators would envy. However, it is clearly impossible to review all facets of Malthus' work presented in the eight volumes of his collected writings.

What strategy should the reviewer of the collected works of a classical economic writer then adopt? Taking a leaf from Stigler's review of Sraffa's Ricardo (Stigler 1965: esp. 302–3) I will proceed as follows. I will first evaluate the quality of the edition. Next, I will review some recent work on Malthus' theory of effectual demand and accumulation in the context of the material presented in this edition. This is designed to highlight the edition's usefulness for settling unresolved questions about Malthus' work, a matter of interest to the economist as well as to the historian of economic thought.

Quality of the edition

After the publication of the Sraffa edition of the works and correspondence of David Ricardo (1951–73), reviewers have established nearly an absolute standard of excellence for measuring the quality of similar ventures. That edition set virtually unbeatable records for comprehensiveness,[4] degree of accuracy in transcriptions and preparation of variorum texts, and scholarship in editorial notes and introductions. Last, but by no means least, its contents include a superb general index, though this did not appear until more than two decades after the publication of the initial volumes of text. In the words of one of its reviewers (Stigler 1965: 303–4), Piero Sraffa's work exhibited 'extraordinary … accuracy', 'superb … editorial notes', and 'superlative quality of scholarship', qualities in the light of subsequent experience difficult to emulate, let alone surpass. Thus the Sraffa edition of Ricardo acts as an absolute standard of quality in evaluating like ventures in terms of their departures from that ideal.

Some specific features of the edition may be mentioned first. The texts have been reset to modern standards and the eight volumes aesthetically bound in uniform style. As detailed later, this resetting has imposed costs. The edition allows identification of the pagination of original editions actually reprinted while continuous pagination for each volume (at the bottom of the page) meets the needs of the general index. However, pagination of editions not reprinted,

like the first edition of the *Principles*, cannot be identified. Further, English translations from foreign-language quotations are not invariably provided (e.g. 3: 505; 5: 25, 112; 6: 270–5; 7: 117; 8: 115–16). This is one of a number of cases of not matching promise with performance. The general index (8: 125–65) is very comprehensive and surpasses in quality the list of sources Malthus used, another feature of this edition.

Completeness has to be judged also. The edition's intended coverage (1: 7, 12–13) was explicitly confined to 'the published writings of Thomas Robert Malthus', thus excluding thereby correspondence and travel diaries. Although much of the important Malthus-Ricardo correspondence is already in print (Ricardo 1951–73: vols 6–9, 11) as are the more important travel diaries (James 1966), there is much other correspondence extant, at least some of which (e.g. that with Francis Horner, Thomas Chalmers and Henry Parnell) is of interest to economists and has been published in forms of varying accessibility (see e.g. Zinke 1942; McCleary 1953; de Marchi and Sturges 1973). In addition, unpublished manuscripts, travel diaries, personal papers, and family and other correspondence, including the substantial correspondence with his father Daniel (long believed to have been lost), have recently been rediscovered.[5]

There are omissions other than the manuscript material just mentioned. One example is the evidence Malthus gave to select parliamentary committees in the 1820s, the two occasions[6] when he did so both being of interest to economists. A second regrettable omission is the Inverarity manuscript with its series of questions on Adam Smith that Malthus put to his students at Haileybury College. This omission is all the more regrettable because it is one of the more detailed sources for Malthus' views on the Physiocrats (Pullen 1981; cf. Bonar 1924: 427–8). A final class of omission covers published articles attributed to Malthus. Although I will ignore the list of articles in the *British Critic* Rashid (1982: 25) attributes to Malthus on slender evidence, two articles in the *Edinburgh Review* of 1808 and 1810, for which attribution to Malthus is firmer, need to be mentioned. This edition (vol. 4, essays 2, 3 and 6; vol. 7, essays 2 and 3) reprints the five articles from the *Edinburgh Review* attributed to him on which there is no dispute, but the exclusion of the two others (see Semmel 1963: 14–16) is at least debatable.[7]

Other aspects of the quality of the edition need examination. Take first E. A. Wrigley's general introduction (1: 7–39). It starts with a brief statement of editorial policy and the 'limited' objectives of the edition, continues with a sketch of Malthus' life, and concludes with an economic historian's evaluative sketch of his work, emphasising that on population. It provides some useful insights. Highlighting Malthus' struggle between 'clarity' and 'comprehensiveness', as well as the concluding statement relating Malthus' determination 'to ground speculation in an empirical framework' to a requirement 'to read and to judge' his work 'in the context of his times' (39) seems useful information for those about to embark on a Malthus reading marathon. However, the 'interpretative' rather than 'factual' nature of the introduction renders it liable to the more rapid obsolescence to which views on the importance of a particular social

scientist are so often prone, a danger enhanced when the person whose views are investigated is a controversial figure like Malthus. Such 'factual' neglect also reduces the potential value to its readers.[8]

Introductions to individual volumes leave much to be desired. One example will suffice. David Souden's introduction (7: 7–11) to the ten essays on political economy is an outstanding example of editorial thrift and is confined to only four and a half pages. Compared with the information M. H. Dobb and Sraffa provide on Ricardo's bullion papers (and useful as a starting point for those interested in Malthus' essays 2 and 3 in this volume), Souden's introduction is a veritable desert of non-information. For example, no details are given on Malthus' inspiration for the essays in question, the background to their immediate occasion, nor, for that matter, the number of printings or editions they enjoyed, the reception they received, and, where relevant, the version from which the present reprint was made.[9] On this score, Pickering's edition has very little to offer.

The usefulness and consistency of the editorial notes are on a par with the quality of the introductions. This arises in part from the edition's dubious practice of altering Malthus' system of referencing 'into a modern form … though this entailed altering and extending the original text of the footnote' (but without making it possible for the reader to see how the original reference was made apart from consulting the original text; see 1: 9–10). Apart from possible wrong identification of such references inherent in this practice, the system is far from consistently applied.[10] Likewise, cross-references to the pagination of the current editions are provided without any real consistency (e.g. cf. 7: 198 n12 and n(a) thereto with 191 n9, 210 n19, 212 n20, and 213 n20). With a collected Malthus not likely to be repeated, this editorial weakness seems an important 'lost opportunity', though the time and effort involved to remedy these shortcomings would have been fairly substantial.

More serious is the absence of editorial notes (so liberally included in Sraffa's Ricardo) providing real background to the reader, an omission all the more strange given the argument of the general introduction that Malthus' views should be judged within their context. Absence of such notes presumes also an enormous general knowledge on the part of the reader with respect to early nineteenth-century current affairs and classical Greek and Roman literature. Even when compared with Jacob Hollander's 1903 reprint of Malthus' *Inquiry into the Nature and Progress of Rent*, Pickering's version scores badly. Its two editorial notes, 7: 127 n(a), 142 n(b), only correct minor misprints in the original (neither of which was corrected by Hollander), but this version ignores the misprints identified by Hollander, including a wrong page number in a reference, and it makes no attempt to match the information in Hollander's fifteen additional editorial notes.[11]

Judgement about the variorum edition is best left till the Royal Economic Society Malthus ventures are published. It may be noted, however, that Pickering's edition invariably compares only two versions of the works it gives variorum treatment. For the *Essay on Population* this means that changes in the third (1806), fourth (1807), and fifth (1817) editions cannot be tracked, and it

is therefore impossible to systematically trace the evolution of Malthus' thoughts on population through the three decades in which they developed.

Although a variorum edition is perhaps of little use to most economists, this omission in the variorum treatment creates problems in trying to answer questions in which there may be greater interest. Pickering's Malthus, for example, easily allows an assessment of the use Malthus made in the sixth edition of the 1801, 1811, and 1821 population data made available by the census established by act of Parliament in 1800. However, it cannot indicate the extent to which he was induced by the existence of these data to alter his theory in particular respects. Generally speaking, as is in any case well known, he took these new data as confirmation of his principle of population because they so clearly showed the potential for population growth in a rapidly developing country such as England during these decades of the nineteenth century. Availability of these data also changed his more conservative perception of population growth in modern times, from that given in the first essay (1: 26), where it was quite wrongly described as 'slow' if not stationary or 'retrograde' because of the efficacy of the checks on population.

The major change between the first and subsequent editions of the *Essay* was the addition of a further check on population, which Malthus called 'moral restraint' (2: iii). This was a significant change to the argument because it reopened the door to the possibilities of human progress that the first essay appeared to have shut so firmly against the optimistic speculations in this respect of William Godwin, the Marquis de Condorcet, and even Adam Smith. A specific feature of this change of heart on Malthus' part was the increasing emphasis on the benefits of education for the poor in the later editions. These not only arose from dissemination of the advantages of moral restraint; they also enabled a wider understanding of the laws of political economy among the working classes. Malthus (3: 526n) suggested that ignorance of these laws was 'not merely a deprivation of good but produces great positive evil', a sentiment likely to be endorsed by most readers of this journal. Since the economics of education and the education of economics are not subjects for which Malthus was greatly known, two brief quotations on this subject from the later essay on population may be permitted:

> It is particularly gratifying to me, at the end of the year 1825, to see that what I stated as so desirable twenty two years ago, seems to be now on the eve of its accomplishment. The increasing attention which in the interval has been paid generally to the science of political economy; the lectures which have been given at Cambridge, London, and Liverpool; the chair which has lately been established at Oxford; the projected university in the metropolis; and above all, the Mechanics Institution, open the fairest prospect that, within a moderate period of time, the fundamental principles of political economy will, to a very useful extent, be known to the higher, middle, and a most important portion of the working classes of society in England.
>
> (3: 526n; cf. 4: 79–80)

> Much might be expected from a better and more general system of education. Everything that can be done in this way has indeed a very peculiar value; because education is one of those advantages, which not only all may share without interfering with each other, but the raising of one person may actually contribute to the raising of others. If, for instance, a man by education acquires that decent kind of pride and those juster habits of thinking, which will prevent him from burdening society with a family of children which he cannot support.
>
> (3: 562–63)

The second edition of the *Essay on Population* (2: ii) also drew attention to Malthus' use of sources. An important feature of Pickering's Malthus is the emphasis its editors have placed on providing maximum information on the printed sources Malthus used in his writings. These are included not only with each subset of volumes. A consolidated list is provided (1: 61–74) as well as a comparative table of authorities used by Malthus in the six successive editions of his *Essay on Population* (53–9). The editors' preparation of this bibliographical material is acknowledged to have been greatly assisted by the work of John R. Harrison, the historical bibliographer who was involved in the publication of the *Malthus Library Catalogue* covering the personal book collection associated with Malthus now held at Jesus College, Cambridge (Harrison 1983).

As with other editorial aspects of this work, this in principle very useful information suffers from some shortcomings. It is disappointing, for example, that frequency of citation of individual authorities is not indicated in the source lists appended to specific volumes, and that the requisite page references are not given in the lists. In addition, they contain bibliographical errors and are incomplete.[12] In spite of these deficiencies, such a list of sources has a number of uses, including assessing Malthus' knowledge of published Physiocratic work, an issue that continues to attract attention (see Thweatt 1987).

On accuracy of the text as printed and quality of the proofreading, it is fortunately possible to be more complimentary. However, their serious testing poses some difficulties that arise from the editors' deliberate 'interventionist' policy to modernise the text in various respects. These include not only spelling, punctuation and the use of capitals and italics, based on practice enshrined in the thirty-ninth edition of *Hart's Rules for Compositors and Readers at the University Press, Oxford* (1: 11, n7), but, more important, an attempt to introduce consistency in the printing of numbers in words or digits, and the modernisation of geographical and ethnographic proper names (such as Tahiti for Otaheite and Bedouin for Bedoween). The problem with this is that today's modernity is tomorrow's anachronism, an adage confirmed by the fact that *Hart's Rules* has enjoyed no fewer than thirty-nine editions between 1893 and 1983. The editors suggest that such changes were kept to a minimum. An indication of what that meant in practice was obtained by textual comparison of the original text of one of Malthus' essays with the version printed by Pickering. This disclosed no fewer than 140 changes, of which at least two

appear more serious.[13] Most of the changes confirm the interventionist editorial standards explicitly adopted.

'Aesthetically pleasing' seems therefore a better way to describe the quality of the edition, rather than scholarly accurate and proficient. Its deficiencies in these respects considerably mar its potential usefulness to Malthus scholarship. However, unlike Sraffa's Ricardo, this edition of Malthus' works has not had the benefit of lavish subsidy from a learned society, and was completed in about two years rather than the twenty years required by the former.

Malthus on gluts, accumulation, and effectual demand

In a detailed comment on a survey of recent Malthus literature, Pullen (1987a) expressed the hope that 'the future of Malthus studies looks promising', partly because Pickering's collection will facilitate access to all of Malthus' texts, thereby counteracting the tendency toward partial interpretations based exclusively on the *Essay* or the *Principles*. This cause of confused interpretation of Malthus is exacerbated, Pullen argues, by the fact that these major works went through various editions containing considerable revisions. This section concentrates on the first potential benefit Pullen associates with Pickering's Malthus: the extent to which the presence of the bulk of Malthus' work in a collected edition can assist solutions to conflicting interpretations of Malthus. Recent literature on Malthus on gluts, accumulation and effectual demand was taken as a sample to test his hypothesis.

Not only the literature sample but also the range of questions to be asked are limited if only for reasons of space. The sample is confined to seven contributions: Samuel Hollander (1969; 1979), Bleaney (1976), Costabile (1980; 1983), Eltis (1984) and Costabile and Rowthorn (1985). This small sample contains considerable scope for explicit controversy (e.g. Eltis 1984: 177–81; Costabile and Rowthorn 1985: 420 n1, n2; 421 n1, n2; 423 n2). The questions asked address the extent to which differences in opinion expressed in these writings were considered capable of being resolved by textual evidence, hence potentially assisted through the publication of Pickering's Malthus. They do not shed light on the controversies themselves.

What is of concern, therefore, is the practice of the authors themselves in using a variety of Malthus' works to settle problems of textual exegesis and general interpretation. Works of Malthus cited and their frequency clearly give a clue to the importance they assigned to availability of all his works. Table 5.1 presents these data in a convenient form.

Apart from fairly predictable conclusions, such as the fact that Hollander (1969) refers to the greatest number of different works by Malthus (eleven of the fifteen mentioned by the sample as a whole), tying second with Eltis (1984) with nine of fifteen for his (1979) discussion, the data shed some interesting light on the potential usefulness of the Pickering collection to Malthus scholars. Of the fifteen items by Malthus mentioned in the sample, twelve are contained in the work under review, and these include two of the most frequently cited

Table 5.1 Citations to Malthus' writings by various authorities on his glut theory

Authorities[a]	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
Bleaney (1976: 42–56)[b]	4	3			5										
Costabile (1980: 77–132)		53	1		10								9		
Costabile (1983: 156–69)	2	17			3		3						5		
Costabile and Rowthorn (1985)[c]	1	49		3	2			1		1			2		
Eltis (1984: ch. 5)	12[c]	6	3	2	2		1		1				4	1	
Hollander (1969)	7	26		14	13	1			1		2	3	1	1	3
Hollander (1979: 523–35)[d]	3[e]	23		3	8				1		1	3	1	1	

Notes:
Malthus' sources are: (1) *Principles of Political Economy*, 1st edn, 1820 (Pickering vols 5 and 6); (2) *Principles of Political Economy*, 2nd edn, 1836 (vols 5 and 6); (3) *Essay on Population*, 1st edn, 1798 (vol. 1); (4) *Essay on Population*, 5th or 6th edn (vols 2 and 3); (5) Ricardo-Malthus correspondence (in Sraffa's *Works of Ricardo*); (6) *Investigation of the Cause of the Present High Price of Provision*, 1800 (vol. 7); (7) *Depreciation of Paper Currency*, 1811 (vol. 7); (8) *Inquiry into the Nature and Progress of Rent*, 1815 (vol. 7); (9) *Grounds of an Opinion of the Policy of Restricting the Importation of Foreign Corn*, 1815 (vol. 7); (10) *The Measure of Value*, 1823 (vol. 7); (11) review of Tooke's *High and Low Prices*, 1823 (vol 7); (12) review of McCulloch's article, 'Political Economy', 1824 (vol. 7); (13) *Definitions of Political Economy*, 1827 (vol. 8); (14) correspondence with Prévost (in Zinke 1942); (15) evidence by Malthus to the Select Committee on Emigration from the United Kingdom, 1827.
[a] References are restricted to a major part dealing with gluts in Malthus.
[b] Explicitly argues (60, n39) that the difference between editions is unimportant.
[c] Cites Costabile (1980; 1983).
[d] Cites Hollander (1969).
[e] Explicitly argues the importance of differences in the two editions.

references: the second (1836) edition of the *Principles* and the *Definitions* (1827) (177 and 22 references respectively), and if the first edition of the *Principles* (1820) is included, twenty-nine citations are added. Whether adding the first edition is legitimate raises questions on the value of the variorum quality of Pickering and some other matters discussed subsequently. The major omission from Pickering is the Malthus-Ricardo correspondence, which gets forty-three citations and is rightly regarded as an indispensable source by researchers of this question. Together with the *Principles*, it is the only source common to all seven articles or books. Another item of Malthus correspondence, that with Pierre Prévost, gets only one really independent citation in this context,[14] in Hollander (1969); the same applies to the evidence by Malthus to the 1827 emigration committee, omitted from Pickering. On aggregate, works cited from the essays on political economy (vol. 7) account for nineteen citations from seven separate essays and the *Essay on Population* for a further twenty-six, largely because Hollander (1969; 1979), Eltis (1984) and Costabile and Rowthorn (1985) include wages as part of their inquiry.

The data in Table 5.1 also shed light on the relevance of access to variorum editions of a work for serious Malthus scholars. This seems only to have been important in the case of the two editions of the *Principles* used by all researchers with varying degrees of discrimination.[15] At one side of the spectrum, Bleaney regarded the matter of choice between editions in this context with pure indifference, arguing explicitly that 'no important changes were made on the subject with which we are concerned' and that hence there is no significance to his almost symmetrical alternative switching between the two editions in his citations (Bleaney 1976: 60). On the other hand, where relevant, Hollander carefully indicates when there are variations between the editions (e.g. 1979: 529, n168), while Eltis' use of the two editions clearly suggests that for him they do contain significant changes of relevance to his research on the subject. Costabile (1983) (and in her paper with Rowthorn [1985]), while having a clear preference for using the second edition, signals changes of importance from the first edition. It may be added that use of the first edition is enhanced in this context by the fact that the version most frequently used is the one partially reprinted in Ricardo (1951–73: vol. 2) which contains Ricardo's notes on Malthus. Generally speaking, access to a variorum edition of Malthus' *Principles* is clearly of value to researchers in this sample, and Pickering's edition (vols 5 and 6) has filled at least part of this gap.

Obtaining a spread of Malthus' works was also of importance to researchers from the investigations conducted here. This is particularly the case for Hollander (1969), who was praised for that very reason by Eltis (1984: 349, n21) and Costabile and Rowthorn (1985: 424, n5). In the light of Pullen's (1987a) comment quoted at the start of this section, it is also interesting to note that Malthus' *Essay on Population* is relevant to five of the seven pieces. This is not surprising since the last two editions cover the post-Napoleonic war depression in Britain (vol. 2: vi, which indicates changes made in the fifth edition [1817] partly reflecting this changed circumstance). By contrast, it is surprising

that only Hollander (1969) cited Malthus' *High Price of Provisions* (vol. 7: essay 1), despite the extravagant praise Keynes (1972: 88–90) gave it in this context. However, with reference to the monetary aspects of the glut debate, of which Malthus himself was in no doubt (6: 260, n10), the approach of Costabile, Eltis, Costabile and Rowthorn, and Hollander, which explicitly draw on Malthus' monetary writings for that purpose, seems preferable to Bleaney's more sparse approach. Likewise, the data clearly support the value of Malthus' *Definitions* (vol. 8) in this context, and Eltis (1984: 348, n6) for that reason defends it against an unfortunate remark on its quality in James (1979: 410), inspired by Keynes (1972: 92, n1).

From the perspective of its usefulness to Malthus scholars, this part of the inquiry into Pickering's Malthus can be concluded by making one further comment on the value of integrating the views of the author of the *Essay on Population* with the economist of the *Principles*. The *Essay on Population* contains a striking passage on taxation in its relation to demand, which in some of its aspects makes Malthus more a pioneer of Reaganomics than the embryonic Keynesian he is so often painted to be. The passage is quoted without further comment, apart from a reminder that it gives further support to a corollary from Jacob Viner's dictum that it has to be very peculiar economic doctrine if it cannot find support from a noted economic authority:

> The effects of taxation are no doubt in many cases pernicious in a very high degree; but it may be laid down as a rule which has few exceptions, that the relief obtained by taking off a tax, is in no respect equal to the injury inflicted in laying it on; and generally it may be said that the specific evil of taxation consists in the check which it gives to production, rather than the diminution which it occasions in demand.
>
> (3: 378)

Conclusions

The quality and usefulness of the edition to prospective buyers having been discussed, the matter of price must be briefly considered to complete the advice on this consumer choice problem in Malthus editions. The eight volumes of Pickering's Malthus, which have to be treated as a package since they are not sold by single volumes, cost £360 ($570) at the approximate rate of exchange in mid-March 1987. For once a near-perfect if not more perfect substitution is available from a combination of other editions. The data on this are given in Table 5.2.

Table 5.2 shows that nearly every Malthus text included in Pickering,[16] but not, of course, the introductions, general index, and list of printed sources, can be bought for close to half the price that Pickering charges for its edition. From discussions in earlier parts of this article, it has been demonstrated that it is mainly the aesthetics of the bookshelf which are sacrificed if the alternative package delineated in Table 5.2 is purchased, and that in buying the first two

items produced by the Royal Economic Society and Cambridge University Press, the buyer is likely to gain in scholarly quality with respect to the variorum work, editorial notes and introduction. It is a pity that Pickering's interesting new venture has traded off speedy completion for editorial quality, though this choice also reflects an economic climate changed from that experienced by Sraffa. However, economists interested in Malthus can only profit from these benefits of competition in the expensive market of reprints of economic classics, which this has produced.

Table 5.2 Alternative purchase opportunities of Malthus' major works

Edition	*Price, US$*
Essay on Population (variorum edn, ed. Patricia James) Cambridge University Press for Royal Economical Society, 1987; £60;[a] *Principles of Political Economy* (variorum edn, ed. John Pullen) Cambridge University Press for Royal Economical Society, 1987; £60[a]	190.00
First Essay on Population, Kelley[b]	29.50
Definitions of Political Economy, Kelley	29.50
The Measure of Value, Kelley[b]	29.50
The Pamphlets of T. R. Malthus, Kelley	35.00[c]
Five Papers on Political Economy, Reprint of Economic Classics, Series 1, no. 3, Dept. of Economics, University of Sydney; $A4.00	2.75
Review of Bullion Controversy 1811, Reprint of Economic Classics, Series 1, no. 2, Dept. of Economics, University of Sydney; $A2.00	1.40
Total	320.00[c]

Notes:

This reproduces all the Malthus texts in Pickering's collection except for essays 2, 3, 6 and 7 in vol. 4.

[a] Publisher's estimated price only.

[b] Not included in their most recent catalogue.

[c] At bargain price of $12.50 for this item, the total cost falls to $295.00.

Notes

1 The preparation and revision of this review article have benefited from John Pullen's generous assistance and suggestions from George Stigler, here gratefully acknowledged. This review is respectfully dedicated to the memory of Patricia James, the noted Malthus scholar, who died suddenly, but peacefully, on 15 March 1987. I was informed of her death by her son after writing to her for assistance with a query, which unfortunately she herself will now no longer be able to answer.

2 The eight volumes include: 1, *An Essay on the Principle of Population* (1798); 2 and 3, *An Essay on the Principle of Population* (1826); 4, *Essays on Population*; 5 and 6, *Principles of Political Economy* (1836); 7, *Essays on Political Economy*; and 8, *Definitions in Political Economy* and a general index.

3 Bonar (1926: i–ii) reported that the first edition was a rarity already in 1895 when William Ashley edited parallel chapters from the first and second editions. Details of other reprints of the first edition are given in vol. 1: 52.

4 Both the comprehensiveness and accuracy of Sraffa's Ricardo can be assessed by the small number of corrections and omissions the editor subsequently had to report (Ricardo 1951–73: vol. 10, 411; vol. 11, ix–xxxii). Another omission from Sraffa's

Ricardo, and one associated with the subject matter of this article, is Ricardo's commentary on Malthus' *Measure of Value*, published in Porta (1979). Its existence is not mentioned as relevant information in the introduction to that essay on political economy by Malthus in this edition (7: 10).

5 In 1986, Maggs Brothers Ltd, booksellers of Berkeley Square, London, offered for sale what they describe as the 'Malthus Archive', consisting of the remaining manuscripts and correspondence of Malthus and his family discovered in the home of the late Robert Malthus on the Isle of Wight. The catalogue lists a substantial number of letters, as well as draft manuscripts including several on economic topics. These include an early essay on colonies (c.1800), notes on taxation, and a variety of papers on monetary matter. This information was kindly supplied by John Pullen.

6 The first was the evidence to the Committee on Artizens, Machinery and Combinations given by Malthus on 10 May 1824 (see Gordon 1979: 30; James 1979: 391), which among other things puts Malthus' economic views on combinations in a more liberal perspective. His May 1827 evidence to the Committee on Emigration could have been usefully included with his essays on population (vol. 4) to which much of it is relevant. It also contains interesting changes in Malthus' policy views on public works (Bonar 1924: 195, 240–1; James 1979: 391–6).

7 The essays in question are a review of John Ingram's *Disquisitions on Population* and William Hazlitt's *Letters in Reply to Malthus* (*Edinburgh Review*, August 1810) and one of William Spence on commerce (January 1808). Bonar (1924: 33 n2, 329 n3) suggests Malthus as the author for the former, though he admits that Francis Jeffrey probably provided his customary 'head and tail' to disguise authorship. Fetter (1953: 247) declines to make such a positive attribution because the essay speaks too well of Malthus' own work on population, and subsequent scholarship supports Fetter rather than Bonar (Semmel 1963; James 1979; Pullen 1987b). The article on Spence on commerce is more firmly and widely attributed to Malthus (Fetter 1953; Henderson 1984; Pullen 1987b), but not by Semmel (1963). Fetter relies on Horner's correspondence with Jeffrey (quoted by James 1979: 149–50); Pullen (1987b) adds internal evidence, and more tellingly Henry Brougham's direct attribution to Malthus, in his list of contributors to the *Review* now at University College, London. Referencing in this essay and Malthus' known work further supports an attribution, particularly the reference to Berkeley's 'wall of brass' (*Edinburgh Review*, January 1808, 447), used in Malthus' *Essay on Population* (3: 403) and derived from Berkeley's *Querist* (query 134 in Johnston [1970: 136]), of which Malthus had a copy in his library (Harrison 1983: 14).

8 Perhaps a wise decision, given the factual weaknesses in the introduction commencing with the bibliographical note (7), which contains a number of errors. Likewise the factual material on Malthus the demographer and economist is scanty. For example, little attempt has been made to flesh out the gain in Malthus' demographic knowledge between 1798 and 1802, to which reference is made (1: 22; 3: 7–9).

9 An example is Malthus' *Observations on the Effects of the Corn Laws*, which, as shown by James (1979: 253), was reprinted immediately with minor alterations and went through one further revision. This added three pages to the original forty-four, including some notes (256). No indication of any of this is presented to the reader of this collection. John Pullen has reminded me that the second, posthumous edition of the *Definitions* ought also to be noted in this context.

10 An example of wrong identification is the reference to John C. Curwen's plan (3: 551), which confuses his 1808 pamphlet with speeches in Parliament in which he outlined the plan (28 May 1816, and 21 January 1817). An example of inconsistent practice is given by no fewer than seven notes in the reprint of *The Measure of Value* (7: 180 n3; 182 n4; 186 n7; 189 n8; 215 n23), which fail to follow modern usage by not providing page references to the works cited.

11 See Hollander (1903: 50–1, nn. 6, 8, 9, 13, 19). Note 9 draws attention to an incorrect page reference to Smith's *Wealth of Nations* in the Buchanan edition, which should read 272 instead of 212 as given in the original text of Malthus (and faithfully reprinted in vol. 7, 118, n5).

12 This is remedied only in part by the general index, which fails to include entries for works cited by Malthus, confining itself to including their authors as simple name entries. Assessing frequency of citations will therefore require a considerable amount of work. It may also be noted that apart from the general index (8: 125–65), the only volumes with an index are those that reproduce the original index of the works reprinted (i.e. 3: 625–57; 6: 351–60). Wrong bibliographical information in the checklist is easily illustrated. Items are included as anonymous for which firm author attributions are available. Examples are the 1819 *Edinburgh Review* article on Robert Owen's plan for relieving the national distress, now generally assigned to Robert Torrens, and the 1825 *Westminster Review* paper on the corn laws now generally attributed to John Stuart Mill. Some entries present wrong or ambiguous information, e.g. A. R. J. Turgot's *Réflexions* in the 1788 edition, Daniel Defoe's *Giving Alms No Charity*, Pierre Samuel Du Pont's *Physiocratie*, and Josiah Tucker's *Elements of Commerce and Theory of Taxes*. There are also surprising omissions, of which Ricardo's *Proposals for an Economical and Secure Currency* and Bishop Berkeley's *The Querist* are the more notable.

13 The essay compared is the review on political economy (7: 257–97), which originally appeared in the *Quarterly Review*. On this matter I am indebted to Jack Towe for research assistance, here gratefully acknowledged. The two serious errors he found occur in vol. 7, 274, line 7, which changes the original 'plat' to 'plait', and 284, line 10, which omits 'any' before 'new capital'. The three to four errors per page compare unfavourably with Sraffa's record as disclosed by Stigler (1965: 303–4).

14 Both Hollander (1979) and Eltis (1984) cite Hollander (1969) in the context in which reference to the Malthus-Prévost correspondence is made.

15 The exception of Costabile (1980) is probably explained by her use of editions for which Italian translations are available. There is an Italian translation of the second edition, edited by P. Barucci, but there is no translation of the first (see Costabile 1980: 138). In this context George Stigler has noted that, in his view, the value of variorum editions is grossly overrated because 'priority should always be given to the edition … contemporaries read'. This opinion justifies neglect of the posthumous second edition of Malthus' *Principles*, the text in fact reprinted in Pickering.

16 Texts included in Pickering and not currently available in reprint are the two reviews dealing with Ireland (*Edinburgh Review*, 1808, 1809), the review of Godwin on Malthus (*Edinburgh Review*, 1821), and the contribution on population for the supplement to the *Encyclopedia Britannica* (1824), constituting the greater part of vol. 4. Three of these would be purchased in a second-hand copy of Semmel (1963).

References

Berkeley, George (1735) *The Querist; or, Several Queries Proposed to the Consideration of the Public*, Dublin: Reilly.

Bleaney, Michael F. (1976) *Underconsumption Theories: A History and Critical Analysis*, New York: International.

Bonar, James (1924) *Malthus and His Work*, 2nd edn, London: Allen and Unwin.

——(1926) 'Notes on Malthus' First Essay', in First Essay on Population *by Thomas Robert Malthus, 1798*, London: Macmillan for the Royal Economic Society.

Costabile, Lilia (1980) *Malthus: Sviluppo e ristagno della produzione capitalistica*, Turin: Einaudi.

——(1983) 'Natural Prices, Market Prices and Effective Demand in Malthus', *Australian Economic Papers*, 22 (June 1983) 144–70.
Costabile, Lilia, and Rowthorn, B. (1985) 'Malthus's Theory of Wages and Growth', *Economic Journal*, 95 (June) 418–37.
de Marchi, N. B., and Sturges, R. P. (1973) 'Malthus and Ricardo's Inductivist Critics: Four Letters to William Whewell', *Economica*, 40 (November) 379–93.
Eltis, Walter A. (1984) *The Classical Theory of Economic Growth*, London: Macmillan.
Fetter, Frank W. (1953) 'The Authorship of Economic Articles in the *Edinburgh Review*, 1802–47', *Journal of Political Economy*, 61 (June) 232–59.
Gordon, Barry J. (1979) *Economic Doctrine and Tory Liberalism, 1824–1830*, London: Macmillan.
Harrison, John R., Minami, Ryotari, James, Patricia, Peterson, William, Pullen, John and Gray, Edward (1983) *The Malthus Library Catalogue*, New York: Pergamon.
Henderson, John P. (1984) 'Malthus and the *Edinburgh Review*', in *Research in the History of Economic Thought and Methodology*, vol. 2, ed. Warren J. Samuels, Greenwich CT: JAI.
Hollander, Jacob H. (ed.) (1903) *Inquiry into the Nature and Progress of Rent*, by Thomas Robert Malthus, Baltimore: Johns Hopkins University Press.
Hollander, Samuel (1969) 'Malthus and the Post-Napoleonic Depression', *History of Political Economy*, 1 (fall) 306–35.
——(1979) *The Economics of David Ricardo*, London: Heinemann.
James, Patricia D. (1979) *Population Malthus: His Life and Times*, London: Routledge & Kegan Paul.
James, Patricia D. (ed.) (1966) *The Travel Diaries of Thomas Robert Malthus*, Cambridge: Cambridge University Press for the Royal Economic Society.
Johnston, Joseph (1970) *Bishop Berkeley's* Querist *in Historical Perspective*, Dundalk: Dundalgan.
Keynes, John Maynard (1924) 'Essays in Biography', in *The Collected Writings of John Maynard Keynes*, vol. 10, London: Macmillan for the Royal Economic Society, 1972.
McCleary, George F. (1953) *The Malthusian Population Theory*, London: Faber & Faber.
Malthus, Thomas Robert (1803) *An Essay on the Principle of Population; or, A View of Its Past and Present Effects on Human Happiness*, 2nd edn, London: Johnson.
——(1814) *Observations on the Effects of the Corn Laws*, 2nd edn, London: Johnson, reprinted in *The Pamphlets of Thomas Robert Malthus*, New York: Kelley, 1970.
Porta, Pier Luigi (1979) 'Ricardo's Unpublished Last Words on the Subject of Value', *Rivista internazionale di scienze economiche e commerciali*, 26 (January) 7–35.
Pullen, John M. (1981) 'Notes from Malthus: The Inverarity Manuscript', *History of Political Economy*, 13 (winter) 794–811.
——(1987a) 'Recent Literature on Malthus: A Commentary', in *Classical Political Economy*, ed. William O. Thweatt, Dordrecht: Kluwer-Nijhoff.
——(1976) 'T. R. Malthus (1766–1834)', in *The New Palgrave: A Dictionary of Economics*, vol. 3, eds John Eatwell, Murray Milgate and Peter Newman, London: Macmillan.
Rashid, Salim (1982) 'Malthus and the British Critic', *HES Bulletin*, 3 (winter) 11–15.
Ricardo, David (1951–73) *The Works and Correspondence of David Ricardo*, 10 vols, eds Piero Sraffa and M. H. Dobb, Cambridge: Cambridge University Press for the Royal Economic Society.
Robbins, Lionel C. (1967) 'Malthus as an Economist', *Economic Journal*, 77 (June) 256–61.

Semmel, Bernard (1963) 'Malthus and the Reviews', in *Occasional Papers of T. R. Malthus on Ireland, Population, and Political Economy*, New York: Franklin.

Stigler, George J. (1965) 'Sraffa's Ricardo', *American Economic Review*, 43 (September 1953) 586–99. Reprinted in *Essays in the History of Economics*, Chicago: University of Chicago Press.

Thweatt, William O. (1987) 'The Classicals' Citations to the Physiocrats and Turgot', *History of Economic Thought Newsletter*, no. 38 (spring) 29–32.

Wrigley, E. A. and Souden, David (eds) (1986) *The Works of Thomas Robert Malthus*, 8 vols, London: Pickering.

Zinke, George W. (1942) 'Six Letters from Malthus to Pierre Prévost', *Journal of Economic History*, 2 (November) 174–89.

6 Three notes on Ricardo's theory of value and distribution[1]

Since the literature on Ricardo's theory of value and distribution is immense, it would seem almost impossible that anything useful can still be said on the subject. In this context, it may therefore be emphasised that the three notes which form the contents of this paper do not propose a re-interpretation of Ricardo, but rather a few comments on an important aspect of his theory of value and distribution: the assumption of uniform production periods in all sectors of industry. The first two notes are interrelated by the fact that they touch upon this assumption in connection with the development of Ricardo's theory of value and distribution, while the importance of this assumption in the interpretation of the Ricardian system provides the justification for the subject matter of the third note.

The first note is concerned with Stigler's famous interpretation of Ricardo's theory of value as a '93 per cent labour theory of value', which severely criticised the diverse views on the subject by earlier commentators.[2] Although in that paper, Stigler was partly concerned with the changing nature of Ricardo's views on the subject of value,[3] he failed to refer to the text of either the first or the second edition of Ricardo's *Principles* and confined himself to that of the third edition. As a consequence, he missed an important piece of evidence which gives further support to his distinction between Ricardo's 'analytical' and 'empirical' theory of value and which, therefore, reinforces his conclusions.[4] The discussion of this piece of evidence – which concerns the effect of a change in the rate of profit on the relative value of commodities with widely different production periods – forms the subject matter of the first part of this paper.

The second note deals with some implications of the Ricardian 'corn economy' for the interpretation of Ricardo's theory of value and distribution, partly by a comparison of that analytical device with Sraffa's system of commodity production in Part I of his *Production of Commodities by means of Commodities*. In this discussion, it will be shown that Ricardo's view of the interrelationship between value and distrtibution theory was illustrated by him in precisely those cases in which the theory of distribution can be said to be independent of the theory of value. This note has the minor by-product that it may aid in the understanding of some of the early material in Sraffa's book.[5]

The third and final note will put forward some comments on the connection of Ricardo's economics with the 'double-switching debate', since, as Harcourt has argued, this debate 'arose in a context … that goes back at least to Wicksell and probably to Ricardo'.[6] This will entail some further discussion of aspects of Ricardo's theory of value and distribution, and of the assumption of uniform production periods.

A final purpose of this, and of the preceding sections, is to show that there may be some virtue in the study of the economics of the nineteenth century in the light of controversy in that of the twentieth.

I

Stigler's argument in connection with Ricardo's theory of value can be divided into two parts. In the first place, he argued that Ricardo did not have an 'analytical' labour theory of value but a cost of production theory, 'which differed from Smith's theory only in the exclusion of rents from costs'.[7] Second, Stigler put forward the proposition that Ricardo held 'what may be called an *empirical* labor theory of value, that is, a theory that the relative quantities of labor required in production are the dominant determinants of relative values'. This, Stigler warned, is an empirical approximation and not an analytical statement.[8]

Stigler's distinction between the 'analytical' and 'empirical' theories is largely based on the following quote from Ricardo:

> The reader, however, should remark, that this cause of variation of commodities is comparatively slight in its effects. With such a rise of wages as should occasion a fall of one per cent. in profits, goods produced under the circumstances I have supposed, vary in relative value only one per cent.; they fall with so great a fall of profits from 6,050*l.* to 5,995*l.* The greatest effects which could be produced on the relative prices of these goods from a rise of wages, could not exceed 6 or 7 per cent.; for profits could not, probably, under any circumstances, admit of a greater general and permanent depression than to that amount.[9]

It is interesting to note that this passage, or anything which could be called its counterpart, does not appear in either the first or the second edition of Ricardo's *Principles*. It must therefore have been one of the many textual changes he made to the chapter 'On Value' between the three editions of the *Principles*.[10]

When the text of the third edition is compared at this point with that of the earlier editions, it can be seen that prior to the insertion of the passage quoted above – which, incidentally, provides the basis for Stigler's interpretation of a '93 per cent' labour theory of value in Ricardo – there was only a paragraph which summarised the analytical results of the preceding theoretical argument, and which is repeated at a later stage in the third edition.[11] It can therefore be

argued that the '93 per cent' labour theory of value rests on an addition to the text made in the third and definitive edition of Ricardo's *Principles*.

It must further be noted that the arithmetical result referred to by Ricardo in the passage quoted by Stigler occurs also in the earlier editions, but in a different context. In their text, Ricardo presents an arithmetical example in which he works out changes in the relative values of two commodities resulting from variations in the rate of profit in a situation where one of the commodities in question is produced with the aid of a machine only, and the other with the aid of labour only,[12] under various assumptions relating to the extent of the fall in the rate of profit and the durability of the machine.[13] The final set of results from this example is of interest in this context, and may be quoted in full:

> when profits fell from 10 to 3 per cent, the goods, which were produced with equal capitals, would fall
>
> | | |
> |---|---|
> | 68 per cent if the machine would last | 100 years. |
> | 28 per cent if the machine would last | 10 years. |
> | 13 per cent if it would last | 3 years. |
> | and little more than 6 per cent if it would last only | 1 year.[14] |

From these results it would appear that – at least in the first and second editions – Ricardo analytically held not only a '93 per cent' labour theory of value, but also an '87 per cent' theory, a '72 per cent' theory, a '32 per cent' theory, etc.

The quantitative nature of the description depends on the assumptions regarding the durability of the fixed capital and the extent of the variations in the rate of profit which are selected. It can, therefore, be concluded, that in this rather meaningless quantitative sense, Ricardo provided stronger analytical arguments against the labour theory of value in the first and second edition of his *Principles* than he did in the third edition.[15]

Although it can, therefore, easily be shown that Ricardo was fully aware of the difficulties entailed in a labour theory of value, he nevertheless persisted and regarded it as a useful approximation in the analysis of certain economic problems. Throughout the major part of the analysis of the *Principles* there is the implicit assumption that all commodities are produced by 'fixed and circulating capital of the same durability and in the same proportion'.[16] Some further comments on Ricardo's 'empirical' theory of value are therefore in order.

It is clear that Ricardo himself regarded the labour theory of value as a useful approximation which was not too far from the truth, because the effects of variations in the rate of profit on the relative values of commodities would in practice be 'comparatively slight'.[17] This particular opinion stayed with him right up to the time of his death, as is shown by the contents of the draft of his last paper on the subject of absolute and exchangeable value.[18] Since it is now generally agreed that this assumption is in fact a very restrictive one, and that the conclusions flowing from an analysis implying it are rather special results, I

fail to see the usefulness of the present controversy on the 'empirical assumptions' of Ricardo's theory of value.[19]

The preceding discussion does not affect the general validity of Stigler's interpretation of Ricardo's theory of value. Analytically, Ricardo was fully aware of the fact that the labour theory of value was not a general case. Empirically, however, he considered it to be the closest approximation to the truth, and therefore highly useful for his economic analysis.[20]

II

In his first published piece of non-monetary economic analysis, the 'Essay on the Influence of a Low Price of Corn on the Profits of Stock', Ricardo implicitly adopted an analytical device for the purpose of simplifying his distribution theory, in order to illustrate some propositions about the effects of the accumulation of capital on rent and on the rate of profit. After the publication of Sraffa's introduction to Ricardo's *Principles*, this device became known as the Ricardian 'corn economy', through which the rate of profit could be calculated as a ratio between two quantities of corn, thereby making distribution independent of the theory of value.[21]

The use of the device of the 'corn economy' reveals that Ricardo considered the problem of value and distribution to be interrelated, though with the proviso that under certain conditions distribution theory could be made independent of the theory of value. This argument must be further explored, since some of the more important commentators on Ricardo's economics have denied this interrelationship between value and distribution theory in his system.[22]

In the 'Essay on Profits', Ricardo developed his well known proposition that 'it is the profits of the farmer that regulate the profits of all other trades', a statement which puzzled and annoyed his contemporaries. As Sraffa has shown,[23] the proposition was based on the fact that in agriculture the same commodity forms both the capital (as wages fund for the workers), and the product, so that the determination of profits by the difference between total product and capital advanced, and also the calculation of the rate of profit, can be carried out without any question of valuation. The corn economy, therefore, has the quality that there the problem of distribution is independent of that of value, while, at the same time, the physical rate of return found in production could be generalised for the economy as a whole through the forces of competition.[24]

Although Ricardo would have fully realised that 'in no case of production is the produce of exactly the same nature as the capital advanced', so that 'we can never refer to a material rate of produce',[25] the arithmetical table in the 'Essay on Profits', which forms the basis for a substantial part of the argument, is drawn up on this supposition. In this table, Ricardo showed 'the progress of rent and profit under an assumed augmentation of capital', in which all the quantities are quarters of wheat.[26] Furthermore, the table displays the famous distributional laws of Ricardo: that is, the rise in the share of rent in total output when capital

is increased, on the assumption of diminishing returns; and, second, the falling rate of profit – in the table this rate falls from 50 per cent in period one to 11 per cent in period eight – which results in the various assumptions[27] from the accumulation of capital.

The simplicity of this approach, which intuitively appealed to Ricardo, did not continue to satisfy him, if indeed it ever did. It had appeared to be useful as a simplifying assumption in his 'Essay on Profits', but subsequent controversy on the arithmetical table[28] showed that it would not do for a more general treatise on economics. This is shown by his increasing concern over the theory of value, especially in 1816 and 1817, during which the 'Essay on Profits' was converted into the *Principles of Political Economy and Taxation*, under the watchful eye and with the constant prodding of James Mill. For any realistic theory of distribution, and for a more general proof of his conclusions relating to the progress of profits and rents, the problem of value had to be solved by Ricardo.[29]

As Sraffa has persuasively argued, Ricardo's solution to this problem appears to have been based on an extension of the 'corn economy' argument.[30] In the 'corn economy', the rate of profit could be simply expressed as the ratio of 'neat product' to wages fund, both expressed in physical quantities of corn. In a more general model, a similar simplicity could be obtained if both inputs and outputs could be expressed in terms of a single physical measure, which appeared in one form or another among the inputs and outputs. Ricardo found this desired quality in quantities of labour time, to which, under certain assumptions, both inputs and outputs could be reduced. The rate of profit, as Ricardo argued in an important passage in the *Principles*, then depends on the 'proportion of the annual labour of a country … devoted to the support of the labourers'.[31] In this manner, Ricardo was able to generalise his 'corn model' of distribution in the *Principles* by using the simplifying assumption of equal production periods in all sectors of industry which reliance on the labour theory required.[32]

An alternative manner of illustrating this problem for Ricardo can be given by utilising Sraffa's 'tool box' found in his analysis of *Production of Commodities by Means of Commodities*.[33] This can be done by putting Ricardo's 'corn economy' into simple equation form using Sraffa's method of notation. If A_a is the input, and A the output of corn both measured in physical units, and if r is the rate of profit, then the production equation can be written as:

$$A_a(1 + r) = A \text{ where } A_a \leq A$$

so that, r, the rate of profit, is given by the expression,

$$r = \frac{A - A_a}{A_a}$$

from which the fact that the (corn) rate of profit depends on the proportion of total output going to labour (the corn wages fund) is clearly apparent.

In this very simple system, r is of course determined since both A_a and A are given by the technical conditions of production and, since they are both stated in terms of physical quantities of corn, r is a pure number which is independent of valuation. Two difficulties arise on the most simple generalisation of this model. The first, the appearance of an additional commodity, is easily solved as there are now two equations which suffice to determine the rate of profit and the prices, on the assumption that one of the commodities is treated as *numéraire*.[34]

The second problem is much more difficult to solve, and arises when labour is explicitly included among the inputs. In this case, it can easily be shown that the simplicity of the analysis disappears, even within the corn economy. If L_a stands for the quantity of labour required, and w for the wage rate, the equation of production becomes:

$$A_a(1 + r) + L_a w = A \quad \text{where} \quad A_a + L_a w \leq A$$

It now appears that r can only be determined when the wage rate is given, together with the technical conditions of production A_a, L_a and A, since [35]

$$r = \frac{A - A_a - L_a w}{A_a}$$

Two general comments, one relating to Ricardo and one to Sraffa's *Production of Commodities*, may be illustrated by the last equation. In the case of the latter, it illustrates Sraffa's important conclusion, in microscosm as it were, that

> the result of adding the wage rate as one of the variables is that the number of these now exceeds the number of equations by one, and the system can move with one degree of freedom; and if one of the variables is fixed, the others will be fixed too.[36]

In connection with Ricardo, it shows the importance of treating the wage rate as given. In the 'corn model', this was done through assuming that the size of the corn wages fund was part of the given technical conditions of production; in the more general model, the wage rate was treated as a given, exogenously determined by the customary subsistence of the workers.[37]

The preceding argument has shown that Ricardo was able to show the independence of value and distribution in the two models that he considered. The device of the 'corn economy' allowed him to derive certain distributional laws without discussing the problem of value at all. The assumption of a 100 per cent labour theory of value, which Ricardo appears to have regarded as a realistic approximation, allowed him to derive these same distributional laws in his more general model, by ignoring the analytical difficulties which he had found in his

theory of value, and through which value and distribution theory are interrelated. Recent controversies in the theory of capital, to be discussed in the final section, have revealed that these two simplifications both lead to the same special case and not to general results.[38]

III

The reader of the double-switching symposium in the *Quarterly Journal of Economics* for November 1966, who is also familiar with the economics of David Ricardo, cannot but be struck and impressed by the interconnection of these two phases in the history of economic analysis separated in time by a century and a half. This interconnection arises largely from the assumption of uniform production periods in all sectors of industry, which Ricardo found it convenient to make for his general economic analysis in the *Principles*, and aspects of which were discussed in the preceding sections.

The phenomenon of 'double-switching' – which now has a history of nearly half a century[39] – is concerned with the possibility that the same technique of production may be the most profitable of a number of techniques at more than one rate of profit, even though other techniques would be used at rates of profit in between. The associated, but different, phenomenon of 'capital-reversing' can be described as 'the value of capital moving in the *same* direction, when alternative rates of interest are considered, so that a technique with a *lower* degree of mechanisation … is associated with a lower rate of profit'. Both phenomena can be said to be related to the technical question as to whether 'factor price frontiers' or 'wage-profit curves' can intersect more than once, a question which lies near the centre of the debate.[40]

The properties of the 'factor price frontier' have been exhaustively investigated in the literature and therefore need not be discussed in detail.[41] In discussing the assumption of *linear* 'factor price frontiers' in his article on the 'surrogate production function', Samuelson argued the following, in which he clearly described the condition for this assumption:

> Why is the frontier a straight line between these two intercepts? [i.e. the intercepts determined by the maximum wage rate and profit rate possible with the technique under consideration]. The answer is traced to our fixed proportions postulate. (If more (less) alpha [the production good] relative to labour were needed to produce itself than to produce consumption output, the Frontier would be convex (concave) to the origin). With no substitutability possible, there can be no 'deepening of capital', and every stationary state produces exactly the same output related to size of total labour employed. Hence, when labour's relative share of net product falls from all to one-half, its real wage must exactly halve; and the percentage rate of profit (or 'own interest'), will rise to half its maximum rate. Applying the same reasoning to all other fractional division of shares, we end up with a perfectly straight line.[42]

Samuelson's condition for non-linear factor price frontiers, which was quoted above, can be rephrased in the following manner. Factor price frontiers will not be 'perfectly straight' lines when the 'capital-labour ratios' of the producer-good and the consumer-good sectors are different in the systems for which they are constructed. The linear frontiers, on which his defence of the production function and 'traditional' distribution theory largely depends, relies, therefore, on the special case when 'capital-labour ratios' in all sectors of industry are equal. In other words, Samuelson's defence depends on the assumption or 'approximation' which Ricardo chose to make in his elaboration of distribution theory in the *Principles*.[43] This is, however, not the only link between the double-switching debate and Ricardo.

Once double-switching is admitted as the general case, and it has been admitted,[44] many of the conclusions of orthodox capital and distribution theory disappear as general propositions. Following Harcourt, these conclusions may be described as follows:

1 an association between lower rates of profit and higher values of capital per man employed;
2 an association between lower rates of profit and higher capital-output ratios;
3 an association between lower rates of profit and (through investment in more 'mechanised' or 'roundabout methods of production') higher sustainable steady states of consumption per head (up to a maximum);
4 that, in competitive conditions, the distribution of income between profit-earners and wage-earners can be explained by a knowledge of marginal products and factor supplies.[45]

It can easily be shown that these four propositions also have some connection with Ricardo's economic analysis. The first two, and aspects of the third, were discussed and elucidated in his economic writings, while the fourth proposition is more indirectly related to his work in that the early proponents of marginal productivity theories of distribution were claiming that they were generalising the Ricardian theory of rent.[46]

Furthermore, the association between 'lower rates of profit' on the one hand and 'higher capital-labour ratios' and more 'mechanised' production on the other is evident in Ricardo's works. As some commentators have pointed out,[47] Ricardo argued that higher wages – and therefore lower profits – encouraged the introduction of more capital-intensive methods of production, so that he can be said to have supported the first, and aspects of the third proposition of orthodox theory which were quoted above.

Similarly, the proposition that the rate of profit and the 'capital-output ratio' vary inversely was illustrated by Ricardo as early as 1815 in the table in the 'Essay on Profits'. As the rate of profit falls from 50 per cent in period one, to 25 per cent in period five, and to 11 per cent in period eight, the incremental capital-output ratio as calculated from the data in the table rises from 0.67 to 0.80 to 0.90 respectively.[48]

In connection with Ricardo's propositions relating the rate of profit to 'capital-output ratios', 'capital-labour ratios' and the degree of mechanisation, it has been shown[49] that the rigorous proof of these propositions depends on the crucial assumption that there are equal periods of production in all industries. As was illustrated above, the 'double-switching' debate has confirmed the necessity of the assumption of a pure labour theory of value for some of the conclusions of Ricardo's general economic model in the *Principles*.

Ricardo's views on the assumption required to establish 'double-switching' as an impossibility (though in a completely different context), have been examined in the first section of this paper. There it was argued that he regarded it as too convenient an assumption to be discarded for the general analysis of the *Principles*, and that he also seemed to regard it as the approximation which was closest to reality. It is, however, rather doubtful that he was completely aware of the tremendous importance of this assumption in connection with the general validity of his distributional 'laws', since he never explicitly referred to it in connection with the elaboration of his general theory. It was argued, however, in the second section of this paper, that he did appreciate the necessity of a theory of value for a theory of distribution.

The one case in Ricardo's *Principles*, apart from sections in the chapter 'On Value', where this assumption explicitly is not adhered to, is the famous chapter 'On Machinery', which made its appearance in the third edition. In that chapter, the whole argument depends on the 'substitution of machinery for human labour',[50] that is, on variations in the period of production. This means that the conclusions of the general model – based on the assumption of a 100 per cent labour theory of value – no longer strictly apply, including therein the general conclusions which relate employment to the supply of capital. When this is realised, Chapter 31 is no longer 'controversial' when compared with the other parts of the *Principles*, and that chapter appears as 'an honest acknowledgement by Ricardo of the limitations of his theory'.[51]

With these remarks on the importance to Ricardo's system of the assumption of a uniform production period in all sectors of industry, these three notes on his value and distribution theory may be concluded. In the first of these notes it was shown that in spite of the fact that Ricardo admitted a wide range of possible variations in the period of production for analytical purposes in connection with his theory of value, he continued to use a 100 per cent labour theory of value as a useful and meaningful approximation. This approximation, like the earlier assumption of the 'corn economy', allowed him to develop a distribution theory which was not 'essentially connected' with the problem of value, although he seemed to have realised that value and distribution were interdependent if these assumptions do not hold. This was argued in the second of the notes. Finally, the 'crucial' assumption for the Ricardian system, and the nature of some of the economic propositions derived therefrom, link his analysis with the 'context' of the double-switching debate, as this section has illustrated. This section and the preceding ones perhaps also show the relevance of studying the economics of the 1820s in order to understand the controversy of the 1960s.

Notes

1 Paper delivered at the Second Conference of Australian Economists, Sydney, August 1971. My revision of the paper was considerably aided by some comments by Mr Sraffa and Dr Pasinetti, while that of the third part especially was helped by study of Chapter 4 of Professor Harcourt's forthcoming book *Some Cambridge Controversies in the Theory of Capital* (Cambridge: Cambridge University Press, 1972), which he kindly made available to me in draft form. This assistance does not absolve me of responsibility for the errors that remain in this paper.

2 G. J. Stigler, 'Ricardo and the 93 per cent Labour Theory of Value', in *Essays in the History of Economics*, Chicago: University of Chicago Press, 1965, 326–42.

3 *Ibid*.: 327–8. See especially his criticism of Cannan, Hollander and St Clair.

4 See *ibid*.: 333, 340–2. Some recent discussion on the empirical content of Ricardo's value theory will also be commented on. After this note was completed, I came across an article which comments on the same piece of evidence. See G. W. Wilson and J. L. Pate, 'Ricardo's 93 per cent Labor Theory of Value', *Journal of Political Economy*, 76, 1968, 128–36.

5 Cf. Joan Robinson, 'Prelude to a Critique of Economic Theory', *Oxford Economic Papers*, 13, 1961, reprinted in her *Collected Economic Papers*, vol. III, Oxford: Blackwell, 1975, esp. 7–8. The concept of the 'corn economy' is discussed by Sraffa in his introduction to the *Works and Correspondence of David Ricardo*, vol. I, Cambridge: Cambridge University Press, 1953, xxi–xxxii. This title is henceforth referred to in these notes as *Works*.

6 G. C. Harcourt, 'The Significance of the Double-switching Debate', paper read to Section 24 of ANZAAS, Adelaide, August 1969, 4. This statement is repeated in Chapter 4 of *Some Cambridge Controversies in the Theory of Capital*, 125.

7 G. J. Stigler, 'Ricardo and the 93 per cent Labour Theory of Value', in *Essays in the History of Economics*, Chicago: University of Chicago Press, 1965, 332–3. Cf. Ricardo, *Works*, I, 47n.

8 G. J. Stigler, 'Ricardo and the 93 per cent Labour Theory of Value', in *Essays in the History of Economics*, Chicago: University of Chicago Press, 1965, 333. It is interesting to note that this distinction was not made in Stigler's earlier interpretation of Ricardo's theory of value. See G. J. Stigler, 'The Ricardian Theory of Value and Distribution', *Journal of Political Economy*, 60, 1952, reprinted in his *Essays in the History of Economics*, 188–9.

9 Ricardo, *Works*, I, 36. This same passage is cited in full by Stigler, 'The Ricardian Theory of Value and Distribution', *Journal of Political Economy*, 60, 1952, 332; while at n18 on that page he argued that this quotation from Ricardo provided the basis for the title of his paper.

10 For a discussion of these changes, see Sraffa, introduction to Ricardo, *Works*, I, liii–lv, xxx–xlix. As noted earlier, Stigler did not comment on the fact that this passage occurs only in the third edition. Sraffa's table of concordance between the first and third editions by paragraphs for the latter part of the chapter 'On Value', easily reveals this fact and facilitates greatly the task of appreciating the extent of Ricardo's changes in this chapter.

11 In all three editions, these passages occur at the end of the material on the modification of the labour of value 'by the employment of machinery and other fixed and durable capital' (§IV in the third edition). See Ricardo, *Works*, I, 58, paragraph beginning 'Thus we see'; I, 58 n1, paragraph beginning 'It appears then'; and I, 37, paragraph beginning 'It appears then', for the full text of these conclusions in the first, second, and third edition respectively.

12 This is a good example of the 'strong cases' of which Ricardo so frequently made use in his economic analysis. Cf. Joan Robinson, *On Re-reading Marx*, Cambridge: Students Bookshop Ltd, 1953, 7.

13 Ricardo, *Works*, I, 59–60. Ricardo also assumed that the values of the total capital employed in both the capital and the labour-intensive technique were equal, these capital values presumably being measured in terms of the 'invariable standard' so that they would not be affected by the variation in the rate of profit.
14 Ricardo, *Works*, I, 60. These arithmetical results do not have a precise counterpart in the third edition, but the reasons for their deletion from there are not clear. The significance of this particular example was first brought to my notice by Mr F. M. Dunn.
15 Ricardo himself denied that there were any *substantive* changes in this theory of value between the second and third editions. See his letter to Malthus (4 September 1820) in *Works*, VIII, 229; to Mill (4 October 1820) in *ibid*.: 283–4; and to McCulloch (25 January 1821) in *ibid*.: 342–3.
16 L. L. Pasinetti, 'A Mathematical Formulation of the Ricardian System', *Review of Economic Studies*, 27, 1960, 9; cf. Ricardo, *Works*, I, 36–7.
17 Ricardo, *Works*, I, 45. Cf. I, 36–7, 42.
18 Ricardo, *Works*, IV, 371–3.
19 I.e. H. Barkai, 'The Empirical Assumptions of Ricardo's 93 per cent Labour Theory of Value', *Economica*, 34, 1967, 418–23; A. A. Konüs, 'The "Empirical" Assumptions of Ricardo's 93 Per Cent Labour Theory of Value: A Comment', *Economica*, 37, 1970, 185–6; H. Barkai, 'The Labour Theory of Value as an operational Proposition', *Economica*, 37, 1970, 187–90. Cf. also G. W. Wilson and J. L. Pate, 'Ricardo's 93 Per Cent Labor Theory of Value', *Journal of Political Economy*, 76, 1968, 134–5.
20 The need for this empirical 'approximation' in connection with the basic conclusions of Ricardo's economics is clearly shown by L. L. Pasinetti, 'A Mathematical Formulation of the Ricardian System', *Review of Economic Studies*, 27, 1960, esp. 91. That there is irony in the history of even the 'dismal' science is shown by the fact that although this assumption was attacked in some quarters in connection with the labour theory of value, it was used in defence of the production function. See P. A. Samuelson, 'A Modern Treatment for the Ricardian Economy', *Quarterly Journal of Economics*, 73, 1959, esp. 221; and his 'Parable and Realism in Capital Theory: The Surrogate Production Function', *Review of Economic Studies*, 39, 1962, esp. 198, 203.
21 See Ricardo, *Works*, I, xxx–xxxiii.
22 See for example Edwin Cannan, *A History of the Theories of Production and Distribution from 1776 to 1848*, London: Staples Press, 1953, ch. VIII; F. H. Knight, 'The Ricardian Theory of Production and Distribution', reprinted in *On the History and Method of Economics*, Chicago: University of Chicago Press, 1963, esp. 40–1; J. A. Schumpeter, *History of Economic Analysis*, London: Allen & Unwin, 1959, 568, 592–4. In support of this, Knight quotes Ricardo's letter to McCulloch (13 July 1820) where Ricardo argued that the 'great questions of Rent, Wages and Profits … are not essentially connected with the doctrine of value' (*Works*, VIII, 194).
23 See Sraffa, introduction to *Works*, I, xxx–xxxii, esp. xxxi.
24 See *Works*, IV, e.g. 12. This interpretation is used, for example, by N. Kaldor, 'Alternative Theories of Distribution', *Review of Economic Studies*, 23, 1955–6, esp. 85–6; J. R. Hicks, *Capital and Growth*, Oxford: Clarendon Press, 1965, 42–6, esp. 46. Furthermore, if corn is considered to be the only basic good in the system, which enters the production of all commodities, the Ricardian 'corn economy' becomes more than just a 'one commodity model'. On this see Nassau Senior, *An Outline of the Science of Political Economy*, London: Allen & Unwin, 1951, 188–99; and L. L. Pasinetti, 'A Mathematical Formulation of the Ricardian System', *Review of Economic Studies*, 27, 1960, 85 n2 and the reference to von Bortkiewicz's article there cited. This distinction between basics and non-basics plays an important part in Sraffa's argument in *The Production of Commodities by Means of Commodities*, Cambridge: Cambridge University Press, 1960, esp. 7–8, 47, 49–52, 54–5.

25 Malthus to Ricardo (5 August 1814) in *Works*, VI, 117. Although the quote is from a letter written by Malthus, the opinion contained therein appears to have been accepted by Ricardo.
26 Ricardo, *Works*, IV, 17.
27 Apart from the assumptions of diminishing returns and no technical progress, the rigorous proof of this conclusion requires the assumption either of the 'corn economy' or that of equal production periods in all sectors of industry. On this latter point, see L. L. Pasinetti, 'Switches of Technique and the "Rate of Return" in Capital Theory', *Economic Journal*, 79, 1969, especially 516ff. See also section III below.
28 I.e. the table in *Works*, IV, 17. This table was admired as highly 'ingenious' by Trower in a letter to Ricardo (10 March 1815) in *Works*, VI, 184, but it was attacked as highly unrealistic by Malthus. See his letters to Ricardo of 12 March 1815 and 15 March 1815 in *Works*, VI, 185, 191–2 respectively. Cf. also his letter to Horner (14 March 1815), where he wrote:

> The fault of Mr. Ricardo's table which is curious, is that the advances of the farmer instead of being calculated in corn, should be calculated either in the actual materials of which the capital consists, or in money which is the best representative of a variety of commodities. The view I have taken of the subject would greatly alter his conclusions.
>
> (included in Ricardo, *Works*, VI, 187–8)

29 This is fully documented by Sraffa in his introductions to Ricardo's *Works*. See vol. I, especially xix–xxi, and vol. IV, 8, including n2. Cf. also Donald Winch (ed.) *James Mill: Selected Economic Writings*, Edinburgh: Oliver and Boyd, 1966, 179–88. The greatest difficulties for Ricardo in connection with the theory of value appear to have occurred in September-October 1816, as is evidenced in Ricardo to Malthus (1 October 1816), in *Works*, VII, 71–2, and Ricardo to Mill (14 October 1816) in *ibid.*: esp. 83–4.
30 Sraffa, introduction to *Works*, I, xxxii–xxxiii. This and the preceding paragraph have been heavily influenced by Sraffa's introduction, written in collaboration with M. H. Dobb.
31 Ricardo, *Works*, I, 48–9. The quoted passage appears at the top of 49.
32 That the theory of distribution in the *Principles* is an extension of the corn model, is rigorously demonstrated by L. L. Pasinetti, 'A Mathematical Formulation of the Ricardian System', *Review of Economic Studies*, 27, 1960, where it is shown that the corn model can easily be abstracted from Ricardo's more general model. See page 84 n2. It is also interesting to note that Pasinetti's analysis of Ricardo's general system is based on the assumption of a 100 per cent labour theory of value – that is, on the 'crucial assumption' that 'all sectors in the economy use … the same period of production' (*ibid.*: 92) – which is in fact essential for many of his conclusions. Furthermore, on that assumption, value and distribution remain independent (*ibid.*: 84–5) or, as Ricardo wrote to McCulloch, 'not essentially connected' in the letter quoted in note 22 above. It should also be noted that the degree of generality in Ricardo's system in the *Principles* is more apparent than real insofar as some of his conclusions are concerned. See the remarks made in note 27 above.
33 As argued in the introduction to this paper, thereby introducing the possibility of aiding the understanding of part of Sraffa's argument. See the reference to Joan Robinson's review of Sraffa's book in note 5 above; and cf. Sraffa, *The Production of Commodities by Means of Commodities*, Cambridge: Cambridge University Press, 1960, Appendix D, 93.
34 If *A* and *B* are the two commodities, p_a the price of *A* and *B*'s price is taken as unity (as the *numéraire*), then

$$(A_a p_a + B_a)(1 + r) = A p_a$$

$$(A_b p_a + B_b)(1 + r) = B$$

where $A_a + A_b \leq A$ and $B_a + B_b \leq B$.

This gives two equations to determine the two unknowns, p_a and r, on the assumption that the technical conditions of production are given, and that r is uniform for the economy as a whole through the forces of competition.

35 This expression is written on Sraffa's assumption that the workers advance their own wages. If, as in Ricardo, it is assumed that wages are advanced by the capitalists, this expression becomes:

$$r = \frac{A - A_a - L_a w}{A_a + L_a w}$$

36 Sraffa, *The Production of Commodities by Means of Commodities*, Cambridge: Cambridge University Press, 1960, 11. These comments should not be taken to imply that Sraffa's analysis can be simplified to Ricardo's corn economy. The latter can only illustrate one aspect of the beginning of the former's analysis.

37 Cf. A. Bhaduri, 'On the Significance of recent Controversies on Capital Theory: A Marxian View', *Economic Journal*, 79, 1969, 538n.

38 See the remarks and reference made in note 27 above.

39 For a brief account of the nature and consequences of 'double-switching' which also gives references to the literature on the subject, see P. Garegnani, 'Switching of Techniques', *Quarterly Journal of Economics*, 80, 1966, esp. §V and 565 n7; and G. C. Harcourt, 'Some Cambridge Controversies in the Theory of Capital', *Journal of Economic Literature*, 7, 1969, esp. 386–95. It should be noted that Sraffa's *Production of Commodities*, although published in 1960, was commenced during the 1920s, by the end of which decade 'the central propositions had taken shape' (P. Sraffa, *The Production of Commodities by Means of Commodities*, Cambridge: Cambridge University Press, 1960, vi). These central propositions presumably included the material on 'switch in methods of production'.

40 The argument in this and the following paragraphs is indebted to Professor Harcourt's surveys of the debate, especially that in Chapter 4 of *Some Cambridge Controversies in the Theory of Capital*, from which the definitions of 'double-switching' and 'capital-reversing' were taken. It should be noted that the latter – which is the opposite of the Austro-Wicksellian relationship between the rate of interest and the degree of mechanisation – is known in the literature as the 'Ruth Cohen curiosum' (see Joan Robinson, *The Accumulation of Capital*, London: Macmillan, 1956, 109–10).

41 See e.g. Joan Robinson and K. A. Naqvi, 'The Badly Behaved Production Function', *Quarterly Journal of Economics*, 81, 1967, esp. 585–91; P. Garegnani, 'Heterogenous Capital, the Production Function and the Theory of Distribution', *Review of Economic Studies*, 37, 1970, esp. Part I.

42 P. A. Samuelson, 'Parable and Realism in Capital Theory: the Surrogate Production Function', *Review of Economic Studies*, 39, 1962, 198 and n1. (The material inserted in round brackets after the words 'fixed proportions postulate' is the footnote quoted from the article.)

43 In this context, the following passage is worth quoting:

> If Q [the output in the surrogate production function] is not a single product or a fixed-composition dose of goods, relative price ratios will generally change as

> the profit and real wage rates change. This is the fatal flaw in a simple labor theory of value, as Ricardo's critics kept reminding him and as he himself realised. One would have thought he would cut his losses, but he persisted in thinking his theory could be defended as some kind of useful approximation. I cut my losses and offer the Surrogate Function only as a dramatic model to show that mere *physical* heterogeneity need not lead to qualitatively new behavior patterns.
>
> (*ibid*.: 203)

44 See P. A. Samuelson, 'A Summing Up', *Quarterly Journal of Economics*, 80, 1966, esp. 568, 582–3; and the references to Garegnani's two articles given in notes 39 and 41 above.

45 G. C. Harcourt, 'Some Cambridge Controversies in the Theory of Capital', *Journal of Economic Literature*, 7, 1969, 387.

46 See, for example P. H. Wicksteed, *An Essay on the Co-ordination of the Laws of Distribution*, London: LSE reprint, 1932, esp. 3–5, 13ff; this connection between Ricardo and the double-switching debate was suggested to me through a reading of the opening paragraphs of P. Garegnani, 'Heterogenous Capital, the Production Function and the Theory of Distribution', *Review of Economic Studies*, 37, 1970, 407.

47 See Ricardo, *Works*, I, 41 and note. See also K. Wicksell, *Value, Capital and Rent*, London: Allen & Unwin, 1954, 37–8; and V. Edelberg, 'The Ricardian Theory of profits', *Economica*, 13, 1933, esp. 60ff, which gives a detailed demonstration of the 'Austrian' nature of Ricardo's theory of profits.

48 See *Works*, IV, 17. For the eight periods in the table, Ricardo assumes the following values for r (rate of profit) and C/Y (the incremental capital-output ratio):

r	0.50	0.43	0.36	0.30	0.25	0.20	0.15	0.11
C/Y	0.67	0.70	0.73	0.76	0.80	0.83	0.87	0.90

49 See L. L. Pasinetti, 'A Mathematical Formulation of the Ricardian System', *Review of Economic Studies*, 27, 1960, esp. 91.

50 Ricardo, *Works*, I, 388.

51 The argument in this paragraph is derived from Pasinetti's interpretation of Ricardo (L. L. Pasinetti, 'A Mathematical Formulation of the Ricardian System', *Review of Economic Studies*, 27, 1960, 92). Once substitution between labour and capital is allowed in a particular industry, as would be the case on the introduction of machinery, the 'period of production' in that industry would vary and the 100 per cent labour theory of value would no longer apply.

7 Thomas De Quincey
'Faithful disciple of Ricardo'?

A central part of current debate in the history of economic thought concerns the 'decline in Ricardo's authority in matters relating to the fundamental theorem on distribution and its derivation in terms of the invariable yardstick *even in the work of the "Ricardians"* – including McCulloch and De Quincey' (Hollander 1979: 661). Underlying this debate[1] is the notion of a dual development in economic thought in the nineteenth century, which contradicts the notion of a single continuous development in the theory of value, and is also of relevance to views on the longevity of Ricardo's basic theoretical propositions. The supporters of the dual development approach (especially Dobb 1973) see one development departing from Smith's supply–demand analysis of market prices leading up to the neoclassical general equilibrium tradition; the other development is the prices of production approach from Ricardo and Marx to the more developed forms of Dmitriev, von Bortkiewicz and especially Sraffa. Historians supporting this dual approach have eliminated J. S. Mill and J. R. McCulloch from the Ricardo school, and as Hollander (1977a: 39) put it, 'a similar revisionist interpretation has recently been put forward regarding Thomas De Quincey'.[2]

This revisionist interpretation flies in the face of the general view of De Quincey as a staunch, logic-chopping Ricardian (see McCulloch 1845: 20; Marx 1972: 123–4; Schumpeter 1959: 476–7; but cf. Blaug 1958, who, despite the quotation from De Quincey's *Confessions of an English Opium Eater* on the frontispiece of his book (1958: v) seems to support the 'revisionist' interpretation (see especially 169). Subsequently, most modern textbooks on the history of economic thought which mention De Quincey have placed him firmly in the Ricardian camp, together with Ricardo's other faithful disciples, J. R. McCulloch and James Mill.[3]

In a subsequently published paper, Hollander (1977b: esp. 242–4) re-affirmed his belief in De Quincey's 'continued allegiance to Ricardo' and this time supported it with argument and quotation from his *Logic of Political Economy*. Although Hollander admits De Quincey's dissatisfaction with Ricardo's treatment 'of market prices diverging from long-run costs', he argues that nevertheless De Quincey continued to speak warmly of Ricardo's treatment of value, not only in Chapter 1 of the *Principles*, but also in the chapter on 'Value

and riches' (Hollander 1977b: 242–3). Hollander also claims that De Quincey's distribution theory remained 'strictly Ricardian', including therein the relationship between value and distribution, basing this conclusion largely on De Quincey's famous remark that profits '*are the leavings of wages*' (De Quincey 1844: 257) and on his analysis of the effects of wages on prices (De Quincey 1844: 247–8, esp. n1). Hollander (1977b: 244) therefore concludes: 'There can surely be no question of De Quincey's continued adherence to strict Ricardianism'.

In this short paper, I show that contrary to Hollander's view, my revisionist interpretation of De Quincey is correct, that is, that the staunch defender of Ricardo's theory of value in 1824 changed to a position on this subject in 1844 which can be described as anti-Ricardian. In addition, some explanations are offered for the misrepresentation of De Quincey's position, particularly by Marx and Schumpeter, and for the omission of De Quincey's *volte-face* in Dobb's essentially correct account of post-Ricardian economics (Dobb 1973: chs 4, 5).

I

The basic facts about De Quincey's interest in economics, and in Ricardo's economics in particular, are set out in Masson's introduction to Volume IX of his edition of De Quincey's *Works* (1897: 1–6). It was this interest which stimulated De Quincey's two major works on economics: *Dialogues of Three Templars on Political Economy*, which appeared in three successive numbers of the *London Magazine* for March, April and May 1824; and twenty years later, *The Logic of Political Economy*, which was first published in 1844, though largely based on three papers which had appeared in *Blackwood's Magazine* for September, October and December 1842.[4]

The first of these is a masterly exposition of Ricardo's theory of value, which De Quincey regards as the foundation of Ricardo's theory and the principle from which Ricardo's most basic theorems can be deduced.[5] The exposition covers all the major points: '*the ground of the value of all things lies in the quantity* (but mark well that word "quantity") *of labour which produces them*' (55). This proposition leads to the 'Ricardian law' which states that 'A and B are to each other in value as the *quantity* of labour is which produces A to the quantity which produces B' (56), that is, the labour *proportionality* rule.

This law has three exceptions arising from differences in the time period of production of different commodities (58–60). A corollary of the law is that a change in wages cannot affect relative values (in the absence of these exceptions), that the validity of this conclusion from Ricardo's theory of value was completely misunderstood by his contemporaries (65ff), and that it provides the clue to Ricardo's notion of an invariable standard (93–4). Historically, De Quincey regards Ricardo's contribution to the theory of value as unique (it bears no resemblance to Smith or other writers) with the exception of Sir William Petty, who had expressed the law of value 'with a Ricardian accuracy' (65).

Two further arguments from the *Dialogues* reveal the accuracy of De Quincey's analysis. The first is the clear distinction between market and natural rates of wages, which is drawn in the context of the discussion of the relationship between changes in wages and changes in value. De Quincey correctly emphasises the irrelevance of changes in market wages induced by short-term fluctuations in supply and demand to Ricardo's basic propositions (61).[6] For the purpose of Ricardo's basic analysis, 'no cause can really or permanently raise wages but a rise in the price of those articles on which wages are spent' (61).

The second important insight of De Quincey's interpretation of Ricardo's theory of value follows from the theorem on the effect of wage changes on value. This is the recognition that Ricardo's theory frees him from the circular argument that wages are largely determined by the value of wage goods, whose value in turn is largely determined by wages. This charge cannot apply to Ricardo because in his theory, it is 'not the *value* but the *quantity* of labour (which) determines the value of its products' (98).

De Quincey's exposition in this early work did not deal with the problem of distribution; this issue was tackled twenty years later in his *Logic of Political Economy*. In this book he departed substantially from Ricardo's position on the theory of value, and from that which he had expounded himself in the *Dialogues*.[7]

The chapter on value in the *Logic*, in sharp contrast to the *Dialogues*, ascribes the determination of exchange value to two elements: '1st Intrinsic utility: 2nd Difficulty of attainment', both of which are equally '*indispensable*' to exchange value (133, my italics). De Quincey's reasoning in this chapter anticipates Marshall's famous scissors analogy in supply and demand theory, and has little resemblance to the principles of value theory enunciated by Ricardo in Chapter 1 of the *Principles*. It must be pointed out that De Quincey concedes that in ninety-nine out of a hundred cases, 'utility is inoperative, but it cannot be supposed to be absent' (137), and in the famous music box example (137–40),[8] as well as in a wide variety of other examples (162–9) – all of which Ricardo would have regarded as irrelevant to the problem of value as he understood it[9] – De Quincey demonstrated the operation of the principle of supply and demand in the determination of value.

This shift in opinion on the subject of value is further illustrated by De Quincey's criticism of the organisation of Ricardo's *Principles* (200, but cf. his *Dialogues*, 52–4, in which no such imputations are made on the framework of Ricardo's book) and by the sharp comments made by De Quincey on the confusions in Ricardo's theory of market value (200–7, and cf. Bowley 1967: 86–7). One reason for this shift in the treatment of value is undoubtedly De Quincey's appreciation (see 152–5) of Bailey (1825), whose exposition of the causes of value seems to have exerted considerable influence on De Quincey's elaboration of this subject in the *Logic*.[10]

The more fundamental reason for De Quincey's change of mind on Ricardo's usefulness was probably political. Again, in sharp contrast to the *Dialogues*, the chapters on distribution in the *Logic* contain a significant number of complaints

against the political misuse of Ricardo's doctrines by anarchists, chartists, and so on (249–52, 257).[11] This also presumably provides the motive for the number of qualifications introduced by De Quincey to Ricardo's basic theorems, despite his agreement with the *logic* of the basic distribution model, where profits are regulated by the profits in agriculture (268, 280), and are seen as the 'leavings of wages' (257, cf. Dobb 1973: 70, 79). For example, De Quincey queries the falling rate of profit as an historical tendency (293) because of the effects of rising productivity in agriculture which counteract the effects of increasing relative scarcity of the best land. Furthermore, in the theory of wages, the qualifications of Ricardo's theory are so numerous (esp. 222–3)[12] that the theory is turned into a mere supply and demand theory, thereby destroying the assumption of a *given* subsistence wage required for Ricardo's formal distribution model.

More examples of the differences between the complete acceptance of Ricardo in the *Dialogues* and the critical qualification of Ricardian theory in the *Logic* can be given.[13] The argument has been sufficiently illustrated, however, particularly in connection with the theory of value and with the aspects of the theory of distribution. Evidence has also been provided that this changed attitude to Ricardo was probably inspired by the fears expressed by the increasingly more conservative De Quincey about the misuse made of Ricardo's theories by radicals.[14]

II

A few words of explanation must now be offered on the reasons why De Quincey's position has been so frequently distorted in the history of economic thought. As indicated earlier, among such noted and diverse authorities as McCulloch, Marx, Schumpeter and Dobb, only Blaug appears to have regarded the inclusion of De Quincey as a 'faithful disciple' of Ricardo with any degree of scepticism (see Blaug 1958: 169). One possible explanation is that the *Logic* was by and large ignored by commentators, who invariably concentrated on the much more spirited writing in the *Dialogues*.

Marx's commentary on De Quincey's work in *Theories of Surplus Value* is typical. In the chapter on the 'Disintegration of the Ricardian school', De Quincey's *Dialogues* is briefly discussed and the *Logic* is dismissed as being much 'weaker'. Marx's implicit conclusion is favourable to De Quincey as a careful expositor of Ricardo's work on value, whose 'dialectical depth is more affected than real', but who nevertheless pointedly sets forth 'the inadequacies of the Ricardian view' (Marx 1972: 123–4).[15]

Schumpeter's discussion is much more explicit on De Quincey's Ricardian affiliations. He includes De Quincey in the Ricardian school, though not in its 'core', which apart from Ricardo only consisted of James Mill and McCulloch (Schumpeter 1959: 470; see also 595, where De Quincey is mentioned as part of the 'inner-circle Ricardians', and 746, where Mill, McCulloch and De Quincey are described as 'the only unconditional adherents and militant supporters of

Ricardo's teaching who gained sufficient reputation for their names to survive'. Nevertheless, De Quincey's contributions to economics are described (477) as 'peripheral' and 'sterile').

Schumpeter's specific remarks on the *Logic* are worth quoting in full: 'The book survives, I think, only through J. S. Mill's generous quotations from it. I cannot see in it anything original' (477, n13). This evaluation of De Quincey's *Logic* should be compared with Schumpeter's discussion of J. S. Mill's theory of value, in which reference is made to De Quincey:

> *Leaning heavily on De Quincey's exposition* … Mill accepted Utility and Difficulty of Attainment as conditions of exchange value. But the energy with which he insisted on the relative character of the latter completely *annihilated* Ricardo's Real Value … Mill's own main contribution was to develop the supply-and-demand analysis so fully that, as Marshall himself was to indicate, there remained not so very much to do beyond removing loose ends and adding rigor in order to arrive at something not far distant from Marshallian analysis.
>
> (603, my italics)

This largely unqualified praise of J. S. Mill's supply and demand theory (the first, with the exception of Cournot, to contain its essentials according to Schumpeter – *ibid.*) is explicitly linked with De Quincey's analysis in the *Logic*.[16] The earlier description of that work as lacking in originality and as peripheral and sterile can therefore only indicate that Schumpeter had little acquaintance with its contents apart from the lengthy quotation by J. S. Mill in his *Principles*.

Dobb's few references to De Quincey, with one exception,[17] relate to the passage in the *Logic* where De Quincey describes profits as the 'leavings of wages' (Dobb 1973: 70, 79, 106). De Quincey's value theory is not discussed, despite the fact that his change of mind on this subject fits so well with the thesis Dobb advanced in Chapters 4 and 5 of his book. In connection with J. S. Mill on value (Dobb 1973: 131), he cites Schumpeter's view, which we have just quoted, but Dobb attributes this to Bailey's influence on Mill rather than to that of De Quincey, to whom Schumpeter *explicitly* referred. Dobb also leaves the impression that De Quincey was a solid Ricardian, a view which closely follows the interpretation of Marx.

The reason for the neglect and easy dismissal of De Quincey's *Logic* (as compared with the *Dialogues*) is probably the unflattering notice given of that work in McCulloch's *Literature of Political Economy*, that important bibliographical reference work for early historians of economic thought. When compared with the notice in the same work given to the *Dialogues*, it explains why people have turned to the latter rather than to the former. The *Dialogues* are described by McCulloch (1845: 33) as 'unequalled, for brevity, pungency and force' and can be 'said to have exhausted the subject' of the Ricardian theory of value. The *Logic* is described as 'tiresome' and 'repulsive' because it 'perpetually' obtruded 'logical

forms and technicalities on the reader's attention' (20). Both works are described as dealing with the theory of value only. McCulloch's opinion of De Quincey's books may therefore have caused the erroneous interpretations of De Quincey as a staunch Ricardian by steering potential readers away from the *Logic*.

III

De Quincey's 'Ricardian status' must clearly be qualified as one changing from strong support for Ricardo's theory of value to one where he seriously doubted its usefulness for economic theory. De Quincey therefore joined the ranks of those who for a variety of reasons – not least of which were political ones – were dissenters from Ricardo's theory of value, and who filled the resulting vacuum by increasing emphasis on the role of supply and demand in value determination. That the *Logic* (1844) in contrast to the *Dialogues* (1824) emphasises the influence of supply and demand in this context has been fully demonstrated, and that this implied an abandonment of Ricardo's prices of production approach is also clear. This shift further emphasises the *uniqueness* of Ricardo's treatment of value in connection with distribution in the first half of the nineteenth century, and provides further justification for that dual approach in the history of economic thought to the analysis of value determination.

Notes

1 The main antagonists in this debate are Samuel Hollander (1977a; 1977b; 1979), who denies the notion of a dual development in this matter and who rejects the proposition that McCulloch, De Quincey, and John Stuart Mill departed from Ricardo's 'fundamental theorem'; major supporters of the dual development thesis are the late Maurice Dobb (esp. 1973) and Bharadwaj (1978a; 1978b; 1978c). For a simple exposition of this dual stream in the development of economics, see Groenewegen (1975: 141–3).

2 This 'revisionist interpretation' was put in my review of Dobb (1973), in which I argued that Dobb's interpretation of the decline of Ricardo's economics in the post-1830 period could have been strengthened if he had analysed De Quincey's change of mind on the theory of value between the *Dialogues of Three Templars* (1824) and the *Logic of Political Economy* (1844) (see Groenewegen 1974: 192–3).

3 Very few of the general texts on the history of economic thought mention De Quincey, but at least two of those that do classify him as an orthodox Ricardian, in the company of J. R. McCulloch and James Mill. See for example Ekelund and Hébert (1975: 93) and Haney (1924: 278). The 'revisionist' interpretation of McCulloch is that of O'Brien (1970), but he does not appear to support the dual development mentioned in the opening paragraph of this paper. Although O'Brien (1975: esp. 9) clearly defines De Quincey, together with James Mill, as the only Ricardians, there are important departures by De Quincey from Ricardo noted by him. See esp. 43, 96–7, 136, 229.

4 All page references in the text to De Quincey's work refer to Volume IX of Masson (1897).

5 This lends no support to Hollander's contention to the interdependence of distribution and pricing within the Ricardian model. On the meaning of this interdependence, see Groenewegen 1972: 57–60 (above, Chapter 6).

6 De Quincey also hints at the distinction between basics and non-basics (61), a distinction which had earlier been made in principle by Ricardo (1953: vol. 1, e.g.

243–4). De Quincey's emphasis on the distinction between natural and market wage rates and the irrelevance of the former to Ricardo's basic model, provides cogent *ex-ante* criticism of Hollander's interpretation of Ricardo on this subject. See particularly his 'Ricardo, Marx and General Equilibrium', Part A, where the notion of a 'variable wage' in Ricardo is largely deduced from Ricardo's writings dealing with explanations of short-term fluctuations in wages, that is, market wage rates. The same position is argued in more detail in Hollander (1979), especially Chapter 5.

7 De Quincey states in the preface that 'I continue to hold my original ideas on the various aspects of this embarrassing doctrine [of the theory of value]' (119), but in contrast to the *Dialogues*, the *Logic* is filled with criticism of Ricardo on this and other subjects (see esp. 132, 133, 177, 179, 183–4, 199, 222, 228–9, 280).

8 This example is famous because it was quoted at length by J. S. Mill in his *Principles*, Book III, Chapter 2, 'Of demand and supply' (Mill 1965: 462–4). It is interesting to note that Mill had favourably reviewed De Quincey's book in the *Westminster Review* (Mill 1845). For discussion of this relationship between De Quincey and J. S. Mill, see Bharadwaj (1978c: 255–6), Hollander (1979: 668–9) and I. F. Pearce (1977: 218).

9 See Ricardo (1953: 11–12), where the analysis of value is confined to freely reproducible commodities 'on the production of which competition operated without constraint'. The cases of 'rare statues and pictures, scarce books and coins, vines of a peculiar quality', that is, those cases exhaustively analysed by De Quincey in his chapter on value, are irrelevant to the major purpose of the basic analysis of Ricardo's *Principles*, that is, the investigation of the laws of distribution (*ibid.*: 5).

10 That is, Bailey (1825: ch. XI) which should be compared with *Logic*, Chapter I, sections 3–5 (146–86). Bailey's influence is further illustrated in De Quincey's greater awareness of the importance of 'monopoly' (e.g. 276–7) and the supply and demand determination of wages (esp. 269). For an opposite view, see Rauner (1961: 132–5, and cf. De Quincey 1844: 205).

11 The most striking remark is as follows: 'Ricardo is here found in a painful *collusion* with the most hateful of anarchists' (252, my italics).

12 See also 268–9, which emphasise wage differentials, partly explained by the 'interest on the capital which he (the worker) has been obliged to sink in his education'.

13 The chapter on value in the *Logic* contains no criticisms of the labour commanded theory to any extent, or of the circularity of the adding-up theories of value; the treatment of the relationship between value theory and the theory of rent is also markedly different. See 98–9, and 226–7, the last passages in the *Logic* being highly critical of Ricardo.

14 De Quincey's 'Toryism' is clearly expounded in his political writings. It must also not be forgotten that the *Logic* was written at the time of greatest influence of chartism and of a great deal of social unrest. Cf. also Blaug 1958: 169, 223.

15 My first inference from Marx's discussion of De Quincey in *Theories of Surplus Value* was that he could not possibly have read the *Logic*. This is not true, however, as is clear from a footnote in *Capital* (Marx 1867: 395) which cites an obscure passage from the *Logic* dealing with the substitution of female for male labour.

16 It should be emphasised that De Quincey's influence on John Stuart Mill was on the supply and demand theory as a whole and was not confined to utility only. De Quincey is quoted by Mill (1848: 456–7, 462–5, 468–70) in the first two chapters of Book III of the *Principles*, the second of which is called 'Of demand and supply, in their relation to value'. As Bharadwaj (1978c: 256) explained in this context, 'De Quincey's and J. S. Mill's notion and its measure were fundamental to Marshall's demand side of price determination'. De Quincey's causes of value in the *Logic* must therefore be seen as a supply and demand approach, in contrast to the analysis of the *Dialogues* where labour embodied is regarded as the determinant.

17 This exception is the reference to Bailey's criticism of De Quincey's theory of value (Dobb 1973: 100).

References

Bailey, S. (1825) *A Critical Dissertation on the Nature, Measures and Causes of Value*, London: LSE Reprints no. 7, 1931.

Bharadwaj, K. (1978a) 'Maurice Dobb's Critique of Theories of Value and Distribution', *Cambridge Journal of Economics*, 2(2) 153–74.

——(1978b) *Classical Political Economy and the Rise to Dominance of Supply and Demand Theories*, Calcutta: Orient Longmans.

——(1978c) 'The Subversion of Classical Analysis: Alfred Marshall's Early Writing on Value,' *Cambridge Journal of Economics*, 2(3) 253–72.

Blaug, M. (1958) *Ricardian Economics*, New Haven: Yale University Press.

Bowley, M. (1967) *Nassau Senior and Classical Economics*, London: Allen & Unwin.

De Quincey, T. (1897) *The Collected Writings*, ed. D. Masson, vol. IX, *Political Economy and Politics*, London: A. & C. Black.

Dobb, M. H. (1973) *Theories of Value and Distribution Since Adam Smith*, Cambridge: Cambridge University Press.

Ekelund, R. B. and Hébert, R. F. (1975) *A History of Economic Theory and Method*, New York: Macmillan.

Groenewegen, P. D. (1972) 'Three Notes on Ricardo's Theory of Value and Distribution', *Australian Economic Papers*, 11 (June) [above, Chapter 6].

——(1974) 'Review of Dobb, *Theories of Value and Distribution since Adam Smith*', *Economic Journal*, 84(133) 192–3.

——(1975) 'Review of Black, Coats and Goodwin (eds) *The Marginal Revolution*', *Economic Record*, 51(133) 141–3.

Haney, L. H. (1924) *A History of Economic Thought*, New York: Macmillan.

Hollander, S. (1977a) 'Smith and Ricardo: Aspects of the Nineteenth Century Legacy', *American Economic Review*, 67(1) 37–41.

——(1977b) 'The Reception of Ricardian Economics', *Oxford Economic papers*, 29 (July).

——(1979) *The Economics of David Ricardo*, London: Heinemann.

——(n.d.) 'Ricardo, Marx and General Equilibrium' (mimeograph).

McCulloch, J. R. (1845) *The Literature of Political Economy*, London: LSE Reprints no. 5, 1938.

Marx, K. H. (1867) *Capital*, vol. I, Moscow: Foreign Languages Publishing House, 1959.

——(1972) *Theories of Surplus Value*, part III, London: Lawrence & Wishart.

Mill, J. S. (1845) 'Review of De Quincey's *Logic of Political Economy*', *Westminster Review*, June.

——(1848) 'Principles of Political Economy', in *Collected Works of J. S. Mill*, vols II and III, Toronto: University of Toronto Press, 1965.

O'Brien, D. P. (1970) *J. R. McCulloch: A Study in Classical Economics*, London: Allen & Unwin.

——(1975) *The Classical Economists*, Oxford: Clarendon Press.

Pearce, I. F. (1977) 'Demand Theory, Consumer Surplus and Sovereignty', in S. Weintraub (ed.) *Modern Economic Thought*, ch. 12, Oxford.

Rauner, R. M. (1961) *Samuel Bailey and the Classical Theory of Value*, London: Bell.

Ricardo, David (1953) *Principles of Political Economy and Taxation*, in *Works and Correspondence of David Ricardo*, vol. I, ed. P. Sraffa, Cambridge: Cambridge University Press.

Schumpeter, J. A. (1959) *History of Economic Analysis*, New York: Oxford University Press.

8 Marx's conception of classical political economy

An evaluation[1]

It is well known that Marx introduced the concept of 'classical political economy' into the language of the science, and that subsequently he only spasmodically developed it in other writings, particularly in *Capital*. It is likewise generally appreciated that Keynes intentionally perpetrated a 'solecism' on Marx's definition when he defined classical economics for his own purposes, and that both before and since Keynes, the terminology has been interpreted in a variety of ways.[2] Discussion of Sraffa's work as a 'rehabilitation of classical political economy' has brought interest in the precise meaning of the term back on to the agenda. This paper makes a contribution to this kind of project by examining in more detail Marx's position on classical political economy, which in many respects has not received the attention it deserves. This applies particularly to his remark on the importance of distinguishing the French and British version of classical political economy. A substantial part of the paper is therefore devoted to a comparative evaluation of Marx's comments on Petty and Boisguillebert, Ricardo and Sismondi, with particular emphasis on the earlier pair and on the French side of the comparison.

The argument is divided into three sections. The first looks at Marx's general characterisation of classical political economy and examines his reasons for dividing it off from earlier monetary and mercantile economics and the later 'vulgar economy'. The second examines the rationale for Marx's separation of classical political economy on national lines between distinct British and French variants. The final section draws a number of conclusions, including suggestions for further research work on the nature and conception of classical political economy.

Marx's general conception of classical political economy

Significantly, because it associates the terminology with fetishistic tendencies, Marx's discussion of the meaning of classical political economy invariably occurs in the context of the concept of commodities. In the first of these discussions,[3] no precise meaning of classical political economy is given, except that its decisive outcome is described as 'an analysis of the aspects of the commodity into two forms of labour – use value is reduced to concrete labour or purposive

productive activity, exchange value to labour time or homogeneous social labour'. In addition, its existence is chronologically defined 'as beginning with William Petty in Britain and Boisguillebert in France, and ending with Ricardo in Britain and Sismondi in France'.[4] In the context of the development of political economy, Marx therefore drew attention to the French and British versions of the phenomenon which earlier, in the *Grundrisse*,[5] were described as in 'antithesis', a view further developed in the *Contribution to the Critique*.[6] In the analogous chapter of *Capital*, emphasis on the national distinction is dropped, and there Marx defined classical political economy, 'once and for all', as:

> That economy, which since the time of W. Petty has investigated the real relations of production in bourgeois society, in contradistinction to vulgar economy, which deals with appearances only; ruminates without ceasing on the materials long since provided by scientific economy, and there seeks plausible explanations of the most obtrusive phenomena, for bourgeois daily use, but for the rest, confines itself to systematising in a pedantic way, and proclaiming for everlasting truths, the trite ideas held by the self-complacent bourgeoisie with regard to their own world, to them the best of all possible worlds.[7]

Apart from dropping any explicit references to French economists (earlier in the long footnote from which this quotation is taken, only Smith and Ricardo are mentioned as the 'best representatives' of the school), another difference between Marx's 1867 treatment of classical political economy and that of 1859 may be noted. In 1859, Marx tended to concentrate on contrasting the beginnings of classical political economy with the views of the monetary and mercantile schools, while in *Capital* it is the contrast with subsequent vulgar political economy that is emphasised.

Further systematic discussion of Marx's conception of classical political economy requires a number of things. First, a discussion of the ramifications of the general meaning Marx seems to have attached to the concept. Second, some examination of the vulgar economy from which he differentiated it, and likewise of the monetary and mercantile systems from which he saw classical political economy as originating. These aspects are discussed in the remainder of this section; the third aspect, explaining why he distinguished a British and French political economy,[8] is discussed in the subsequent section. However, it should be clearly grasped that these issues are very much interrelated, and all arose in the context of the completion of Marx's theoretical critique of political economy at the end of the 1850s. Furthermore, few of these matters were fully elaborated in Marx's writings, and frequently have to be inferred from his texts in order to get a clear understanding of his meaning of classical political economy.

What, then, are the essential features of Marx's conception of classical political economy? First of all, Marx ascribed to its representatives the quality of attempting to explain the inner workings of the system rather than its outward

forms. Thus classical political economy investigated the real relations of production and not its outward appearances, the phenomena selected by the vulgar economists for analysis with apologetic intent and by writers from the earlier monetary and mercantile systems.[9] Marx saw classical political economy therefore from a methodological perspective, because the feature which distinguishes the classical political economists from both their predecessors of the monetary and mercantile system and their vulgar economist successors is the approach they take to the subject. According to Marx, nowhere are these differences in approach more clearly illustrated than in the analysis of the commodity. This, after all, is a concept 'abounding in metaphysical subtleties and theological niceties', though its 'fetishistic' manifestations are also visible in the vulgar economists' treatment of revenue and its sources.[10]

In both the *Critique* and the first volume of *Capital*, Marx's analysis of commodities emphasises explanations of exchange in terms of production to demonstrate that exchange relations are not relations between things but the reflection of relations between producers, that is, human labours. The market appearances of exchange relations, Marx argued, can only be understood if the underlying social relations of production are clearly grasped. Classical political economy, and in particular David Ricardo, is praised for understanding the point that exchange can only be explained through an analysis of production; the earlier economists of the monetary system did not get so far, and vulgar economy regressed into mystification and once again analysed only the appearances of market relations in exchange and in the trinity formula of revenue and its sources. However, Marx[11] criticised classical political economy, even its greatest representatives, Smith and Ricardo, for failing to examine exchange relationships as social production relationships *in their entirety*, that is, they failed to grasp the 'the specific historical character' of their contemporary social environment which coloured the specific form the relationship takes. In short, the degree of penetration beyond the visible form of economic relationships or the degree of abstraction encountered in the analysis provides the basic distinguishing feature between the various schools of political economy identified by Marx.[12]

The process of abstraction as a methodological dimension which Marx associated with classical political economy needs some further elaboration. In the *Grundrisse*[13] such abstraction is identified with the development of general categories such as labour, division of labour, wage labour, capital, money, wealth and landed property. Emphasis on such categories and their use in theoretical formulations further distinguishes the classical economists from the representatives of the monetary and mercantile schools. The 'monetary economists' tended to emphasise the 'appearances' of monetary values as against exchange values rooted in production; accumulation of wealth through circulation and trade rather than through agriculture or manufacturing; and they saw profit arising through sales (profit upon alienation) rather than within the process of production. The formulation of general categories is of course essential for the development of political arithmetic, the reason Marx saw this as 'the first form

in which political economy is treated as a separate science' and it explains, as elucidated in the second part of this paper, why he selected Petty and Boisguillebert as the respective founders of British and French classical political economy. It may also be noted that the *Grundrisse*'s methodological introduction depicts Smith and Ricardo as developing the abstractions of classical political economy with regard to labour and production from the work of previous writers such as the Physiocrats and early pioneers who transcended the former monetary and mercantile systems.[14] Reverting to the starting points identified by Marx, the lifespans both of Petty (1623–87) and Boisguillebert (1645–1715) and more significantly, the publication of their first important economic work, in 1662 and 1695 respectively, indicate that for Marx the evolution of classical political economy was, in its early stages, a lengthy process.

The first discussion of what became the concept of vulgar economy also occurs in the *Grundrisse* in the fragment on Bastiat and Carey, probably written by Marx during July 1857. This discusses a number of post-Ricardian developments in political economy as either 'eclectic syncretistic compendia' or 'deeper elaboration of certain topics' or 'tendentious exaggerations of the classical tendencies'. As a major exception to these types of post-Ricardian developments, Marx noted the work of Bastiat and Carey, which explicitly sought 'to attack the antagonisms' between social classes found by the classical economists in production relations by replacing them with the alternative vision of universal harmony between the classes. In this text, it may be noted, terminology has not yet been finalised for these phenomena in the development of political economy. Classical and modern political economy are treated as if they were synonyms, and the term 'vulgar economy' has not yet come into use.[15]

In fact the concept of vulgar economy did not make its first appearance until Marx prepared the manuscripts of the theories of surplus value. At this stage of the development of his economics education, he needed to tackle explicitly the problem of surplus value as seen by earlier economic writers in its more specific forms of profit and rent. The term 'vulgar economists' is then used to distinguish certain economic writers from the classical economists because they analyse the form and sources of revenue in their most fetishistic form, with land depicted as the source of rent, capital as the source of profit and labour as the source of wages, that is, totally in terms of surface appearances and without any attempt as in the classical writers 'to grasp the inner connections of the phenomena'.[16] This material on revenue and its sources was first written in October/November 1862 and some of it was used for volume III of *Capital*[17] as Marx had originally intended at the end of the 1860s. It may be noted that elsewhere in the *Theories of Surplus Value*, references to vulgar economists by Marx himself are few and far between. Examples are the reference to 'pedants, prigs and vulgarisers' in the context of Roscher and to McCulloch's 'vulgarisation of Ricardo' which makes him 'lower than Say'.[18] In short, the notion of vulgar economics was apparently first rigorously worked out by Marx in the context of his historical analysis of surplus value and revenue and its sources, and thus initially applied to

economists who accepted the trinity formula of distribution, incidentally including writers on occasion who were, strictly speaking, contemporaries of Ricardo.

In the section on Bastiat and Carey in the *Grundrisse*, Marx saw vulgar economy as having its own gradations and developments, a topic to which he returned briefly in the famous 'Afterword' to the second German edition of *Capital*, dated January 1873. In this, John Stuart Mill is classed, as earlier in the *Grundrisse*, as the best representative of that 'shallow syncretism' seeking to 'reconcile the irreconcilable interests of labour and capital' from which in turn sprang that group of professors of political economy who, proud 'of the professorial dignity of their science', attempt to achieve a similar objective. Other professors, Marx argued, prefer marching under 'the banner of Bastiat, the most superficial and therefore the most adequate representative of the apologetic vulgar economy'.[19] More importantly for the purpose of this paper, the Afterword sheds light on the demise of classical political economy, there precisely dated by Marx at 1830, a dating over which subsequently vigorous debates have been fought.[20]

At first sight, 1830 seems to have little to do with the respective lifetimes of the final representatives of the classical school, David Ricardo (1772–1823) and Sismondi (1773–1841). It clearly relates far more strongly to the completion of their major theoretical systems during the second half of the second decade of the nineteenth century. A decade of intensive debate followed in the 1820s, during which Ricardo's theory of value and distribution was both clarified and vulgarised,[21] and at the end of which political economy abandoned all serious attempts to analyse the real relations of production in bourgeois society. Marx's political explanation in terms of a quickening pace of the class struggle in France and England after 1830 is well known, but in the context of this examination of his concept of classical political economy, aspects of his reasoning require further elaboration.

For Marx, scientific political economy had to include analysis of the class antagonisms inherent in the social relations of production. This implied that when actual class struggle was 'latent and manifests itself only in isolated and sporadic phenomena', political economy could remain a science because then its essential features of analysing class antagonisms, revealing essentials of the wage system and the nature of surplus value, was not too damaging as a potential 'weapon of attack on bourgeois economy'. This in itself placed a limit on the internal development of classical political economy, visible in its failure to analyse surplus value as such (instead of its special forms of rent, interest and profit) and its inability to apply the dual nature of value (use value and exchange value) to the commodity, 'labour', by failing to discover the concept of 'labour power' as the relevant commodity form applicable to capitalist society. Although an unintentional failure, such a shortcoming was inherent in classical political economy because it was incapable of seeing the value/surplus value relations it was analysing in its specific historical context. Vulgar political economy, on the other hand, sometimes ignored these essential features of classical theory by its

use of supply and demand as substitute for value analysis and its explanations of profits and rent in terms of the direct productivity of capital and land. Other successors to classical political economy sought to eliminate class antagonisms altogether, either by postulating the existence of universal social harmony (Bastiat) or by conscious attempts at reconciling the differing interests of social classes through methods like profit sharing in the manner of John Stuart Mill. These considerations for the Afterword to the second German edition of *Capital* reinforce both the classificatory nature of Marx's concept and its methodological intent, by focussing on value and distribution as the scientific core of classical political economy. It also draws attention to what Marx saw as the basic weakness of classical political economy: its essentially ahistorical nature which prevented it from fully appreciating the real social relations of capitalist society as a specific historical social form.

A distinct British and French classical political economy

The distinction between the British and French representatives of classical political economy at its start and its close is an aspect in clarifying Marx's notion which it is less easy to summarise. This partly arises from the asymmetrical treatment accorded to the four writers involved. Ricardo, it is well known, received voluminous comment from Marx. Marx likewise devoted considerable space to Petty's pioneering contributions to classical political economy. In sharp contrast, the French side is only sparsely discussed, so that much of the difference Marx saw between these two national schools of classical political economy has to be inferred from the text. This requires a detailed examination of Marx's observations, first on Petty and Boisguillebert, then on Sismondi relative to Ricardo, before some inferences based on this examination of their different characteristics can be drawn.

The better to appreciate Marx's views on the economics of Petty and Boisguillebert, some background on the times and the extent of his studies of their works is provided. Marx appears to have studied Boisguillebert before he read Petty, probably in Paris during 1844 or 1845,[22] using the text of his work in Daire's edition of financier's writings of the eighteenth century which was published in 1843. There is evidence that Marx's reading included Boisguillebert's more important economic work, as can be seen from the considerable extracts of *Détail de la France* (1695), *Traité de la Nature, Culture, Commerce et Intérêts des Grains* and *Dissertation de la Natures des Richesses, de l'Argent et des Tributs* both of which written in 1704, which Marx made in his so-called Paris notebooks.[23] The first reference to Boisguillebert in Marx's writings appeared as early as 1847.[24] Petty's work was apparently first studied during Marx's famous 1845 visit to Manchester. Early references to Petty's writings in Marx's work tended to be general. During the 1850s Marx appears to have studied Petty's writings in more detail. In his *Contribution to the Critique*, Marx cited Petty's *Treatise of Taxes and Contributions* of 1662, his *Political Arithmetick* (published in 1690, but written well before) and the *Essay on the Multiplication*

of Mankind of 1686.[25] At that time, Marx complained that Petty's writings had become 'bibliographical curiosities' in need of a collected edition, but he was in fact able to study most of them in the Reading Room of the British Museum.[26] Notebook XXII of *Theories of Surplus Value* shows that careful study of Petty's writings had been completed by May 1863, and its list of authorities and that of the first volume of *Capital* only add *Quantalumcunque Concerning Money* and *The Political Anatomy of Ireland* to the work of Petty with which Marx was familiar.

The nature of Marx's citations of Petty shows why he saw him as the founder of classical political economy. Marx praised Petty's treatment of the division of labour as 'being on a grander scale than Smith's', because it not only included manufacturing examples from watchmaking, but also examined the scope for division of labour in large cities and even in nations. Marx also noted Petty's pioneering quantitative work as an important scientific contribution. Although he also claimed that Petty did not clearly grasp 'the special social form in which labour constitutes the source of exchange value' – a charge Marx in fact applied to all the classical economists – he recognised as major contributions Petty's identification of labour as the source of material value and concrete labour as the source of use value.[27]

In the subsequent *Theories of Surplus Value*, Petty is given an important historical section to himself. In it, Marx identified Petty's contributions to the concept of productive and unproductive labour, his distinction between 'natural price', 'political price' and 'true price current' and his determination of comparative natural price, or value, by quantities of labour, his correct identification of the value of labour in terms of subsistence, and his attempts to analyse surplus value as surplus labour within the two forms of rent and usury, of which the first is seen by Petty as the dominant surplus form.[28] In addition, Marx argued that Petty's treatment of differential rent was superior to that of Smith, and credits him with a better understanding of the relationship between improvements, rent and the interests of landlords as a class.[29] Marx's treatment of Petty concludes with some fragmented, but nevertheless highly significant comments. These praise Petty's views of total production, his discussion of the 'par', the rate of interest and the problem of raising the value of money (on the last of which Marx compares him favourably with Locke and North) and on the association between capital and the productive powers of labour.[30] The passage from Petty's *Treatise of Taxes and Contributions* which Marx cites to support his interpretation that Petty had a total view of production, is one of the passages from Petty's work that demonstrates his place as a leading pioneer in formulating the surplus approach to economics. In this passage, Petty identified surplus labour as that portion of the labour force not required to produce subsistence, an abstraction of importance when it is recalled that Petty's work also embodied notions of a subsistence wage, surplus value and surplus product. This considerably heightens his significance as a founder of classical political economy.[31]

Marx's references to Petty in *Capital* reiterate some of these points,[32] but the more substantive remarks now appear in the chapters on money. Petty's

Quantalumcunque Concerning Money is praised for its awareness of the foolishness of coin debasement, a sign for Marx of Petty's liberation from the views of the monetary school of political economy. Because Petty argued that a nation may have too much as well as too little money, Marx further notes that Petty's concern with real phenomena does not cause him to forget the prime necessity of money for the operations of modern society. Marx was particularly impressed by Petty's analysis of velocity of circulation in terms of income payment periods (for example, weekly wages and quarterly rents) and his use of these data to estimate the sum of money required in a particular country.[33] These references to Petty's monetary views take on special significance in the light of his earlier comments in the *Contribution to the Critique*[34] to the effect that differentiation between the British and French representatives of the originators of political economy partly rested on their differing attitudes to money.

Most of Marx's references to Boisguillebert were made at the end of the 1850s. His two solitary references in *Capital* are concerned with hoarding, while the single reference in *Theories of Surplus Value* mentions him only as a precursor of the Physiocrats.[35] In his earlier writings,[36] Marx correctly identified Boisguillebert's antagonism to money as a key feature in his analysis of the causes of French distress in the last decades of the seventeenth century. The potential disruption to consumption from hoarding is a major reason for such antagonism, as Marx also correctly perceived. In addition, Boisguillebert viewed hoarding as an unnatural practice because the natural function of money and of the precious metals is to act as a medium of exchange in circulating the products which alone constitute real wealth. Although Marx was aware that for Boisguillebert proportionality between prices and cost of production was a requirement for economic balance, he did not depict this part of the argument as an essential feature of Boisguillebert's explanation of crises of underconsumption. Marx presented this underconsumptionist thesis largely in his published work as a sign of Boisguillebert's antagonism to money and the 'black art of finance', and therefore seems not to have fully appreciated its wider significance, something perhaps explained by the fact that Marx apparently never re-read Boisguillebert's work, in sharp contrast to his careful re-reading of Petty's.[37]

When compared with Petty, Boisguillebert shares a healthy liberation from the monetary concerns of the precious school of political economy, but for quite different reasons, based as they were on underconsumptionist fears which are absent from the Englishman's work. In further contrast to Petty, Boisguillebert stressed the material aspects of wealth in terms of their use value, as indicated by his identification of wealth with the necessaries, conveniences and everything which gives pleasure to the senses, as Marx cites in evidence for this opinion. Likewise, although Boisguillebert saw labour time as the measure of value of commodities, its relationship with exchange value is confused and confounded with the market appearances of supply and demand, in contrast to Petty's performance on the subject of value. On the personal level, Marx ranks Boisguillebert above Petty. 'But whereas Petty was just a frivolous, grasping,

unprincipled adventurer, Boisguilbert although he was one of the intendants of Louis XIV, stood up for the interests of the oppressed classes with both great intellectual force and courage'.[38] Marx in fact suggested that comparative studies of the characters of Petty and Boisguillebert, Sismondi and Ricardo, would help to explain 'the origins of these national contrasts that exist between British and French political economy'. At the personal level, similar comparisons can be made between Smith and the Physiocrats (particularly Turgot) and between Ricardo and Sismondi, on the ground that the British representatives of classical political economy were basically concerned with 'ruthless' analysis of the realities of the economic situation, while the French also attempted to do something about it, no matter what the cost in personal preferment. Thus 'Ricardo's political economy ruthlessly draws its final conclusions … while Sismondi ends by expressing doubts in political economy itself'.[39]

Marx also saw Petty and Boisguillebert as authors who understood the social division of labour, the origin of surplus labour within production and the productiveness of labour and its expropriation through the state's taxation and forms of unproductive consumption. Finally, though this is not explicitly stated by Marx, both Petty and Boisguillebert in their respective countries pioneered abstraction and conceptualisation of the basic economic phenomena. Marx's historical analysis demonstrates this explicitly in the case of Petty; it is impossible to document such a case for Boisguillebert, of whom Marx left no equivalent evaluation. However, as Spengler has recently suggested, just as in the case of Petty, Boisguillebert's economic writings are filled with concepts in embryo, 'varying considerably in degree of abstractness', a matter with which a serious and sophisticated student of economic literature like Marx could not have failed to have been impressed.[40]

The omega of Marx's perception of classical political economy may now be examined. It is both unnecessary and impractical to examine Marx's views on Ricardo in any detail, apart from recalling Marx's praise of Ricardo as the 'economist of production *par excellence*' and therefore the zenith of classical political economy. Discussion is confined to Marx's spasmodic, but nevertheless highly informative treatment of Sismondi, the French representative of classical political economy's decline. From the citations in *Capital*, it is clear that Marx had seriously studied all of Sismondi's more important economic work, while the excerpts in his 1845 Brussels notebooks reveal how early he had commenced this study. Although Marx clearly had great admiration for aspects of Sismondi's economics, particularly his analysis of the circuits of capital, Marx also criticised him in this context for his failure to penetrate the material conditions of the conversion of revenue into capital.[41] Furthermore, in the preparation of *Theories of Surplus Value*, Marx wished to omit detailed discussion of Sismondi's work, because 'a critique of his views belongs to the part of my work dealing with the real movement of capital (competition and credit) which I can only tackle after I finish this book'.[42] At this stage Marx also explicitly recognised the need for further work on Sismondi, something he seems to have done, judging from the wide-ranging Sismondi citations in *Capital*.[43]

Paradoxically, it is Marx's sporadic commentary on Sismondi in the pages of *Theories of Surplus Value* which provides elucidation of some of the grounds he may have envisaged to justify the fundamental antagonism between French and British political economy he had postulated in the earlier *Contribution to the Critique*. These grounds can be classified into three, and they obviously need to refer not only to the case of Sismondi and Ricardo, but also that of Boisguillebert and Petty. First, in their work, the French authors in the classical tradition showed far greater proclivities towards utopian reformism than the hard-headed realism of the British school of classical political economy. Second, French political economy, particularly with respect to its representatives at the extremities, showed far greater historical awareness as compared with its British counterparts, Petty and Ricardo. Finally, French political economy contained a far greater underconsumptionist (over-production) tradition, especially in the writings of Boisguillebert and Sismondi, totally absent and in fact substantially rejected by the major representatives of the British school.

Marx commented directly on Sismondi's utopian tendencies on a number of occasions. As early as the *Communist Manifesto*, these had been discussed under the heading 'petty-bourgeois socialism', with Sismondi identified as its leader. Although during this discussion, Marx and Engels praised Sismondi and his school for

> dissecting … the conditions of modern production [by proving] … the disastrous effects of machinery and division of labour, the concentration of capital and land in a few hands, overproduction and crises. … [I]n its positive aims … [this school] aspires either to restoring the old means of production and of exchange … or cramping the modern means of production and of exchange … it is both reactionary and Utopian[44]

Marx nowhere explicitly attributed similar utopian sentiments to Boisguillebert, but the Frenchman was clearly engaged in such speculations. Furthermore, Marx at one stage compared Boisguillebert's hostility to money with Sismondi's denunciation of industrial capital, implying an intention to attribute a utopian desire to abandon the money economy to Boisguillebert's work.[45] As noted earlier, such views contrast sharply with the hard-headed nature of British political economy.

The historical merits of French over British political economy are likewise rarely mentioned directly by Marx. However, Marx on at least one occasion[46] implied that history and historical knowledge are an important difference, as can be inferred from the following remarks. Just before comparing him directly with Sismondi, Marx drew attention to Ricardo's lack of historical sense by stating that 'apart from bourgeois society', the only social system with which Ricardo was acquainted seems to have been the 'parallelograms of Mr Owen', while Ricardo's tendency to historical anachronisms is illustrated by the fact he allowed 'primitive fisherman and hunter to calculate the value of their implements in accordance with the annuity tables used on the London stock

exchange in 1817'. By contrast, Sismondi[47] discussed a variety of historical modes of territorial exploitation, from patriarchal society to feudal and to more modern times, a discussion which must have impressed Marx. Likewise, in *Theories of Surplus Value*,[48] Marx listed Sismondi with Richard Jones as the only economists who perceived 'the *socially determined* form' of capital. If Marx's suggestion to compare the lives of these British and French economists is followed,[49] then this aspect of their 'antagonism' is even more strikingly revealed. Boisguillebert started his career with historical writings, including a volume on Mary, Queen of Scots; Sismondi, it is well known, was not only the noted historian of the Italian republics, he devoted the last two decades of his life to a massive twenty-nine volume French history. Neither Petty nor Ricardo attempted any substantial historical work. However, what is probably more important in the context is the manner in which historical illustration enriched the contents of the French authors' works. Boisguillebert's *Factum de la France* included considerable historical detail on the fiscal systems of the Romans, Turks, Moguls and Dutch, and that in use in France from the reigns of Francis I to Louis XIV.[50] Sismondi's *Nouveaux Principes* is largely constructed on historical principles, and its introduction laments the practice of 'Adam Smith's modern disciples', who have lost sight of the human point of view in their abstractions and have turned the science into a purely speculative one.[51] This quotation from Sismondi draws attention to a difficulty in attributing this particular national characteristic over the whole of the classical period, since Smith and Sir James Steuart are strong counter-examples to an ahistorical British school of classical political economy. By contrast, their French contemporary, Quesnay, was as abstract and speculative as Ricardo and just as ahistorical, unlike *his* compatriot, Turgot. However, insofar as Marx drew attention to these aspects of national antagonisms, he appears to have confined the argument to the extremities of classical political economy.

The strongest national difference between French and British classical political economy is their attitude to underconsumption and the possibility of deficient demand. This contrast between Sismondi's and Ricardo's political economy is very strongly drawn by Marx,[52] a depiction in which Sismondi is particularly praised for seeing the contradiction between the productive powers of capital and the workers' powers to consume as a specific feature of capitalist development, just as Marx also praised him for clearly seeing the major contradictions between labour and capital, for which reason Marx described Sismondi's work as 'epoch making'.[53] Likewise, Boisguillebert's analysis of underconsumption sets him apart from Petty's work, which seems to portray the same optimistic faith in production for production's sake later exhibited by Ricardo. However, the national nature of the conflict on underconsumption and the possibility of general gluts can be exaggerated, though such difficulties do not arise for Marx in this context when, for example, the work of Malthus and Say is taken into account.[54]

Whether these are all the observations that can be made about Marx's perception of a national division in classical political economy is difficult to say,

because the evidence on the subject is so fragmentary. However, his perception of the existence of such a national division in itself is an interesting one and sustainable on the facts. The distinction is, however, a complex one as well, particularly in the context of the differences in attitudes to history and its importance, which Marx appeared to have attributed to French and British political economy. Likewise, the causes for those differences, although clearly associated with the actual state of the French and British economies and the contemporary nature of the structure of their 'civil societies', are not easy to identify precisely and hence to generalise about.

Some general conclusions

A number of observations can be made on the basis of this lengthy discussion of Marx's conception of classical political economy. His praise for the work of classical political economy derived undoubtedly from his appreciation of the classical economists' methodological contribution in fostering abstract analysis of basic economic categories, and their partial grasp of the notion of the commodity and its exchange by examining this in terms of production and social relations. Marx's chronology of political economy is largely explained in this way. In his perception of classical political economy, Marx also diagnosed national differences and antagonisms between its two major schools, in France and Britain. This made him emphasise dual starting and closing points for classical political economy associated with the writings of Petty and Boisguillebert, Ricardo and Sismondi respectively. Full elaboration and explanation of the antagonism between the British and French schools of classical political economy is made difficult by the fact that Marx left little but fragmented comments on the work of Boisguillebert and Sismondi, whereas Petty and Ricardo received especially detailed treatment in the manuscripts of *Theories of Surplus Value*. In the case of Boisguillebert, this lack of detailed treatment may be explained by the fact that Marx does not seem to have systematically studied his work after 1845. This type of explanation does not suffice for Sismondi, whose work Marx wanted to, and eventually did, explore more fully. The second section of this paper has nevertheless managed to identify some of the more basic of the antagonisms, relating them to different attitudes to 'utopianism' and reform, the relevance of history as well as historical awareness, and the importance of underconsumption to the understanding of economic growth and welfare. Arguably, this further clarifies aspects of Marx's conception of classical political economy as a historical stage in the development of economics from the monetary and mercantile schools of the sixteenth and seventeenth centuries to the developments in vulgar economy of the nineteenth century.

Some further observations on Marx's perspective of classical political economy are in order. The first is that Marx clearly saw himself as transcending the classical school. This is evident from his emphasis on the inherent methodological limitations of the classical school despite its obvious methodological strengths. Not for nothing did Marx apply his general critique of political

economy not only to contemporary forms of 'vulgar economy' – he applied it as stridently to the best representatives of the classical school. From his own perspective, his work is therefore outside that of classical political economy, while subsequently his work has been firmly placed within what has been described as the classical tradition. This is not only the case with conventional historical classification of economic thought; to some extent the perspective of classical economics as the surplus approach to political economy includes him firmly with that tradition. Second, Marx placed a definite close on the classical school in the 1820s inherent, as he saw it, in its specific limitation. This contrasts with more modern views associated with Sraffa's work, which see the classical approach as an ongoing one, in many respects more useful for solving economic problems than the essentially different marginalist approach.

The substantial difference between Marx's view of classical political economy as a historical and chronological device and that in the conventional historical literature needs more emphasis. The conventional literature views classical political economy largely as a British phenomenon, falling between the work of Smith and that of John Stuart Mill, hence roughly covering the century ending in the 1860s. Marx's chronology in the development of the science is quite different; moreover, he gives it, especially in its classical phase, a wider international perspective highlighted by his emphasis on national schools and their antagonisms, elaborated on in this paper. From a surplus approach perspective, Marx's classification of classical political economy is clearly superior, since it provides recognition of the important predecessors which include not only the Physiocrats, but also the earlier, and significant, work of Petty, Boisguillebert and Cantillon.

The previous paragraphs suggest one further conclusion derivable from this discussion. There is an ambiguity in the notion of classical political economy which needs both further historical and analytical clarification. This paper has commenced this historical clarification by examining Marx's conception of classical political economy in more detail. It implies the need for a similar, detailed examination of the alternative conceptions existing in the literature. This examination is not only of historical interest. If Sraffa's positive contribution to economics, for example, lies partly in rehabilitating the classical approach to political economy, then it seems to be essential for both the approach and its authors to be clearly identified. The examination of Marx's conception provided here suggests that neither identification is straightforward and that, also in this respect, work remains to be done.

Notes

1 This paper is based on a small section of a much earlier paper originally inspired by a reading of Sraffa's Appendix D and dealing with images of classical political economy in general and a number of other matters. Revision and elaboration of the argument presented here was helped substantially by the perceptive comments of referees of this journal and by assistance from Melanie Beresford, Bruce McFarlane and Allan Oakley.

2 K. Marx, *A Contribution to the Critique of Political Economy*, London: Lawrence and Wishart, 1969, 52; J. M. Keynes, *General Theory of Employment, Interest and Money*, London: Macmillan, 1957, 3n.
3 K. Marx, *Contribution to the Critique*, 52.
4 *Ibid.*: 52n.
5 K. Marx, *Grundrisse*, London: Allen Lane, 1973, 883.
6 K. Marx, *Contribution to the Critique*, 52–5, 60–1.
7 K. Marx, *Capital*, vol. I, Moscow: Foreign Languages Publishing House, 1959, 81n.
8 Marx confined this national dimension for antagonisms in political economy to that between the British and the French, adding that it was duplicated 'by the Italians in their two schools, one at Naples and the other at Milan' (K. Marx, *Contribution to the Critique*, 55n). Marx therefore did not distinguish a separate 'romance school' of political economy. Although he did not explicitly say so, he appears to have associated Milanese economics with the French tradition and Neapolitan economics with the English school. His extensive knowledge of Italian economic writings, especially those of Beccaria and Verri (Milanese school) and Galiani and Genovesi (Neapolitan school) came from his close study of their work included in the Custodi collection.
9 K. Marx, *Contribution to the Critique*, 35, 54, 157–61 and cf. *Grundrisse*, 103, 227–8.
10 Marx, *Capital*, vol. I, 71.
11 *Ibid.*: 81n.
12 Marx specifically commented on this in letters written to Engels, 16 August 1867, January 1868, in *Marx-Engels Selected Correspondence*, Moscow: Foreign Languages Publishing House, n.d., 230–1, 238–9.
13 K. Marx, *Grundrisse*, 100–8, esp. 103.
14 *Ibid.*: 103–5.
15 *Ibid.*: 883–4.
16 K. Marx, *Theories of Surplus Value*, part III, London: Lawrence and Wishart, 1972, 453; cf. Marx to Engels, 27 June 1867, Marx to Kugelmann, 11 July 1868, in *Marx-Engels Selected Correspondence*, 230, 250–1.
17 See K. Marx, *Capital*, vol. 3, Moscow: Foreign Languages Publishing House, 1959, part VII ch. 48, esp. 794–8. This was of course not published till 1894. Marx's original intentions on this treatment of these subjects are given in his letter to Kugelmann, 11 July 1868, referred to in note 16 above.
18 K. Marx, *Theories of Surplus Value*, part II, Moscow: Progress Publishers, 1968, 124; *Theories of Surplus Value*, part III, 182.
19 K. Marx, Afterword to the second German edition of *Capital*, vol. 1, included in the edition used, 15–16.
20 See for example, R. L. Meek, 'The Decline of Ricardian Economics in England', in *Economics and Ideology and other Essays*, London: Chapman and Hall, 1967, 51–74; M. H. Dobb, *Theories of Value and Distribution since Adam Smith*, Cambridge: Cambridge University Press, 1973, ch. 4; T. W. Hutcheson, *On Revolution and Progress in Economic Knowledge*, Cambridge: Cambridge University Press, 1978, ch. 9.
21 For a detailed examination of these debates see Giancarlo De Vivo, *Ricardo and his Critics*, Modena: Università degli studi di Modena, 1984.
22 Mandel (*The Formation of the Economic Thought of Karl Marx*, London: New Left Books, 1971, 27 n2) describes these notebooks as part of Marx's Parisian reading notes but gives no date for when he made them. Oakley (*Marx's Critique of Political Economy*, London: Routledge and Kegan Paul, 1984, 28) does likewise and dates them at 1844. Nicolaus (in his notes to K. Marx, *Grundrisse*, 233 n10) states that Marx's notes on Boisguillebert are in unnumbered excerpt books compiled in June/July 1845 included in K. Marx and F. Engels, *Historisch-Kritische Gesamtsausgabe*, Berlin: Dietz Verlag, 1932, part I, vol. 3, 563–83. Although they are there described as 'Parisian notebooks', notebook IV is explicitly stated to have been

written by Marx in Brussels in June 1845, so that, if the Boisguillebert excerpts were made at the time indicated by Nicolaus, Marx initially studied the writings of the originators of classical political economy at around the same time.

23 K. Marx, and F. Engels, *Historisch-Kritische Gesamtsausgabe*, part I, vol. 3, 563–83.
24 K. Marx, *The Poverty of Philosophy*, Moscow: Foreign Languages Publishing House, n.d., 74.
25 See Allan Oakley, *Marx's Critique of Political Economy*, 72. Early writings mentioning Petty include K. Marx and F. Engels, *The German Ideology*, Moscow: Progress Publishers, 1964, 211n; K. Marx, *The Poverty of Philosophy*, 187.
26 K. Marx, *Contribution to the Critique*, 53–4.
27 *Ibid*.: 52–4.
28 K. Marx, *Theories of Surplus Value*, part I, 342–3, 345–6, 346, 346–50, cf. 175–7.
29 *Ibid*.: 350; cf. *Theories of Surplus Value*, part II, 112; and K. Marx, *Poverty of Philosophy*, 187.
30 K. Marx, *Theories of Surplus Value*, part I, 350–3.
31 For a detailed discussion of this, see A. Aspromourgos, 'Political Economy and the Social Division Labour', *Scottish Journal of Political Economy*, 33, February 1986, 28–45.
32 K. Marx, *Capital*, vol. 1, 91n, 172, 313, 617 esp.
33 K. Marx, *Capital*, vol. 1, 101, 145, 123, 141 respectively.
34 K. Marx, *Contribution to the Critique*, 54–5.
35 K. Marx, *Capital*, vol. 1, 130, 140n; *Theories of Surplus Value*, part I, 50.
36 K. Marx, *Contribution to the Critique*, 54–5, cf. 125, 146; K. Marx, *Grundrisse*, 198–9, 233; K. Marx, *Poverty of Philosophy*, 99.
37 K. Marx, *Contribution to the Critique*, 126 cf. 96; cf. his *Poverty of Philosophy*, 74. The 1845 Boisguillebert extracts appear to be the last that Marx made from his work, and supplied the material for Boisguillebert citations in the late 1850s. For example, in his *Grundrisse*, 233, Marx explicitly refers to these particular extracts and some are subsequently reproduced (e.g. in *Grundrisse*, 345). The extensive extracts from Boisguillebert's *Traité de la Nature, Culture, Commerce et Intérêt des Grains* interestingly conclude with Marx's own comments in which he notes the falseness of Say's Law, the connection between overproduction and a disequilibrium between prices and production costs, and conceives of such overproduction in terms of deficiencies of demand. See K. Marx and F. Engels, *Historisch-Kritische Gesamtsausgabe*, part I, vol. 3, 576–9.
38 K. Marx, *Contribution to the Critique*, 55n.
39 K. Marx, *Contribution to the Critique*, 61.
40 K. Marx, *Theories of Surplus Value*, part I, 342–55; Marx's extracts from Boisguillebert can only provide a rough guide by contrast, because they were made so early in his economic education. Furthermore, the scope of his *Theories of Surplus Value* made detailed treatment of Boisguillebert within its pages not really relevant. However, Marx did not abandon his coupling of Petty and Boisguillebert, as shown in his last excursus into the history of economic thought, the chapter he contributed to F. Engels, *Anti-Dühring*, part II, ch. 10, which repeats his earlier views on the rise of classical political economy. See F. Engels, *Anti-Dühring*, Moscow: Foreign Languages Publishing House, 1954, 314, 320–3, 326. See also J. J. Spengler 'Boisguillebert's Economic Views *vis-à-vis* those of Contemporary Reformers', *History of Political Economy*, 16, spring 1984, 69–88, esp. 77 from which the quotation in the text is drawn.
41 K. Marx, *Grundrisse*, 647–8, 687–8; *Capital*, vol. I, 585–6. The list of authorities used in *Capital* includes Sismondi's major publications, that is, *Traitè de la Richesse Commerciale*, Geneva, 1803; *Nouveaux Principes d'Economie Politique*, 2nd edn, Paris: Delauney, 1827; *Etudes sur l'Economie Politique*, Brussels: Société Typographique Belge, 1837–8.

42 K. Marx, *Theories of Surplus Value*, part III, 53, cf. *Theories of Surplus Value*, part I, 402, which applies this remark to both Sismondi and Malthus.
43 K. Marx, *Theories of Surplus Value*, part III, 287; for some of these citations, see for example *Capital*, vol. I, 155, 173, 314, 536, 567, 577, 586.
44 K. Marx and F. Engels, *Communist Manifesto*, in *Marx-Engels Selected Works*, Moscow: Foreign Languages Publishing House, 1950, vol. I, 25–61.
45 K. Marx, *Contribution to the Critique*, 61. Good examples of utopian tendencies can be found, for example, in Boisguillebert, *Factum de la France*, 1705, especially chapters 6 and 8.
46 K. Marx, *Contribution to the Critique*, 60.
47 Sismondi, *Nouveaux Principes d'Economie Politique*, book III.
48 K. Marx, *Theories of Surplus Value*, part III, 424.
49 K. Marx, *Contribution to the Critique*, 52n.
50 See Boisguillebert, *Factum de la France*, 1705 reprinted in *Pierre de Boisguillebert ou la Naissance de l'Economie Politique*, Paris: Institut National d'Etudes Démographiques, 1966, 899–918.
51 Sismondi, *Nouveaux Principes d'Economie Politique*, vol. 1, 55.
52 K. Marx, *Theories of Surplus Value*, part II, 117–18, 534, 649 n142; part III, 55–6, 84, 384.
53 K. Marx, *Theories of Surplus Value*, part III, 259.
54 Marx charged Malthus with plagiarising Sismondi on the subject and included Say with the 'insipid forerunners' of vulgar economy and hence irrelevant to the classical political economy classification. Marx also charged Say with plagiarism, in this context from James Mill's analysis of his famous principle. See K. Marx, *Grundrisse*, 410–13; *Contribution to the Critique*, 97; and *Theories of Surplus Value*, part III, 53, where Marx refers to Malthus' 'adaptation of Sismondi's views'. During the eighteenth century, however, although some Physiocrats appear to have accepted the possibility of underconsumption from deficient demand, others like Turgot did not and presented opinions similar to those given by Adam Smith. Meek ('Physiocracy and Early Theories of Underconsumption', in R. L. Meek, *The Economics of Physiocracy*, London: Allen & Unwin, 1962, 313–44) has pointed to the fact that much of the British underconsumptionist writings at the turn of the century were inspired by the French.

9 German political economy, history and the law of value

Marx and Engels *contra* Achille Loria[1]

When, in October 1894, Engels wrote the preface for the edition he had been preparing from Marx's manuscripts of the third volume of *Capital*, he used the opportunity to present some criticisms of the views put forward on Marx by Achille Loria. These had been published during the decade following Marx's death in 1883, beginning with Loria's biographical piece on Marx published during that year. A good half year after completing the preface, that is, in May 1895, in two supplementary notes written about the third volume for the *Neue Zeit*, Engels commented further on Loria's criticism of Marx, as well as on Loria's claims made on behalf of himself about the discovery of historical materialism. Letters to Plekhanov and Schmidt in February and March 1895 indicate how essential Engels saw his task of replying to Loria,[2] particularly with respect to the so-called contradiction between volumes I and III of *Capital* on the law of value and the theory of prices of production.

Engels' first criticism concerned Loria's biographical sketch of Marx published in April 1883, and in May he wrote to its author that it was 'a work of complete phantasy'. According to Engels, this was a 'biography brimming with misinformation, which was followed by a critique of public, political and literary work'. Apart from one specific issue, Engels gave no details about Loria's errors because this, in his view, constituted the critical fault on Loria's part. It arose from Loria's attempted falsification 'of Marx's material conception of history' and distorting it 'with an assurance which bespeaks a great purpose' (Engels 1894: 16). Loria's objective in this, as Engels also indicated, was revealed in 1886, no less than three years after it was first contemplated. In a book, *La teoria economica della constituzione politica*, Loria announced that 'Marx's conception of history, so completely and purposefully misrepresented by him in 1883, was his own discovery'. Engels conceded that in making this claim, Loria's presentation of this conception 'is reduced … to a rather Philistine level' by him, and that his 'historical illustrations and proofs abound in blunders'. Nevertheless, Loria has convinced himself as well as some of his Italian countrymen and even some Frenchmen that he, in 1886, rather than Marx, in 1845, had discovered 'that political conditions and events are everywhere invariably explained by corresponding economic conditions' (Engels 1894: 16–17).

Engels also indicts Loria in this preface for incorrectly solving the problem of incompatibility between the theory of surplus value and the competitive requirement of an equal profit rate for industries (or firms) where the organic composition of capital, or the ratio of constant capital (investment in fixed and non-wage working capital) to variable capital (wage bill) is different. Loria's solution for this problem, offered in an article published in *Conrad's Jahrbucher* for 1890, sought to equalise the rate of profit for three capitalists employing capitals of different organic composition via a redistribution of surplus value involving an (unexplained) commercial (unproductive) capital (Engels 1894: 17–19). Engels returned to the last issue in his supplement to volume III of *Capital* published in May 1895. There he held Loria's protest at Marx's solution (in which aggregate values are shown to equal aggregate prices of production even if, for individual industries with differing organic composition of capital, values and prices differ) up to ridicule by portraying it, among other things, as 'the acme of vulgar economics' (Engels 1895: 868–70).

In what follows, this paper details and examines Engels' critique of Loria in the three areas of Loria's writing on Marx which he had identified in the material cited above. Each of these is discussed in a separate section. The first section, therefore, intends both to discover, and to analyse, the errors which Engels attributed to Loria with respect to his 1883 biographical study of Marx. The second section investigates the errors committed by Loria in postulating, and explaining, the material conception of history, taking it for granted that Engels is correct in claiming Marx's priority over Loria for this contribution.[3] The third section then looks at Engels' criticism of Loria's discussion of the famous contradiction between the early volumes of *Capital* and their exposition of the law of value, and the third volume, concerned as it is with prices of production and the equalisation of the profit rate in competitive conditions, that is, Loria's handling of the transformation problem, as it is now called. A final section draws some conclusions.[4]

I

A reading of Loria's article on Marx makes it easy to see why Engels would have been so annoyed with the biographical part to have charged it with being filled to the brim with misinformation. Although, as already indicated in the introduction to this paper, Engels failed to identify any specific items of such misinformation, it is not difficult to point to a succession of matters of a biographical nature in Loria's monograph which Engels would have no hesitation in describing as either misleading or, more strongly, as plainly erroneous. In addition, there are matters of judgement in Loria's portrait of Marx which would have struck Engels as ill informed, if not wrong. It may be added that the version of Loria's Marx monograph commented on here (Loria 1920) contains no documentation for many of the statements made.

The first instance of misinformation in Loria's account of Marx's life relates to the aristocratic pedigree with which he tried to supply the subject of his biog-

raphy by innuendo. Its opening sentence suggests, albeit anonymously, that 'aristocratic seeds' or a 'conservative, reactionary background' can yield 'revolutionary blossoms', that is, prophets and revolutionaries such as Marx. 'It would, indeed, be difficult to imagine a more typically refined and aristocratic entourage than the one where in the future high priest of the revolution was born and passed his early years' (Loria 1920: 38 and cf. 37–8). Yet Loria admits that Marx's ancestors on both the maternal and paternal side were rabbis (whether 'distinguished' or not, history does not fully record) so that the aristocracy implied previously in Loria's introductory remarks is in fact that of Jewish religious practice. The details of Marx's ancestral background are also purposefully blurred in Loria's account of Marx's early associations with the von Westphalen family. When Marx married Jenny von Westphalen, he thereby entered into 'one of the best houses in the district', to quote Loria's highly ambiguous statement, in addition gaining as brother-in-law, according to Loria, Edgar von Westphalen, later a member of the 'reactionary Manteuffel ministry'. As Mehring (1936: 18) points out, the Manteuffel minister was not Edgar, but Ferdinand von Westphalen. Edgar, Marx's friend, as Mehring also notes, 'developed as far to the left … as his step brother [Ferdinand] to the right'. This remark in Loria's Marx monograph embodies careless, if not shabby, falsification on Loria's part. Loria's anti-semitic flourish, by describing Marx's rabbi ancestors as 'an extremely ancient stock devoted to the accumulation of wealth' (Loria 1920: 38) had undoubtedly a similar purpose.[5]

Although largely in the nature of critical comment, Loria's remarks on Marx's poetry of the mid-1830s are also tainted with misinformation. Some of Marx's verses were philosophical epigrams; the greater part of this youthful poetry consisted of love poems, addressed by Marx to his wife-to-be, Jenny von Westphalen. None of these love poems, and only a few others, have survived (Mehring 1936: 10; McLellan 1973: 20–2). It is therefore very difficult to see where Loria (1920: 39) gained his information for making the following judgement:

> in leisure moments Marx penned verses of no mean order. These latter compositions display numerous defects of style; they are heavy and turgid; the movement is sluggish; their sonorous gravity reminds the reader of a company of medieval warriors in heavy armour mounting the grand staircase; but they are none the less distinguished by remarkable profundity of thought, and they may be looked upon as versified philosophy rather than as poetry in the proper sense of the term.

Equally apocryphical appears to be the story that Loria (1920: 40) tells about aspects of Marx's relationship with Heine. These concern Marx's alleged suggestion to Heine that he distribute the pension which had been granted to him by Guizot among the German refugees in Paris, a suggestion Heine refused point blank. Neither Mehring nor McLellan recount this story in their thorough biographies of Marx; nor, for that matter, does Loria provide any clue as to the source of this tale.

Loria's account (Loria 1920: 45) of Marx's years of exile in London, is likewise replete with exaggeration and misinformation, if not straightforward untruths. The paragraph in question reads as follows:

> Here the saddest trials awaited him, for poverty, gloomy companion, sat ever at his board from the day of his entry into the British capital down to the hour of his last breath. One after another of his children died in the unwholesome dwellings of his exile, and he was forced to beg from friends and comrades the scanty coins needed to pay for their burial; he and his family had to make the best of a diet of bread and potatoes; he was forced to pawn his watch and his clothing, to sell his books, to tramp the streets in search of any help that might offer; the day came when, under the lash of hunger, he was compelled to contemplate seeking work as railway clerk, of placing his daughters out to service, of making them governesses or actresses, whilst himself retiring with his unhappy wife to dwell in the proletarian quarter of Whitechapel.
>
> (Loria 1920: 45)

Marx clearly was never well off financially during the decades of his London exile. However, the houses in which he lived with his family for the years from the mid-1850s onwards are difficult to describe as 'unwholesome dwellings'. It is possible that some of Marx's earlier places of residence in London fall into this category, though this can no longer be ascertained from physical inspection. Marx's first dwelling in London (4 Anderson Street, London SW3, in Chelsea) is still standing and was not 'unwholesome'; however, they were evicted from it for non-payment of rent within six months. Their subsequent temporary residence in Leicester Street, and the next one in Dean Street (for six years) no longer exist. Grafton Terrace, Kentish Town, where the Marx family moved in 1856 and where they lived until 1864, was a modest, rather than 'unwholesome dwelling', while the houses in Maitland Park Road, where they lived for nearly two decades until Marx's death, were substantial middle-class residences.[6] Marx's early years in London were a period of abject poverty, and three of the six children died relatively young: one of them, Francisca, in infancy. However, Loria's account of severe poverty, as quoted above, relies more on his vivid imagination than on fact, poverty-stricken though the growing Marx family was for at least the early part of its London life up to the mid-1850s. Nor are Loria's (1920: 45–6) inferences about Marx's character from this picture of poverty soundly drawn.

There are other peculiar and exaggerated tales about Marx's London life in Loria's monograph for which there is absolutely no supporting evidence. Take, as an example, Loria's claims about the mechanisms by which people, including Wilhelm Liebknecht, were said to have gained admission to Marx's circle. I quote:

> Within a brief time of his arrival in the British metropolis he again became the chief, nay the dictator, of a circle to which none could be admitted

> without passing a severe examination as to knowledge of science in general and of political economy in particular, an examination so rigorous that even Wilhelm Liebknecht was unable at first to satisfy its requirements, an examination that was physical as well as mental, for the aspirants were subjected (rejoice, shade of Lombroso!) to precise craniometrical tests.
>
> (Loria 1920: 49)

Liebknecht's own account (Liebknecht 1975) differs to a significant extent. His recollections of his first meeting with Marx do mention 'a rigid examination' by Marx, which he 'safely passed', combined with a 'manual' inspection of his head, apparently associated with Marx's belief in the value of phrenology as a guide to character. Liebknecht also recalled in his memoirs that 'the party' at a later stage appointed Karl Pfaender as official phrenologist and that Marx continued to 'test' him on his knowledge and reading on many occasions afterwards, as he apparently did with other exiles from Germany in London (Liebknecht 1975: 52–7, 64–6). Loria's account is therefore much embellished by his vivid imagination: Liebknecht's memoir neither provides evidence for the assertion that he failed his initial examination, nor for the statements that it concentrated on 'science in general and political economy in particular' and that 'aspirants were subjected to precise craniometrical tests'. The obsession with phrenology among the refugees may strike contemporary readers as peculiar, but it should not be forgotten how widespread the interest was in phrenology in the mid-nineteenth century, including among the best educated circles.

Engels would also have been greatly annoyed by Loria's description of his work in making volumes II and III of *Capital* ready for the press as 'careless and pedestrian editorship' (Loria 1920: 75). Loria's statement is based on the proposition that volume II especially stands in sharp contrast to the first volume of *Capital*, which Marx himself had prepared for publication, because 'the long theoretical disquisitions make no appeal to the facts' and the argument is not interrupted and lightened by the many illustrations which made the first volume of *Capital* so readable. There is an element of truth in Loria's judgement on the comparability of the first to the later volumes of *Capital*. However, the charge is unfairly levelled at Engels. In his editorial task, Engels explicitly wished to present the edited work 'exclusively [as] the work of its author [i.e. Marx], not of its editor', while, at the same time, presenting the work in as connected and complete a form as possible. Hence Engel's editorial task was to 'reproduce' the 'manuscripts as literally as possible', particularly in cases where the meaning was not clear and where changes by the editor could, unwittingly, have altered the meaning (Engels 1885: 1). This type of annoyance which Engels may have experienced from reading Loria's monograph on Marx was probably on a different scale from that associated with the types of factual error and misinformation which tarnished Loria's account of Marx's life, and of which various examples have already been given in the preceding pages. They were part and parcel, however, of the more significant mistakes with which Engels

explicitly charged Loria in his account of Marx, and on which Engels made explicit comments in the preface and afterword to the third volume of *Capital* which was published in 1894, as well as in direct correspondence with Loria (see Faucci 1978).

II

Falsification of Marx's materialist conception of history and claiming it as his own discovery, are additional, and more serious, charges which Engels levied against Loria. The paragraph from Engels' preface to the third volume of *Capital* in which these charges were made is sufficiently concise to be quoted in full:

> No sooner had Marx died than Mr. *Achille Loria* hastened to publish an article about him in the *Nuova Antologia* (April 1883). To begin with, a biography brimming with misinformation, followed by a critique of public, political and literary work. He falsifies Marx's materialist conception of history and distorts it with an assurance that bespeaks a great purpose. And this purpose was eventually carried out. In 1886, the same Mr. Loria published a book, *La teoria economica della constituzione politica*, in which he announced to his astounded contemporaries that Marx's conception of history, so completely and purposefully misrepresented by him in 1883, was his own discovery. To be sure, the Marxian theory is reduced in this book to a rather Philistine level, and the historical illustrations and proofs abound in blunders which would never be tolerated in a fourth-form boy. But what does that matter? The discovery that political conditions and events are everywhere invariably explained by corresponding economic conditions was, as is herewith demonstrated, not made by Marx in 1845, but by Mr. Loria in 1886. At least he has happily convinced his countrymen of this, and, after his book appeared in French, also some Frenchmen, and can now pose in Italy as the author of a new epoch-making theory of history until the Italian Socialists find time to strip the illustrious Loria of his stolen peacock feathers.
>
> (Engels 1894: 16–17)

Engels draws attention to two of Loria's publications in this context: the biographical sketch of Marx and, more importantly, *The Economic Foundations of Society*. In the first, Loria credits the *Communist Manifesto* with voicing what he calls the two fundamentals of Marxism,

> the dependence of economic evolution upon the evolution of the instruments of production, in other words, the *technicist determination of economics*, and the derivation of the political, moral and ideal order, in other words, the *economic determination of sociology*, or, as we should express it today, historical materialism.
>
> (Loria 1920: 43)

Loria draws a further inference from this. The 'dependence of the political order upon the economic order', because it concentrates political power in the hands of those who hold the economic power, or in those of their representatives and agents, makes a peaceful improvement in the conditions of the working classes virtually impossible. Hence only an act of revolution can rescue the working classes from their lot, thus making imperative the *Communist Manifesto*'s resolute injunction of 'Workers of the world, unite' (Loria 1920: 44).

The above contains the grounds for Engels' objections to Loria's treatment of 'historical materialism' in the sketch of Marx, that is, its distortion of the origins of this viewpoint by failing to locate it accurately in the writings of Marx and Engels three years previously in the work entitled *The German Ideology* (Marx and Engels 1845). Nor is the materialist conception of history correctly described by Loria in this paragraph, which simply portrays it as the dependence of the political, legal and ideal order upon the economic, while the economic in turn is said to depend upon the technology arising from the evolution of the means of production.

The simple form of the argument as put by Loria can already be sharply contrasted with the manner in which Marx and Engels had put the matter in their first presentation of historical materialism in the critique of Feuerbach, which opens their work in *The German Ideology* of 1845. This placed at the core of 'historical materialism', 'the way in which men produce their subsistence'. This in turn required information about the precise 'nature of the actual means of subsistence' as well as a clear understanding of 'the mode of production'. The last implied for Marx and Engels 'a definite form of activity', 'a definite form of expressing their life, a definite mode of life on their part'. Hence 'what they are, therefore coincides with their production, both with *what* they produce and with *how* they produce. The nature of individuals thus depends on the material conditions determining their production' (Marx and Engels 1845: 31–2).

The critique of Feuerbach then elaborated this thesis in terms of the content to be assigned to the phrase 'mode of production' by way of population, exchange, nature of division of labour and their historical development, which in turn introduced issues of class and ownership of the means of production. At this stage, Marx and Engels also outlined the various stages of that development from tribalism to slave society, to feudalism and, ultimately, to capitalism as the contemporary mode of production. Such a material perspective turns German philosophy upside down. As Marx put it in a famous paragraph from *The German Ideology*,

> In direct contrast to German philosophy which descends from heaven to earth, here we ascend from earth to heaven. That is to say, we do not set out from what men say, imagine, conceive, nor from men as narrated, thought of, imagined, conceived, in order to arrive at men in the flesh. We set out from real, active men, and on the basis of their real life process we demonstrate the development of the ideological reflexes and echoes of this life-process. The phantoms formed in the human brain are also, necessarily, sublimates of

> their material life-process, which is empirically verifiable and bound to material premises. Morality, religion, metaphysics, all the rest of ideology and their corresponding forms of consciousness, thus no longer retain the semblance of independence. They have no history, no development; but men, developing their material production and their material intercourse, alter, along with this their real existence, their thinking and the products of their thinking. Life is not determined by consciousness, but consciousness by life. In the first method of approach the starting-point is consciousness taken as the living individual; in the second method, which conforms to real life, it is the real living individuals themselves, and consciousness is considered solely as their consciousness.
>
> (Marx and Engels 1845: 37–8)

In the material quoted from his preface to the third volume of *Capital*, Engels does not mention the further development which the doctrine underwent after its initial statement in the 1840s, and of which he had been informed in a letter from Marx written in 1858 (Marx to Engels, 14 January 1858, in Marx and Engels 1953: 121). This was the re-introduction of the Hegelian dialectic into Marx's method, albeit shorn of its idealistic content. Marx saw this as essential for his critique of political economy, of which he published a first, brief, instalment in 1859, and the first volume in 1867. Marx's mature work, in this sense, can be said to have been guided by *dialectical* materialism rather than the historical materialism of the earlier work. It hardly needs to be pointed out that Hegel, and the appropriateness of his dialectical method for the mature Marx, are completely omitted from Loria's account of historical materialism, so that Loria can be said to have been totally unaware of the substantial contribution of the Hegelian dialectic to the final versions of Marx's materialist conception of history.

So much for Loria's biographical conception of Marx and his method. What about his adaptation of that method to explain the *Economic Foundations of Society*? For Loria, this book represented a 'long mental pilgrimage through the vast domain of economic sociology' from which the conclusion was reached that contemporary capitalist property relations are not the consequences of human nature but of powerful historical causes which, in the second edition, were firmly associated with the degree of existence of free land in a society at a particular stage in its development. However, this novel feature aside, the basic elements of Loria's argument, which he first put forward in 1886, are very similar to the major features of that historical materialism exposited by Marx and Engels as early as 1845. This can be demonstrated as follows.

The book's contents are divided by Loria into three major parts: the economic foundations of morality, the economic foundations of law, and the economic foundations of politics – a clear exemplification of the broad conclusion which Loria derives from his work, namely that economics is the basis of sociology. This broad argument that the superstructure of moral, legal and political institutions in society rests firmly on economic foundations, is elaborated in

detail and supported by a wide array of facts. The close resemblance of the thrust of this particular argument to the historical materialism of Marx and Engels needs little demonstration, even though there are many differences in the elaboration of the detail and the facts by which Loria endeavours to demonstrate his thesis.

Underlying the tripartite division of the contents by Loria is his adherence to a three-stage scheme of historical change on the basis of which many of his illustrations are organised. The first of these stages encompasses the slavery societies of both the ancient and the modern world; the second draws on the characteristics of feudal society; while the third stage embraces contemporary society with its property relations of capital and labour. The transition of one historical stage to another is associated by Loria with the degree of occupation, or the availability, of agricultural land. The existence of free land, in his opinion, necessitated slavery in order to ensure production, as evidenced by colonial practice, old and new. The situation in feudal society is explained in his own words as follows:

> Certain economic phenomena of the middle ages also illustrate the effects produced by the existence of free land. Thus with the disappearance of serfdom from manufacturing industries while fertile lands still remained unoccupied, there developed that primitive form of the mixed association known as the crafts-gild, which categorically excluded profit by dividing the product in equal proportions between the producers of capital (the gild-masters) and the ordinary labourers (the journeymen). And as profits could only be extorted by violence, persecution of the workmen followed in time as a natural result. The prohibition of usury was another outcome of these conditions; for the capitalists' difficulty in acquiring profits from industrial enterprise rendered the very idea of interest on capital inconceivable, and thus naturally caused it to be regarded as the result of theft or fraud.
>
> (Loria 1910: 3–4)

Further increases in population eventually result in the total appropriation of land, transforming the economic system of necessity into capitalism. This follows from the fact that the labourer has lost the alternative opportunity of gaining a livelihood from agricultural production on his own account, and therefore needs to 'sell his labour to the capitalist for the wages which it pleases the latter to determine'. Profits, through the enforced expropriation by the capitalist of the labourer's product under the wage system, arise from the 'progressive appropriation of the soil … by depriving the labourer of his choice, thereby establishing his economic bondage' (Loria 1910: 4).

The peculiar gloss on landownership which Loria put on his historical materialism, and on the exploitation-profit theory derived therefrom, would not have pleased Engels. However, Engels would have been even more annoyed with Loria's historical account of the origins of the theory, as presented in the second edition of Loria's *Economic Foundations of Society*. This no longer

claimed the invention of historical materialism for himself, as, on Engels' account quoted at the beginning of this section, had been done by him in the first edition, but traced it back to a long pedigree beginning with James Harrington, the seventeenth-century political philosopher of the Cromwellian Commonwealth. Marx is indeed listed among those making up this pedigree as a 'person who throws much light on the question', but his contributions thereto mentioned by Loria are confined to some pages from the preface to the 1859 *Contribution to the Critique of Political Economy* and some material from the first volume of *Capital* (presumably the final pages of its first chapter on commodities). Engels is likewise mentioned in this list, immediately after Marx (Loria 1910: 337). However, it is interesting to observe that Marx, or the person who throws so much light on the association between economics and politics, is never quoted by Loria in his exposition of the economic foundations of society. The closest Loria comes to a citation from Marx is an approving reference to work by his son-in-law, Paul Lafargue, *The Evolution of Property from Savagery to Civilisation* (Loria 1910: 38 n1). It is ironic that on the title page of the edition of Lafargue's book which Loria used, he would have been able to find in summary the basis of the thesis he was expounding ascribed to Marx's *Capital*:

> The economic structure of society is the real basis on which the juridical and political superstructure is raised, and to which definite social forms of thought correspond: in short, the mode of production determines the character of the social, political, and intellectual life generally.

There is, in short, much justification for Engels' remarks on Loria's work on the economic foundations of society, even on the evidence of the revised second edition of that work rather than that from the first edition on which Engels made his original judgement.[7]

III

In the preface and subsequent afterword to the third volume of *Capital*, Engels' greatest complaints against Loria concerned Loria's discussion of the transformation problem. This provided Marx's solution to the widely seen potential contradiction between the concept of labour values as employed in the first volume of *Capital*, and that of competitive prices of production, implying a uniform profit rate, as part of the argument for the third volume of *Capital*. Loria had raised the potential for contradiction between a rate of surplus value based only on variable capital and a uniform profit rate based on total capital investment, as soon as different organic compositions of capital (rates of constant to variable capital) prevailed between different sectors of industry. The following quotation from Engels' preface to the third volume of *Capital* indicates this:

> [Mr Loria] assures us that all Marx's theories rest on conscious sophistry (*un consaputo sofisma*); that Marx did not stop at paralogisms even when *he knew them to be paralogisms* (*sapendoli tali)*, etc. And after thus impressing the necessary upon his readers with a series of similar contemptible insinuations, so that they should regard Marx as an unprincipled upstart à la Loria who achieves his little effects by the same wretched humbug as our professor from Padua, he reveals an important secret to them and thereby takes us back to the rate of profit.
>
> Mr. Loria says: According to Marx, the amount of surplus-value (which Mr. Loria here identifies with profit) produced in a capitalist industrial establishment should depend on the variable capital employed in it, but on total capital. But this is contrary to fact. For in practice profit does not depend on the variable capital employed in it, since constant capital does not yield a profit. And Marx himself recognises this (Buch I, Kap. XI) and admits that on the surface facts appear to contradict his theory. But how does he get around this contradiction? He refers his readers to an as yet unpublished subsequent volume. Loria has already told his readers about this volume that he did not believe Marx had ever entertained the thought of writing it, and now exclaims triumphantly: 'I have not been wrong in contending that this second volume, which Marx always flings at his adversaries without it ever appearing, might very well have been a shrewd expedient applied by Marx whenever scientific arguments failed him (*un ingegnoso spediente ideato dal Marx a sostituzione degli argomenti scientifici*)'. And whosoever is not convinced after this that Marx stands in the same class of scientific swindlers as *l'illustre* Loria, is past all redemption.
>
> We have at least learned this much: According to Mr. Loria, the Marxian theory of surplus-value is absolutely incompatible with the existence of a general equal rate of profit. Then, there appeared the second volume and therewith my public challenge precisely on this very point. If Mr. Loria had been one of us diffident Germans, he would have experienced a certain degree of embarrassment. But he is a cocky southerner, coming from a hot climate, where, as he can testify, cool nerve is a natural requirement. The question of the rate of profit has been publicly put. Mr. Loria has publicly declared it insoluble. And for this very reason he is now going to outdo himself by publicly solving it.
>
> (Engels 1894: 17–18)

Engels then introduced the solution proposed by Loria in an article published in *Conrad's Jahrbucher* (new series, Book XX, 272), from which the following part of Loria's argument is quoted:

> Since determining value by means of labour-time is to the advantage of those capitalists who invest a greater portion of their capital in wages, the 'unproductive' (read commercial) 'capital can derive a higher interest' (read profit) 'from these privileged capitalists and thus bring about an

> equalisation between the individual industrial capitalists. … For instance, if each of the industrial capitalists A, B, C uses 100 working-days and 0, 100, 200 constant capital respectively in production, and if the wages for 100 working-days amount to 50 working-days, then each receives a surplus-value of 50 working-days, and the rate of profit is 100% for the first, 33.3% for the second, and 20% for the third capitalist. But if a fourth capitalist D accumulates an unproductive capital of 300, which claims an interest' (profit) 'equal in value to 40 working-days from A, and an interest of 20 working-days from B, then the rate of profit of capitalists A and B will sink to 20%, just as that of C, while D with his capital of 300 receives profit of 60, or a rate of profit of 20%, the same as the other capitalists'.
>
> (cited in Engels 1894: 18)

Not surprisingly, Engels immediately spotted the weakness in Loria's explanation, and criticised it mercilessly.

> With such astonishing dexterity, *l'illustre* Loria solves by sleight of hand the question which he had declared insoluble ten years previously. Unfortunately, he did not let us into the secret wherefrom the 'unproductive capital' obtained the power to squeeze out of the industrialists their extra profit in excess of the average rate of profit, and to retain it in its own pocket, just as the land-owner pockets the tenant's surplus profit as ground-rent. Indeed, according to him it would be the merchants who would raise a tribute analogous to ground-rent from the industrialists, and would thereby bring about an average rate of profit. Commercial capital is indeed a very essential factor in producing the general rate of profit, as nearly everybody knows. But only a literary adventurer who in his heart sneezes at political economy, can venture the assertion that it has the magic power to absorb all surplus value in excess of the general rate of profit even before this general rate has taken shape, and to convert it into ground-rent for itself without, moreover even having need to do with any real estate. No less astonishing is the assertion that commercial capital manages to discover the particular industrialists, whose surplus value just covers the average rate of profit, and that it considers it a privilege to mitigate the lot of these luckless victims of the Marxian law of value to a certain extent by selling their products gratis for them, without asking as much as commission for it. What a mountebank one must be to imagine that Marx had need to resort to such miserable tricks!
>
> (Engels 1894: 18–19)

Engels' criticism of Loria's solution to the transformation problem is given greater transparency in the summary of Loria's argument provided by Howard and King (1989: 30, 32) in particular via the table which they adapted from that constructed by Loria himself (it is reproduced here as Table 9.1). This shows that Loria achieved the desirable outcome by converting part of uniform

Table 9.1 Loria's numerical example

	Constant capital (c)	*Variable capital (v)*	*Surplus value (s)*	*Total capital (c + v)*	*% s/c + v*	*Interest payments*	*Industrial profits*	*Industrial profit rate, %*	*Money-capitalist's profit rate, %*
Capitalist A	0	50	50	50	100	40	10	20	
Capitalist B	100	50	50	150	33 ⅓	20	30	20	
Capitalist C	200	50	50	250	20	0	50	20	
Total	300	150	150	450		60	90		
Capitalist D				300		60			20

Source: Adapted from Loria, review of Schmidt, *Die Durchschnitts Profitrate*, in *Conrads Jahrbücher* (1890) 20, 274, as given in Howard and King 1989: 32.

surplus value (associated with equal variable capital investments and a uniform rate of surplus value of 100 per cent) into non-uniform interest payments, thereby leaving the appropriate sums of 'industrial profits' for achieving a uniform rate of profit relative to total capital invested (see Table 9.1). As Howard and King point out in their criticism, Loria nowhere indicated why this interest payment needs to be made from surplus value and, more importantly, why the size of this interest payment varied inversely with total capital invested.

Loria's essay on Marx in the version used for this paper (Loria 1920), provides no solution to the transformation problem whatsoever, but only a satisfactory summary of its nature, followed by his summary of Marx's solution as published in volume III of *Capital*. Loria's subsequent critique of this solution can be quoted in his own words:

> this so-called solution is little more than a play upon words, or, better expressed, little more than a solemn mystification. For when economists endeavour to throw light upon the laws of value, they naturally consider the value at which the commodities are actually sold, and not a fantastical or transcendental value, not a value which neither possesses nor can possess any concrete relationships to facts. It may well be that value as determined by abstract economic theory will not always correspond precisely with value as a concrete fact, for the complexities and the manifold vicissitudes of real life impose obstacles; it may well be, indeed, that to the rigidity of normal value, constituting the type of the relationship of exchange, we ought to counterpose the comparatively transient fluctuations of current value. But it must be understood that no logical fact should stand in the way of the realisation of normal value, for this, conversely, ought to be derived by logical necessity from fundamental economic premises. Of a value, indeed, which not only is not realised, but is not logically capable of realisation, the economist neither can nor ought to take any account; he should show in what respect, instead of being the expression of what value is, it is the expression of what value is not and cannot be; he should point out the negation of every correct and positive theory of value. Now this value commensurate to labour, value as defined by Marx's theory, not merely has its realisation restricted or modified by the vicissitudes of reality, but further, as Marx himself is constrained to recognise, it is not logically capable of realisation, seeing that it would give rise to results incompatible with the most elementary advantage of those who effect the exchange of commodities; consequently, it is not merely an abstraction remote from reality, but is incompatible with reality; not only is it an impossibility in the realm of fact, but further and above all it is a logical impossibility. Thus, far from effecting the salvation of the threatened doctrine, this alleged solution administers a death-blow, and implies the categorical negation of what it professes to support. For what meaning can there possibly be in this reduction of value to labour, the doctrine dogmatically affirmed in the first volume, to one who already knows that the author is himself calmly

> prepared to jettison it? Is there any reason for surprise at Marx's hesitation to publish this so-called defence; need we wonder that his hand trembled, that his spirit quailed, before the inexorable act of destruction?
>
> (Loria 1920: 77–9)

Engels returned to the topic in his 'afterword' to the third volume of *Capital*, in the section dealing with the 'law of value and rate of profit' (Engels 1895). This poked considerable fun at Loria's treatment of the matter in his essay on Marx as published originally, and of which the later version in English translation has just been partially quoted. The flavour of Engels' acerbic comment is best given by a substantial quotation from Engels' extensive attack on Loria's *Marx*.

> It was to be expected that the solution of the apparent contradiction between these two factors would lead to debates just as much after the publication of Marx's text as before it. Some were prepared for a complete miracle and find themselves disappointed because they see a simple, rational, prosaically-sober solution to the contradiction instead of the hocus-pocus they had expected. Most joyfully disappointed of course is the well-known, illustrious Loria. He has at last found the Archimedian fulcrum from which even a gnome of his calibre can lift the solidly built gigantic Marxian structure into the air and explode it. What! He declaims indignantly. Is that supposed to be a solution? That is pure mystification! When the economists speak of value, they mean value that is actually established in exchange. 'No economist with any trace of sense has ever concerned himself or will want to concern himself with a value which commodities do not sell for any and never can sell for (*né possono vendersi mai*). … In asserting that the value for which commodities never sell is proportional to the labour they contain, what does Marx do except repeat in an inverted form the thesis of the orthodox economists, that the value for which commodities sell is not proportional to the labour expended on them?. … Matters are not helped by Marx's saying that despite the divergency of individual prices from individual values the total price of all commodities always coincides with their total value, or the amount of labour contained in the totality of the commodities. For in-as-much as value is nothing more than the exchange ratio between one commodity and another, the very concept of a total value is an absurdity, nonsense … a *contradictio in adjecto* … ' At the very beginning of the book, he argues, Marx says that exchange can equate two commodities only by virtue of a similar and equally large element contained in them, namely, the equal amount of labour. And now he most solemnly repudiates himself by asserting that commodities exchange with one another in a totally different ratio than that of the amount of labour contained in them. 'Was there ever such an utter *reductio ad absurdum*, such complete theoretical bankruptcy? Was ever scientific suicide committed with greater pomp and more solemnity!'
>
> (*Nuova Antologia*, 1 February 1895: 478–9)

> We see our Loria is more than happy. Wasn't he right in treating Marx as one of his own, as an ordinary charlatan? There you see it – Marx sneers at his public just like Loria; he lives on mystifications just like the most insignificant Italian professor of economics. But, whereas Dulcamara [the charlatan in Donizetti's comic opera, *L'elisir d'amore*] can afford that because he knows his trade, the clumsy Northerner, Marx, commits nothing but ineptitudes, writes nonsense and absurdities, so that there is finally nothing left for him but solemn suicide.
>
> (Engels 1895: 868–9)

Loria's excursus into the transformation problem has subsequently received little recognition. Böhm-Bawerk, in his own famous contribution to the subject (1896: 6) cited Loria's list of articles written on the issue as presented in his essay on Marx, but makes no comment on Loria's argument contained therein, apart from approvingly quoting Loria's opinion that Marx's own solution constituted 'complete theoretical bankruptcy' and 'most explicit surrender of his [i.e. Marx's] own teaching' (Böhm-Bawerk 1896: 30). In the English-speaking world, three major writers on Marx's economics, including the transformation problem (Sweezy 1949; Meek 1958; Dobb 1973), ignored Loria's fate until the quite detailed treatment of Howard and King (1989) already quoted. This has not been the case in Italy. Loria's treatment of the transformation problem was severely criticised by the Marxist economist Labriola, and subsequently by Croce and others. For a detailed discussion see Faucci (1978). Given the quality of Loria's solution, that silence appears to be completely deserved.

IV

Few conclusions can be derived from this examination of the critical exchanges between Engels and Loria on the subject of Marx and his economics. Loria's biographical sketch of Marx contained important factual errors and other misrepresentations, for which there was no real excuse. Engels' annoyance with Loria on this score seems fully justified. Second, Loria's solution to the transformation problem is an absurd one, a judgement which stands irrespective of the importance to be assigned to that problem. Engels effectively criticised it, and the criticism was repeated by many Italian writers. In English discussion, it was generally ignored until the recent, clear critique by Howard and King (1989). Neither of these critical perspectives on Loria's portrayal of Marx are visible in Edgeworth's (1935: III, 274–5) review of Loria on Marx, which in any case contains no real criticism because Edgeworth appears not to have been a great student at first hand of Marx's life and work. Edgeworth's review, in fact, is little more than a repetition by quotation and paraphrase of Loria's portrayal of some of the less attractive aspects of Marx's character.

In the past, Loria's claims on the materialist conception of history appear to have been taken more seriously. Seligman (1907: 136n) explained such erroneous praise in England, France and Italy by 'the neglect of Marx's writings

outside Germany'. The only other reference to Loria made by Seligman in his *The Economic Interpretation of History* is the somewhat contradictory statement that Nieboer, the German historian, 'accepts the [materialist] theory of the *brilliant* Italian economist, Loria' (Seligman 1907: 82, my italics). In addition, Seligman (1907) also clearly demonstrates that although the origins of the materialist conception can be perceived in the writings of philosophers and social commentators prior to Marx, the major formulation of the theory is that by Marx. That was also clearly the view of Seligman's (and Loria's) contemporary Labriola (1908), in which the name of Loria was not even mentioned. Schumpeter's (1954: 122) remark that 'in some respects Loria can be described as a follower of Marx' is therefore highly problematical, and a dictum to which neither Marx nor Engels would have subscribed on the evidence here presented, while after Croce's discussion of the matter, Loria's allegiance to Marxism would have been very skeptically regarded in Italy.

Notes

1 In revising this paper for publication, I have been indebted in particular to Faucci's (1978) contribution on Loria, and to that by Faucci and Perri (1995). Faucci has also kindly supplied me with some other relevant, Italian material, access to which has significantly improved part of my argument.

2 See *Marx-Engels Selected Correspondence*, Moscow: Foreign Languages Publishing House, n.d., 562, 566.

3 As has generally been done. See, for example, Benedotto Croce (1914; 1966: 2, 91).

4 Some remarks need to be made here about the editions used of Loria's works. As a result of the tyranny of distance which affects researchers in the history of economics working in Australia, only few items of Loria's works consulted were in the form of the original Italian editions on which Engels commented. English translations, often made from earlier French translations, and of later editions than the first, had to be used for the essay on *Karl Marx* (Loria 1920) and for his *The Economic Foundation of Society* (Loria 1910). In addition, I examined an English translation of his *The Economic Synthesis* (Loria 1914), his essay on Malthus (Loria 1989), and a French translation of his *Les Bases Economiques de la Justice Internationale* (Kristiania [i.e. Oslo], 1912). The only Italian text of Loria available to me was *Il Salario* (Loria n.d.).

   This same tyranny prevented me from using Italian secondary literature, such as Faucci (1978).

5 The association Loria drew between rabbis and accumulation can also be interpreted as a play on Marx's famous phrase in *Capital*: 'Accumulate! Accumulate! That is Moses and the prophets', rendered in the Italian translation of *Capital* as 'Accumulate, Accumulate! Questa è la legge e questo dicono i profeti' (Marx 1867a: 651). This explicitly associates accumulation with the law and with the prophets, hence with the traditional rabbinical functions.

6 The above relies heavily on *London Landmarks, a guide with maps to places where Marx, Engels and Lenin lived and worked* (3rd edn, London: Communist Party of Great Britain, 1963) and which the author, while living in London in 1963–5, used for finding Marx's residences still in existence.

7 In the afterword, Engels commented on Loria's defence against charges made by him [i.e. Engels] in the preface to volume III of *Capital*. This text can be quoted as follows:

> Somewhat later, the same gentleman 'well known through his fame' (to use Heine's phrase) also felt himself compelled to reply to my preface to Volume III – after it was published in Italian in the first number of *Rassegna* in 1895. The reply is printed in the *Riforma Sociale* of February 25, 1895. After having lavished upon me the inevitable (and therefore doubly repulsive) adulation, he states that he never thought of filching for himself Marx's credit for the materialist conception of history. He acknowledged it as early as 1885 – to wit, quite incidentally in a magazine article. But in return he passes over it in silence all the more stubbornly precisely where it is due, that is, in his book on the subject, where Marx is mentioned for the first time on page 129, and then merely in connection with small landed property in France. And now he bravely declares that Marx is not at all the originator of this theory; if Aristotle had not already suggested it, Harrington undoubtedly proclaimed it as early as 1656, and it had been developed by a Pleiad of historians, politicians, jurists and economists long before Marx. All of which is to be read in the French edition of Loria's book. In short, the perfect plagiarist. After I have made it impossible for him to brag any more with plagiarisms from Marx, he boldly maintains that Marx adorns himself with borrowed plumes just as he himself does. From my other attacks, Loria takes up the one that, according to him, Marx never planned to write a second or indeed a third volume of *Capital*. 'And now Engels replies triumphantly by throwing the second and third volumes at me … excellent! And I am so pleased with these volumes, to which I owe so much intellectual enjoyment, that never was a victory so dear as today this defeat is if it really is a defeat. But is it actually? Is it really true that Marx wrote, with the intention of publication, of his work and his system to these pages? Is it indeed certain that Marx would have published that chapter on the average rate of profit, in which the solution, promised for so many years, is reduced to the most dismal mystification, to the most vulgar playing with phrases? It is at least permissible to doubt it. … That proves, it seems to me, that Marx, after publishing his magnificent (*splendido*) book, did not intend to provide it with a successor, or else wanted to leave the completion of the gigantic work to his heirs, outside his own responsibility'.
>
> So it is written on p. 267. Heine could not speak any more contemptuously of his philistine German public than in the words: 'The author finally gets used to his public as if it were a reasonable being'. What must the illustrious Loria think his public is?
>
> In conclusion, another load of praise comes pouring down on my unlucky self. In this our Sganarelle puts himself on a par with Balaam, who came to curse but whose lips bubbled forth 'words of blessing and love' against his will. For the good Balaam was distinguished by the fact that he rode upon an ass that was more intelligent than its master. This time Balaam evidently left his ass at home.
>
> (Engels 1895: 870 n1)

References

Böhm-Bawerk, E. von (1896) *Karl Marx and the Close of His System*, New York: Augustus M. Kelley.

Communist Party of Great Britain (1963) *London Landmarks: A Guide with Maps to Places where Marx, Engels, and Lenin Lived and Worked*, 3rd edn, London: Farleigh Press.

Croce, B. (1914, 1966) *Historical Materialism and the Economics of Karl Marx*, London: Frank Cass.

Dobb, M. H. (1973) *Theories of Value and Distribution Since Adam Smith*, Cambridge: Cambridge University Press.
Edgeworth, F. Y. (1925) *Papers Relating to Political Economy*, vol. 3, London: Macmillan.
Engels, F. (1894) *Preface to Karl Marx (1894)*, Moscow: Foreign Languages Publishing House, 1959, 1–21.
——(1895) Supplement to vol. III of K. H. Marx, *Capital*, ed. F. Engels, Moscow: Foreign Languages Publishing House, 1959, 867–86.
Faucci, R. (1978) *Revisione del Marxismo e teoria economica della proprietà in Italia, 1880–1900*, in A. Loria egli altri, *Quaderi fiòrentina per la storia del pensiero giuridico moderno*, 5–6, 176–7, 587–680.
Faucci, R. and Perri, S. (1995) 'Socialism and Marginalism in Italy, 1880–1910', in Ian Steedman (ed.) *Socialism and Marginalism in Economics*, London: Routledge, 116–69.
Howard, M. C. and King, J. E. (1989) *A History of Marxian Economics, vol. I: 1883–1929*, London: Macmillan.
Labriola, A. (1908) *Essays on the Materialist Conception of History*, Chicago: Charles H. Kerr.
Lafargue, P. (1890) *The Evolution of Property*, London: Swann Sonnenschein.
Liebknecht, W. (1975) *Karl Marx: Biographical Memoir*, London: Journeyman Press.
Loria, A. (1910) *The Economic Foundations of Society*, trans. from the 2nd French edn by L. M. Keasbey, London: Swann Sonnenschein.
——(1920) *Karl Marx*, London: George Allen & Unwin.
McLellan, D. (1970) *Marx Before Marxism*, Harmondsworth: Pelican.
——(1973) *Karl Marx: His Life and Thought*, London: Macmillan.
Marx, K. H. (1859) *Contribution to the Critique of Political Economy*, Chicago: Charles H. Kerr, 1913.
——(1867) Capital, vol. I, Moscow: Foreign Languages Publishing House, 1959.
——(1867a) *Il Capitale*, libro I, Rome: Editore Riuniti, 1977.
——(1894) *Capital*, vol. III, ed. F. Engels, Moscow: Foreign Languages Publishing House, 1959.
Marx, K. H. and Engels, F. (1895) *The German Ideology*, Moscow: Progress Publishers, 1964.
——(1953) *Selected Correspondence*, Moscow: Foreign Languages Publishing House.
Meek, R. L. (1958) *Studies in the Labour Theory of Value*, London: Lawrence & Wishart.
Mehring, F. (1951) *Karl Marx: The Story of his Life*, London: George Allen & Unwin.
Schumpeter, J. A. (1954) *Economic Doctrine and Method*, trans. R. Aris, London: George Allen & Unwin.
Seligman, E. R. A. (1907) *The Economic Interpretation of History*, 2nd edn, New York: Columbia University Press.
Sweezy, P. (1949) *The Theory of Capitalist Development*, London: Dennis Dobson.

Part II

Nineteenth-century moderns

10 Neoclassical value and distribution theory

The English-speaking pioneers

A new economics of market prices and resource allocation was developed in several countries from the early 1870s. It is well known that, in England, that development was initiated by Jevons, consolidated by Marshall from the 1890s, and reinforced through the work of their colleagues, followers, or students: Wicksteed, Edgeworth, and Pigou in England, J. B. Clark and Irving Fisher in that other vast English-speaking world across the Atlantic. As Schumpeter (1954) pointed out, the key English figures in these developments are Jevons and Marshall, but this does not mean that the theoretical contributions to the new economics by the other leading figures in these developments on both sides of the Atlantic can be ignored. This is clearly demonstrated by the pioneering literature of this epoch in the history of economic thought. Stigler (1941), in his account of the formative period of the new production and distribution theory, only omits Pigou from his study, while Fisher, though not given a chapter of his own in the book, is mentioned as a prominent exponent of the new economics in the United States on a par with J. B. Clark. The other important specialist in early history of this period (Hutchison 1953) likewise acknowledges these economists as the great English-speaking contributors to this new, more rigorous form of economics that based itself on the application of a marginalist method to problems of choice and generalized price determination theory. The views expressed in these authoritative sources combined with Stigler's (1950) equally authoritative account of the development of utility theory form the point of departure from which to review more recent work on these 'English speaking' marginalist pioneers.

By way of further introduction, an adaptation of the table with which Stigler (1941: 11) introduced this subject matter is useful as a preliminary 'review of the troops' (see Table 10.1). This puts the *dramatis personae* of this chapter immediately into chronological perspective and, in addition, allows some initial generalisations and comment on their respective backgrounds.

With the exception of Wicksteed, the writers included here were academic economists for the greater part of their working life. For Jevons, this only eventuated after practice of a number of other quite distinct professions, and even then was combined with the teaching of other moral sciences and logic. All, however, had received a good university education, but only two had formally

Table 10.1 Reviewing the 'troops' of English-speaking 'marginalists'

Name	*Born*	*Died*	*Education*	*Major occupation*	*Appearance of major relevant work*[a]
Jevons, W. S.	1835	1882	University College London	Teaching Manchester, London	1871
Marshall, A.	1842	1924	Cambridge	Teaching Cambridge, Bristol	1890
Wicksteed, P. H.	1844	1927	University College London	Ministry, Lecturing	1894
Edgeworth, F. Y.	1845	1926	Trinity College Dublin, Oxford	Teaching Oxford	1881
Clark, J. B.	1847	1938	Brown, Amherst	Teaching Carleton, Amherst	1886
Fisher, I.	1867	1947	Yale	Teaching Columbia, Yale	1892
Pigou, A. C.	1877	1959	Cambridge	Teaching Cambridge	1912

Note:
[a] These works are: *Theory of Political Economy* (1871); *Principles of Economics* (1890); *An Essay on the Co-ordination of the Laws of Distribution* (1894); *Mathematical Psychics: An Essay on the Application of Mathematics to the Moral Sciences* (1881); *The Philosophy of Wealth: Economic Principles Newly Formulated* (1886); *Mathematical Investigation in the Theory of Value and Price* (1892); *Wealth and Welfare* (1912).

studied political economy at university. Jevons had done so for his B.A. degree; Pigou, while taking the second part of the Moral Sciences Tripos after completing Part I of the History Tripos. Two (Marshall and Fisher) had concentrated on mathematics in their university studies; two (Wicksteed and Edgeworth) on languages and classics, and one followed up his first general degree with postgraduate studies in Germany in historical economics (Clark). These pioneers conform therefore to the pattern of professionalisation in economics which Schumpeter (1954) and other scholars have associated with this period, and which is mentioned later in this chapter.

It may be noted at the outset that none of these seven authors specialised narrowly on topics in value and distribution, and that few (Marshall being the major exception)[1] concentrated exclusively on economics. Jevons, it is well known, published widely both within theoretical and applied economics, in logic and scientific method. Particularly during his early years, Jevons wrote on subjects as diverse as meteorology, statistics of Shakespearean literature, astronomy, and wider social issues (the social cesspools of Sydney, New South Wales; new facts concerning the interior of Australia; amusements of the people;

cruelty to animals), some of which reveal his lasting interest in matters Australian.[2] Edgeworth wrote on ethics and utilitarianism in addition to his very substantial contributions to mathematical and economic statistics and economic theory (Creedy 1986a: esp. 9–11, 153–4). Wicksteed, as Steedman (1987a: 915) indicates, was an accomplished linguist, philosopher, and classical scholar. He produced work on Dante, Aquinas, Ibsen, and many theological pieces in addition to his work on economics which concentrated on value and distribution theory. The two Americans also contributed to areas outside economics. J. B. Clark followed his work on value and distribution with applied studies on the control of trusts and monopolies before devoting his energies to the international peace movement and studies of war and militarism in an international setting (J. M. Clark 1952: 396–7). Irving Fisher's massive bibliography of nearly 2,500 entries (Fisher 1961) covers many economic topics combined with writings on health, peace and prohibition, mathematics, mechanics, astronomy and mathematical statistics. Last but not least, Pigou not only contributed to the 'whole field of economics' but his books include studies on theism and Robert Browning (Datta 1959: 4, n1), while like Clark and Fisher he had also been an active pacifist during the First World War (Collard 1981: 108).

The degree of commentary that has been published on these authors varies enormously. Marshall, in this respect followed by Jevons, has undoubtedly received the most extensive treatment in the literature. Papers devoted to their work have been collected in the series devoted to important economists edited by John Wood (1982; 1988). On the other hand, what post-1950 material there is on Pigou, Fisher and J. B. Clark is largely directed to issues not immediately concerned with their contributions to value and distribution theory, though it may also be noted here that some work of these two Americans was criticised during the Cambridge controversies in capital theory of the 1950s and 1960s. Finally, Edgeworth and Wicksteed have been virtually ignored in the literature, and only recently has their economics been re-examined, in both cases largely through the work of one person: John Creedy and Ian Steedman respectively. Stigler's quantitative study of citations (Stigler 1979: esp. 181–4) for 1886–1925 and 1925–69 may also be usefully mentioned in this context. Fisher, Clark, Marshall and Edgeworth were frequently cited during the first period; Fisher, Marshall and Pigou during the second. Hence only Marshall as an economist whose major work was done before 1900 survived the second citation test. Fisher, on the other hand, was the only economist of the seven who published major work in both centuries.

The framework for surveying this substantial quantity of material on early English-American neoclassical economics is as follows. First, biographical and bibliographical material is discussed in order to highlight the new work done in these areas, especially with respect to Jevons and Marshall. This is followed by more specific, and selective, evaluations of the more important commentary on their economics, essentially to emphasise changes in, and the dynamics of, interpretation of these neoclassical pioneers. A final section provides conclusions largely devoted to more general perspectives on this period in the history of economics in the English-speaking world.

Biographical foundations

Despite controversy over the role of biography in the history of economic thought (see for example Jaffé 1965; Stigler 1976), considerable biographical work continues to be done on economists, in varying ways illuminating the development of theory. Hence biographical material needs to be considered an important part of the literature on the economists of the early neoclassical period, particularly since it has been used for interpreting various aspects of their work and its development. Some examples of this are given subsequently. First, however, it may be noted that three of the economists featured in this chapter had their lives essayed by J. M. Keynes (1972): Marshall in 1924, Edgeworth in 1926 (both initially as obituaries), and Jevons in 1936 as a centenary allocution. Furthermore, Schumpeter (1952) sketched Marshall and Fisher with equal acumen as examples of his ten great economists. Second, while biographies have appeared of Wicksteed (Herford 1931), Fisher (I. N. Fisher 1956) and Jevons (Könekamp 1972), Marshall, Edgeworth, Clark and Pigou still await their biographers.[3] In addition, only Jevons' correspondence has been systematically collected and published (Black 1972–81: II–V) though it may be noted with pleasure that Marshall's collected correspondence, edited by John Whitaker, is well on the way to publication and, like the Jevons project, supported by the Royal Economic Society.

In the context of this chapter, detailed biographical material is particularly relevant to settling disputes about the origins of the marginal revolution, hence enhancing understanding of the precise nature of changes in economic thinking at the end of the nineteenth century which transformed economic theory in the opening of the next. Jaffé (1965: 229–31), for example, has illuminated aspects of Walras' economics by his biographical discoveries. The wealth of biographical data unearthed for Jevons and, increasingly, Marshall has done the same for those English pioneers. Examples include the usefulness of such data for assessing the validity of a recent hypothesis (Mirowski 1984) on the association between a branch of energy physics and some key propositions of the new marginalist economics. Similarly, publication of Jevons' private journal, diaries and correspondence has sparked renewed, and continuing, controversy about the early influences on Jevons' economics (see, for example, White 1982; 1984; Hutchison 1982) and the manner in which he came to develop his reconstruction of political economy on marginalist and mathematical lines. Similar work can still be fruitfully done on Marshall. Apart from Keynes' account (1972: 165–74) and its critical development by Whitaker (1975: 5–10), very little is available on the details of, and reasons for, Marshall's shift to the study of economics in the late 1860s. An intriguing aspect of this shift is the role therein of Cournot's work, more widely available and known than histories of the marginal revolution often assume. Biographical data on Marshall disclose his familiarity with Cournot almost a decade before Jevons claimed to have become familiar with it, while Todhunter's query to which Jevons referred in this context raises intriguing questions about the degree of conversational intercourse on such matters at Cambridge.[4] Marshall's early acquaintance with

Cournot helps to explain how easy it was for a mathematician to convert Mill's view on the subject into a geometrical supply and demand analysis, without necessarily using 'utility' underpinnings.

With two exceptions, the role of biography in illuminating aspects of the marginal revolution cannot be further pursued here. Where relevant, it is raised in the individual treatments of the various authors. The first exception to this is that biography reminds of the close personal ties that existed between the seven authors considered here, despite the geographical distances involved. Marshall, for example, was acquainted either personally or through correspondence with all of the other six; the same can be said of Edgeworth, and only Jevons' early death prevented him from forming contacts with the younger generation of Pigou, Fisher and Clark. The enormous correspondence of Walras supports the view of the tight-knit nature of the intercourse among the economic academic community at the time. Second, it may be noted that all longer studies of the economists studied here present some biographical material of their subjects, an indication that for their authors this remains either a useful aspect of their subject matter or, sometimes more strongly, an indispensible aid to understanding their subject's views.

William Stanley Jevons (1835–82)

Jevons research has greatly benefited from the symposia organised for a number of important anniversaries associated with his life and work and frequently published in the *Manchester School*. The more important were the centenary of the publication of his *Theory of Political Economy* and the earlier anniversary of *A Brief Account of a General Mathematical Theory of Political Economy*. In addition, the centenary of his death, as had earlier been the case with that of his birth, induced significant contributions. These have tended to concentrate on assessments of Jevons' work in general, and have less frequently focused on more detailed aspects of his theoretical work. The theory of capital is one such instance, aspects of his theory of demand another, and it is on these that this section largely concentrates.[5]

Unlike the treatment of Jevons' capital theory by Keynes (1972: 132), Robbins (1936: 317–20) and Stigler (1941: 26–9), Steedman (1972) concentrated on analysing the internal coherence of Jevons' theory on the basis of its final presentation in the second edition of the *Theory*. Four issues are raised, all concerning criticisms associated with the Cambridge controversies in the theory of capital. The first concerns definitions of the 'amount of capital' and the 'amount of investment' where reminders are given that 'neither the physical composition of free capital nor the amount of investment can be known independently of relative prices and hence of the interest rate' (Steedman 1972: 33, 35). The second part shows, as earlier demonstrated in Garegnani (1960: 38–9, 61–5), that the average period of production depends for its meaning on the amount of capital and the amount of investment, and has little operational use apart from situations of simple interest (cf. Lutz 1967: esp. 18–21) and when no

fixed capital considerations are involved. Fixedness is defined for this purpose in terms of the continuous output case and not in terms of construction periods and durability. The third section then demonstrates that Jevons' theory is a very special case, not only because it deals with the point input-point output case but, more important, because it unwittingly assumes a non-commodity world. In short, 'Jevons's theory provides no explanation of the level of the rate of interest; it follows that it fails to determine wages, prices or quantities' and from the fact his theory has been called the point of departure for Böhm-Bawerk and Wicksell, that it is 'Jevons rather than Ricardo who shunted the car of Economic Science onto a wrong line' (Steedman 1972: 48, cf. 1). Hence the capital theory hailed as innovative by Robbins is now shown to be wrong, and the 'most interesting of the later chapters' (Hutchison 1953: 45) has turned out to be the one most logically unsound. Such are the paradoxes of intellectual history.[6]

Just as devastating, but in some ways more intensive, has been the debate about Jevons' contributions to demand theory. It is well known that this was never fully developed in his *Theory of Political Economy* (see Stigler 1950: 88–9, 90) and it seems not unfair to argue that it was not really developed very far at all (Blaug 1964: 283). Claims, dating back to Keynes' (1912) review of the fourth edition of Jevons' *Theory*, that Jevons had used demand functions in his lecture notes, have been shown to be misleading (Black and Könekamp 1972–81: VI, x, 15–17, 84–9; cf. Keynes 1972: 138, n2). A recent paper by Bostaph and Shieh (1987) criticises this proposition, while Creedy (1986b) has shown that Jevons did attempt to specify a functional demand form based on the famous King-Davenant 'law of demand'. Associated with this debate has been controversy about the precise origins of Jevons' demand and utility theory. These have often been attributed to debates on railway economy in which Jevons had become interested during his Australian sojourn (1854–9).

The matter of Jevons' use of demand curves in his lectures can be examined first. It is clear that the lecture note discussion (Black and Könekamp 1972–81: VI, 14–17), to which Bostaph and Shieh (1987: 109–11) refer, derives largely from discussion in the *Theory of Political Economy* (Jevons 1910: 146–59) on numerical determination of the laws of utility and the usefulness for that purpose of the King-Davenant law of demand. The curves presented in the lectures do not have their axes marked, but one is described explicitly as expressing utility while the other is designed to show the influence on price of variations in supply when price is the dependent variable. However, the second curve, although explicitly drawn to express utility, can be implicitly linked to demand from Jevons' statement contrasting sugar with corn, where people 'will take a greater quantity of it if they can get it at a moderate price' (Black and Könekamp 1972–81: VI, 16). The context of the lecture, starting as it does with an examination of Banfield's hierarchy of wants, suggests that Jevons' concern in it was to illustrate the different nature of wants by contrasting luxuries (sugar) with necessities (corn).

From their association with Jevons' discussion of numerical estimates of utility and the King-Davenant law of demand, can these functions be inter-

preted as empirical determinations of demand functions as Creedy (1986b: 198) and Bostaph and Shieh (1987: 117–19) suggest? The ingeniousness of Jevons' attempts in this direction was already noted by Stigler (1950: 88–9), and there can be no doubt that Jevons made such attempts at empirical estimation of price laws. In the posthumous *Principles*, Jevons (1905: ch. XXXV) himself drew attention to the importance of this type of work, though he also recognised its many difficulties, in particular the inevitable changes of tastes over the long periods for which in the early 1860s he had gathered his price data. In addition, Jevons (1905: 147–8) commented on the complexities of the interactions of prices on demand that made empirical investigation of price laws even more difficult.[7]

Not unrelated to this renewed interest in Jevons' demand and utility theory is a current debate on its origins. Hutchison (1953: 35–6), perhaps following La Nauze (1949; 1953), saw 1857 as the crucial year in Jevons' economic development. It was then that he first started devoting a substantial part of his time to the study of the subject, that he read Lardner's *Railway Economy* and wrote his first articles and letters critical of New South Wales land development and railway policy. His interest in utility economics and supply and demand theory, Hutchison infers, derived from a direct interest in real-world problems, in common with other pioneers of marginalism like Dupuit, Lardner, Ellet and Launhardt (Hutchison 1982: 367–8). In a reassessment of Jevons in Australia, White (1982: 32–3) casts the net wider. White suggests that Jevons' basic premises for the study of political economy were also influenced by Pell and Woolley, two foundation professors of the University of Sydney and, on particular matters, by reading Whateley's lectures on political economy which was also part of his 1857 study of the subject. This has induced debate on the significance for Jevons' economics of his Antipodean interlude in which some have defended the role of Lardner (Bostaph and Shieh 1986), while Hutchison (1982: 376–7) has criticised the wider inferences White derived from additional influences on Jevons he identified during Jevons' Australian sojourn. Needless to say, investigations of this type have been greatly facilitated by the splendid collection of previously unpublished Jevons material in the edition of Black and Könekamp (1972–81).

White's contribution shows that much of the foundations of Jevons' theory of price determination, competition, and its application to social welfare and government intervention, basically originated in the context of the railway debates, but that Pell's contributions may here have been more important than previously thought.[8] The Woolley and Whateley influence, on the other hand, White relates to Jevons' development of some utilitarian propositions. These concern competition's role in promoting the 'greatest happiness' by 'maximising wealth' and the perception of man as a pleasure maximising, pain-minimising, calculating machine. White's line of investigation contrasts with Black's (1972: 123) remark that while Jevons was beginning to read political economy in Australia, 'he does not seem to have paid much attention to philosophy, and none at all to Bentham'. This was undoubtedly a useful inference for combating

the 'half-truth' of making the 'simple hedonism' of Bentham the foundation of Jevons' work. However, it ignores the implications of Jevons' father's strong advice that Jevons seek the company of all three professors of the newly founded University of Sydney (1 April 1855, in Black and Könekamp 1972–81: II, 136, n2), while in addition it confounds the wider meaning the nineteenth century gave to philosophy.[9]

The Pell material has already been exhaustively discussed in the literature (White 1982; Goodwin 1966: 286–91) and needs no further comment here. The case is different for Woolley's lectures. These dealt with moral philosophy intertwined with observations on political economy and its uses, a subject incidentally in which Woolley was very interested and 'touched on … in his university work on several occasions' (Goodwin 1966: 546). Two of these lectures, given in 1855 and 1856, are particularly important. The first dealt with 'social difficulties', was originally published in the *Sydney University Magazine* for April 1855, and combined observations of Dickens' *Hard Times* with a discussion of the 'drink question' and the master and servant's act. The second, entitled 'The Selfish Theory of Morals', was attended by Jevons and commented on in detail in his journal (Black and Könekamp 1972–81: I, 27–8, 132–4). This provides the basis for White's conjecture of a Woolley influence on the formation of Jevons' 'hedonism', as earlier had been suggested by Könekamp (1972: 27–8). Both the lecture and Jevons' comments on it show that philosophical speculations on hedonism were readily available in the colonial Sydney of the 1850s, and that these had attracted the attention of the young Jevons.

The 1855 lecture has not been commented on before in connection with Jevons. In some respects it is more interesting because part of its contents emphasise the social utility of developing and diffusing sound principles of political economy, a subject in which Woolley had practical interests. Two reasons are advanced in support of this social role for political economy. First, economic principles and their diffusion were essential to social health because 'unrighteous and obtrusive Governments … sooner or later *violate the principles of Political Economy*' and hence preservation of freedom requires their wide knowledge. Second, political economy can remove the 'jealousy' between rich and poor, by ascertaining and fixing 'the relations of capital and labour upon a scientific basis', and in this way not only prevent the creation of 'two antagonistic nations' but, at a more immediately useful level, prevent strikes and other 'conflicts between employers and employed which still shake to its centre our manufacturing prosperity' by ensuring these 'principles are properly understood and made known' (Woolley 1862: 128–31). There is no record that Jevons heard the delivery of this lecture, but the fact that he later offered copies (for 1857 to 1859 only) of the *Sydney University Magazine* to the chief librarian of the British Museum (Black and Könekamp 1972–81: II, 449) shows that more than likely he had had access to it at the time. In fact, in his review of Hearn's *Plutology* Jevons praised Woolley's essay (Woolley 1862) as 'a collection of scholarly essays' (La Nauze 1941: 256). Other actions also show that the sentiments in these lectures – including their praises of free trade, harmony, and the

moral impossibility for the social existence of a 'true separation of interests' (Woolley 1862: 102, 104, 114, 129) – would not have been uncongenial to him at the time, though his final publication, *The State in Relation to Labour*, is highly critical of laissez-faire. They may also explain the subsequent interest in Whateley's introductory lectures with their similar sentiments (to which he may even have been referred by Woolley) and his advice on economics to his sister in letters from the first half of 1857 (Black and Könekamp 1972–81: II, 276–7, 292). My reading of the evidence on Jevons' Australian interlude suggests that he benefited from his acquaintance with the University of Sydney's three foundation professors in different ways, and that his father's advice to seek their company paid diverse dividends.

The matters associated with Jevons surveyed here show the enormous value of the Jevons material recently published (Black and Könekamp 1972–81), not only for raising and sometimes settling questions of origins but also for shedding new light on technical matters. Few final conclusions are as yet possible on issues raised here on the origins and practice of Jevons on demand and utility. It can, however, be safely asserted that some of the earlier suppositions on this can no longer be sustained. Likewise interpretations of Jevons' theory of capital have to be modified from the findings of the 1960s capital controversies. None of this detracts, of course, from the accolade of genius so often bestowed on Jevons, nor from the conclusion offered by the Jevons scholar of the century that Jevons 'made innovations which have proved of lasting significance' (Black 1981: 29).

Alfred Marshall (1842–1924)

As befits the undoubtedly key figure in the development of the marginal revolution in the English-speaking world, the economics of Alfred Marshall continues to attract extensive attention, despite the enormous literature available on this subject before the early 1950s. A number of strands in this voluminous Marshall literature of the period can be distinguished. The first relates to continuing controversy about key concepts in Marshall's economics, including its method. The second is associated with investigations of the wider significance of Marshall's work for the professionalisation and institutionalisation of economics from the end of the nineteenth century onward. Third, and in some respects the more important because it is the more novel, there have been re-evaluations of Marshall's work in the light of what has become known about activities of the 'young' Marshall,[10] a task greatly facilitated by the publication of many of Marshall's early writings (Whitaker 1975; also Harrison 1963; Stigler 1969). This has induced some detailed investigation and subsequently new light on the origins, sources, and especially the contents of pre-*Principles* Marshall.

A recent survey of Marshall's economics (O'Brien 1981: 63) concludes that 'most of the literature on Marshall's economic writings concentrates upon minutiae', adding that this is inappropriate for the present generation of economists. These all can learn much from an overall perspective of the work of

an economist who invariably attempted to 'produce a balanced overall picture of the economic system with due weight given to historical and institutional factors'. Reisman's (1986) study of the economics of Marshall provides an overall picture of the *core* of Marshallian economics – the system of determining normal prices in the long run by means of an apparatus of supply and demand – and which thereby attempts that merging of the theory of value and growth which some (e.g. Whitaker 1974; Dardi 1984) have seen as characteristic of the work of the young Marshall. The implicit shift toward examination of Marshall's method that this implies, and its identification as the more important Marshall legacy for current-generation economists, contrasts strongly with the examination of Marshall by Stigler (1941), with its emphasis on Marshall's theoretical contributions and Samuelson's (1967a) complaint that 'the ambiguities of Alfred Marshall paralysed the best brains in the Anglo-Saxon branch of our profession for three decades' because of non-rigorous distinctions between perfect and less-than-perfect competition and an intentional fuzziness that is both confusing and confused. Hutchison's (1953: ch. 4) evaluation by contrast is more cautious and considerably more balanced than his more recent evaluation of the Cambridge school that Marshall helped to found (Hutchison 1981: ch. 3, esp. 51–6). Perhaps this is because Hutchison's stress on method is more in harmony with the times than Stigler's rigorous (and still very instructive) attempt to examine the marginalist credentials of one of his heroes by an intentional concentration on Marshall's theoretical lapses from this task (Stigler 1941: 61–2).

O'Brien's 'minutiae', not to be taken pejoratively in this context, are reflected in a still very considerable literature devoted to specific aspects of Marshall's economics. Examples are the many articles on issues raised in Friedman's (1949) controversial interpretation of the Marshallian demand curve, particularly aspects associated with the meaning to be given to the constancy of marginal utility of money assumption and the role of income effects in Marshall's demand theory. More recently this has sparked renewed investigation of the origins of Giffen's 'hint' in Marshall and its purposes (Dooley 1985; White 1987a; 1987b). In addition, articles have been directed at elucidating other features of Marshall's system such as the labour supply curve, notions of competition, consumer surplus, the representative firm, and the theory of the firm in general.[11] More wide-ranging are a series of classical reviews of Marshall's theory of value. These include Frisch's (1950) survey, and studies by Newman (1960) and Loasby (1978) questioning the proposition that modern microeconomics has appropriated all that is worthwhile from Marshall's economics, leaving only the analytical errors. They also bemoan the fact that problems of time in the theory of value have been the major victim of this practice, together with a neglect in analysing competitive processes. Loasby further illustrates this by showing the disappearance of a general link between value and growth and the neglect of the importance of expectations and information in modern theories of the competitive firm (within oligopolistic competition rather than perfect or imperfect competition). This implicit challenge has

elicited various responses. Examples are Williams' (1978; 1986) analysis of Marshall's contribution to the emergence of a theory of the firm, and his reconstruction of Marshall's temporary equilibrium pricing process. Aspects of the laws of returns have been revisited by Levine (1980), Negishi's (1985) rehabilitation of Marshall's life-cycle of firms theory, and Sylos Labini's (1985) review of the Sraffian critique of Marshallian price theory. More generally, Boland (1982) has surveyed the difficulties Marshall raised through the element of time, so often ignored in modern economic discussion.

The reviews of Marshall's theory of value, and the criticism of conventional views of Marshallian economics to which they have led, introduce the concern with methodological issues in the recent Marshall literature. Two aspects stand out. One is the transformation of Marshall's stylistic predelictions for imprecision and qualification into a virtue because it highlights the fact that economics is essentially an imprecise subject (Shackle, introduction to Reisman 1986). Another is a renewed interest in assessing the value of Marshall's pleas for economic biology in preference to the economic mechanics he so often practised in the *Principles* (Moss 1982; Levine 1983; Reisman 1987: ch. 7). These include some interesting observations on the mathematics of evolution in terms of Taylor's theorem as practiced by Marshall (1961: mathematical note XI). Such methodological discussions are also presented in re-examinations of Marshall's classical antecedents (e.g. Levine 1982), particularly noticeable in Marshall's early work with its emphasis on value and growth, and not completely suppressed in the 'mature' Marshall (cf. O'Brien 1981: 51–2).

A second type of Marshall studies that can be identified concerns his contributions to the professionalisation and institutionalisation of economics, which go a long way to explain the consolidation of the marginal revolution in its Marshallian variant in the English-speaking world. Part of Marshall's contribution came from his role in establishing the Royal Economic Society and the *Economic Journal*, both vehicles for the dissemination of sound economic ideas (Coats 1968), and perhaps some of the most significant events in the history of economics at the end of the nineteenth century. Another is Marshall's role in establishing the Cambridge Tripos and his direction and control of the Cambridge School in its formative period (Coats 1967; Hutchison 1981: ch. 3; Groenewegen 1988), a theme that has been treated by Maloney (1985) and, from a different perspective, by Winch and Collini (1983). Maloney (1985: 3) in particular shows how Marshall's objectives for economics in the universities – that is, training in a specialised body of theory, a defined monopoly over a specialised function or functions, and the development of a professional ethics – match his sociological notion of professionalisation, visible in the actual developments taking place in English economics at the turn of the century. Like Stigler (1986: 372) I would give greater emphasis than Maloney to the move of economics into the universities during this period, as reflected in the career paths of the seven economists surveyed here. This aspect of the marginal revolution was rightly stressed by Schumpeter (1954: e.g. 829–40) and partly studied by Hutchison (1953) with respect to Marshall.

The most interesting Marshall work since the 1950s has been associated with the rediscovery of the young Marshall, whose original visage was invariably based on the rather selective picture[12] presented in Pigou's *Memorials* (1925) supplemented by the more daunting official papers edited by Keynes (1926). This rediscovery owes much to the publication by Whitaker (1975) of many of the early papers preserved in the Marshall Library, and his detailed analytical work on their contents. Both have opened up a wide variety of new issues on the sources, origins, and interpretation of Marshall's economics. Historical evaluation of the development of Marshall's economics was also assisted by publication of the variorum edition of Marshall's *Principles* (Guillebaud 1961) with its painstaking, though sadly incomplete and sometimes defective (see Stigler 1962: 233–4) analysis of textual changes from 1890 to 1920. The enormity of this task can only be appreciated by contemplating, for example, the massive changes in layout Marshall prepared for the fifth edition. Regrettably there is as yet no reprint of Marshall and Marshall (1879), the book A. Marshall suppressed and that now seems only readily available in an Italian translation (Robertson 1976: 448–51).

The most important of Whitaker's interpretative studies published so far are his presentation of Marshall's 1881 system as a system of distribution and growth (Whitaker 1974), his general analysis of the distribution theory in Marshall's *Principles* (Whitaker 1987), and that of the emergence of Marshall's period analysis from the early 1870s (Whitaker 1982). The first presents what Chakravarty (1982: 8–12) has called the Millian foundations of Marshallian growth and distribution theory, based on the transformation into differential equations of Marshall's favorite book from Mill's *Principles* (Book IV on the influence of the progress of society on production and distribution) as he wrote later to J. B. Clark (2/7/1900 in Pigou 1925: 412–13). Marshall's growth and distribution theory, despite its seemingly classical antecedents, implied the abandonment of three classical perspectives, as Chakravarty has also shown (1982: 8). First, he abandoned the classical notion of surplus as the source of accumulation (only lip service is paid to it in the *Principles*: for example, Marshall 1961: 504–5). Second, he neglected the discontinuities and irreversibilities so crucial to understanding real growth processes (though aspects are preserved in Appendix H of the *Principles*). Finally, he replaced the classical theory of value by a fully fledged relative price theory in terms of supply and demand analysis (cf. Bharadwaj 1978a: 32–5). This is unambiguously indicated in Whitaker's presentation (1974: 3–6), which also illustrates the view that in 1881 Marshall advanced a marginal productivity theory of distribution for the first time since Longfield and Butt (Stigler 1941: 344). The growth and distribution theory illustrates one aspect of Marshall's use of the Millian inheritance.

A second aspect of this Millian legacy is very clearly present in Marshall's early manuscript on value dated around 1870, which makes Marshall's 'radical and systematic departure from Ricardo' perfectly clear (Bharadwaj 1978b: 601). The four value situations analysed by Marshall are all supply-and-demand oriented, thereby substantively altering the explanatory basis for natural prices

presented in the classical literature (Bharadwaj 1978b: 615). Bharadwaj's paper (1978b: 619–20), and the perspectives given on Marshall's early work by Whitaker (1975: 44–7) also allow a more or less definite conclusion that Marshall's basic ideas on value and distribution owed little to Jevons (cf. Walker 1985: 171), while they emphasise the importance of Cournot and Mill in that development.[13]

An alternative reading points to the other type of inference that can be made from studying the young Marshall. This emphasises his antipathy to the marginalists' critique of the classics and his divergence from many purist marginalist perspectives. Such a reading is given in Dardi's (1984) important study, which places the origins of Marshall's economics firmly in the debates about the wages fund doctrine at their height during the late 1860s when Marshall resolved to become an economist. This wages fund controversy background meant that Marshall came to grips with problems of accumulation and distribution at the outset and that he had to find solutions to the difficulties in supply and demand analysis which that controversy disclosed. Hence, as Dardi (1984: 119) points out, Marshall considered his task as involving an integration of matters of pure theory (the analytical supply/demand apparatus he was developing with the aid of Cournot, Jenkin, and his mathematics) and the classical theory, if he was to successfully remove conundra associated with Mill's eclectic treatment. As Whitaker (1982) has also demonstrated, time analysis in this context of value and distribution theory came therefore naturally to the young Marshall as a problem to be solved. The tools for this were developed at an early stage, and traces of these dynamic considerations never disappeared from the pages of the *Principles*, particularly those devoted to the treatment of distribution. Whether this is a strength in Marshall's economics (Reisman 1986) or a weakness (Stigler 1941: e.g. 63, 83) remains debatable, if only because it relies on positions regarding the purpose of economic theory. It does, however, illustrate the need to set Marshall apart in some way from marginalist economics, as Dobb (1931: 368–71) had already done in his characterisation of the Cambridge school.

In this respect, as in some others, Marshall remains an enigma. A part of the 'marginalist revolution' by virtue of this support of many of its fundamental principles, he also diverged from its aims in significant ways. Examples are the emphasis on dynamics even when inconsistent with the demands of rigorous static theory (for examples see Stigler 1941: 68–76), his distrust of simple equilibrium statements, and, above all, his growing awareness of the difficulties in applying the new doctrines, particularly his favourite, consumer surplus. Some of this is explicable in terms of the formative influences on Marshall's thought when he turned to economics during the second half of the 1860s. Whitaker (1977: 478) has summarised some of these as

> a heady but turgid mixture of German Idealism, Spencerean evolutionism, and utilitarianism, the latter derived from a close reading of Bentham and Mill and from the personal influence of Sidgwick, a mixture to which he

was introduced as a young graduate through his participation in the stimulating discussion at the Grote Club.

When this is combined with the specific early influences on his economics – J. S. Mill, Cournot, and the background to the wages fund controversy – then at least some of Marshall's peculiarities can be explained. Others derive from his insatiable urge to be realistic and understood by businessmen. Furthermore, the breadth of Marshall's concerns in economics as a moral science stand out starkly against more narrow perspectives of some of the English contemporaries and in some respects those of his immediate successor to the Cambridge chair.

Philip Henry Wicksteed (1844–1927)

Wicksteed's work is in sharp contrast with Marshall's ambiguous attitude to the new economics. Wicksteed's unwavering support of the validity of the marginalist principles as he had critically derived them from Jevons earned him the distinction of being described as the 'purist' of marginalist theory (Sraffa 1960: v). Basically independent of Marshall's economics, Wicksteed rejected much of what Marshall viewed as crucial components of the theory of economics (for example, the supply curve) and greatly disliked the many 'classical' trappings remaining in the Marshallian system (Wicksteed 1913). There is another contrast between Marshall and Wicksteed relevant to this survey. Wicksteed has been substantially ignored in the literature. Schumpeter (1954: 831–2), for example, pointed to the fact that only Stigler (1941: 323–35) had realised the true worth of Wicksteed's (1894) seminal contribution to distribution theory, that few economists appreciated the originality of his *Common Sense* (Wicksteed 1910; 1933) and even fewer the brilliance of his observations on Jevons (Wicksteed 1889). Schumpeter would therefore have been delighted that Creedy (1986b) has repaired the third of these omissions, that Davidson and Meiners (1976) have rediscovered certain novel aspects of Wicksteed's *Common Sense*, and finally, that Steedman (1987b) has not only fully reviewed the contents and context of Wicksteed's *Co-ordination* (1894) but that he has recovered the complete Wicksteed. He has even compensated for Schumpeter's regret at inability to do full justice to Wicksteed's personality as 'it radiated upon' him in 1906 with its complex blend of qualified 'response', 'benevolence', 'simplicity', and 'modesty' (Schumpeter 1954: 831).[14]

Davidson and Meiners (1976) and Creedy (1986b) both deal with aspects of Wicksteed's price theory. The first suggest that Wicksteed's analysis is 'far closer to the position of many modern writers' because of his views on the unsatisfactory nature of a 'dual-decision mechanism'. Simultaneous determination by supply and demand made the price determination problem unduly complex in Wicksteed's view. Wicksteed's analysis based on fixed and inaugmentable supply, according to Davidson and Meiners, allows easier consideration of dynamic decision-making processes, presents price makers as the market norm,

while it resembles inventory-adjustment type models and anticipates current search and auction-market-type analysis.

Creedy's (1986b) analysis of Wicksteed's critique of Jevons' use of the King-Davenant demand data reveals some general features of Wicksteed's economic approach amid the technical details of this issue. It highlights Wicksteed's theoretical purity by emphasising his rejection of Jevons' (and Marshall's) device of allowing alternative uses of corn to be operative over the range of price variations to which the observations extend. Second, Wicksteed's ingrained common sense is illustrated from his critique of Jevons' depiction of the demand curve at very high and low prices. In addition, Creedy (1986b) reveals much about the seriousness with which Wicksteed held mathematics as a tool for economic investigation, and the limitations under which he worked in this respect.

Steedman's rich contributions to the meagre Wicksteed literature need to be savoured in themselves. Attention can be drawn to some highlights, largely from his introduction to Duckworth's proposed reissue of Wicksteed (1894). There he draws repeated attention to the fact that Wicksteed avoided arguments in terms of 'artificial aggregate factors', or that he used an aggregate form of the production function, as sometimes misleadingly claimed. In Wicksteed's attempts to include the rate of interest in the analysis, aggregate value capital is not necessary because the analysis is totally in terms of the individual maximising agent faced with given factor prices and a given rate of interest. However, this procedure induces some other slips. Wicksteed's presentation includes allocative peculiarities inherent in a thought experiment that uniformly applies doses of a variable factor to a fixed factor, and thereby implies uneconomic use of the fixed factor over certain ranges of the analysis. Finally, Steedman stresses that Wicksteed shows no signs of 'apologetic intent' in the development of his marginal productivity theory, a characteristic of his scientific probity also visible in his Jevonian critique of Marx (see Steedman 1988).

A further matter of interest in Wicksteed's economics is emphasised in Steedman (1986). This illustrates Wicksteed's concern with the principle of choice as the unifying principle of economics, permitting his association with certain modern perspectives on the scope of economics of the Virginia school, and undoubtedly explaining his great appeal to, and influence on, Robbins. Here is an important aspect of his Jevonian legacy, marking him as a true marginalist in his general economic philosophy. Steedman notes that, taken to its logical conclusion, Wicksteed's position implies no possibility of distinguishing between economic and non-economic behaviour, and that altruism therefore need not be reconciled with rational economic behaviour. In addition, his concessions to some lexical ordering make the principle of equating diminishing marginal significance less general than Wicksteed's overall stance suggests. Recent work on Wicksteed, together with Schumpeter's and Stigler's earlier opinions, suggest that Wicksteed is an economist whose writings can still be studied with profit, if only because they reveal the foundations of the new economics in all their simplicity and generality.

Francis Ysidro Edgeworth (1845–1926)

Edgeworth, like Wicksteed, has been totally eclipsed by Marshall's work. Only part of this can be attributed to the fact that Edgeworth wrote few books, and these all early in his career, while of his many scientific papers and reviews, including no less than 131 entries in the *Palgrave Dictionary of Economics*, only a relatively small proportion were gathered in his collected papers (Edgeworth 1925). Though containing interesting contributions to a wide variety of fields, this material is now virtually forgotten. His name is currently remembered from the Edgeworth box, his 'invention' of indifference curves, and his application of the 'indeterminacy' properties of isolated exchange to wage bargaining. As *the* linguist in English economics of this period (no mean feat when contending with Wicksteed, or even Marshall), he was also a major bridge, and sometimes an obstruction,[15] between European developments in economic theory, particularly in France and Italy, and those in England.

Edgeworth's contributions as a whole have been interpreted with clarity and wit in Creedy (1986a; a shorter version is Creedy 1981), which corrects past errors in interpretation and greatly expands knowledge about this fascinating economist. Stigler (1941) had already exhaustively discussed Edgeworth's contributions to production and distribution theory, and justly praised his contributions to utility and competition theory, in his well known critical evaluations of the development of these concepts. The 'modernity' of Edgeworth's *Mathematical Psychics* has since then been acknowledged by Samuelson (1974: 1279) in terms of his discussion of 'indifference contours, recontracting, supply and demand, contract curves and (deepest of all) the core'. As Edgeworth (1881: 1) explicitly indicates, much of this was inspired by Jevons' development of a calculus of pleasure and pain, and consequent explorative application of mathematics to the social sciences. In this introduction, Edgeworth reveals the psychological, ethical and philosophical foundations of his work, combined with an ambition to develop a social mechanics designed to rival celestial mechanics where maximum pleasure in the first, like maximum energy in the second, constitutes the general idea around which to build a mathematical psychics (Edgeworth 1881: 9–12). Edgeworth's work provides particularly clear illustration of the early association in England between marginalism and applied utilitarian ethics, an aspect of Edgeworth's work that Hutchison (1953: 108–14) singled out for evaluation and criticism.

Creedy (1986a) illuminates aspects of Edgeworth's work particularly relevant to the purpose of this survey. First, he (1986a: 23) stresses Edgeworth's early work on utilitarianism and argues its importance for 'a proper understanding of the later contributions'. Relevant for distinguishing him from Marshall,[16] Edgeworth strongly disliked Hegelian idealism (e.g. 1881: 97); but, like Marshall, he embraced 'evolutionism' and expressed a wish for its constructive merger with utilitarianism. Two further aspects of Creedy's discussion of this part of Edgeworth's thought need to be mentioned. First, his utilitarianism did not yield 'natural harmony' conclusions but stressed conflict; second, it was based on a considerable knowledge of experimental psychology, and his gener-

alised utility function derived directly from his knowledge of Fechner's work (Creedy 1986a: 27–9). Another feature of Creedy's evaluation (1986a: 82–4) is an emphasis on the contractarian aspects in Edgeworth's utilitarianism. Distributive justice, Creedy argues, needs to be interpreted in this context. Such features of *Mathematical Psychics* were subsequently largely ignored, all the more surprising when they also featured in Edgeworth's taxation economics. There the quid pro quo view of taxation was rejected because public expenditure and taxation decisions do not result from competitive exchange processes. A social contract between taxpayer and government is required to provide the necessary principle of tax justice.

Creedy's (1986a: 123–6) emphasis on the continuity in Edgeworth's work from the foundations provided by *Mathematical Psychics*[17] – with its contributions to the theory of contract, justice and distribution as a new justification for utilitarianism – allow him to remove a number of important misconceptions about the development and origins of marginalism in England. Most important is his argument on the fundamental role of utility and utilitarianism in early marginalism, contrary to the views of Schumpeter (1954: 830–1) and Hutchison (1953) and, more heretical, on its continuing role in applications of economic theory to subjects like taxation policy (Creedy 1986a: 128–30; cf. Roy 1984). Second, he points to criticism of dogmatic laissez-faire positions as a characteristic of Edgeworth and other early English marginalists; Edgeworth's belief that in practice a widespread tendency to indeterminacy existed formed the basis for his sceptical views on this (Creedy 1986a: 127–8). Finally, Creedy argues (130–2) that despite Edgeworth's linguistic proclivities, or perhaps because of them, the effective international flow of ideas was not nearly as great as may be presumed from the immense personal contact between leaders in the early development of marginalism. Perhaps because of the overwhelming dominance of Marshall, English economics sank into a period of 'unsplendid isolation' from the early twentieth century, and even ignored relevant contributions from American economists. In brief, Creedy's general differentiation of late Victorian marginalism from its modern counterpart is an important service of his study of Edgeworth, though like him, I fear that too many economists will leave the study of major writers of this period to specialist historians of economic thought.

John Bates Clark (1847–1938)

As Stigler (1941: 196–7) points out, 'Clark independently discovered both the marginal utility and the marginal productivity theories', and this is the basis for his claim to an important place in the history of economics. It is also the justification for his inclusion in this chapter. In addition, Stigler noted that at least until the end of the 1930s, 'continental economists' considered Clark's version 'to be *the* marginal productivity theory' and that Clark's 'naive productivity ethics', with its prescriptions combined with analysis, was a major disservice to economics. Schumpeter (1954: 868–70) is in substantial agreement with this

view, while Hutchison (1953: 253), in addition, emphasises the conversion in method that Clark is said to have experienced between publishing his first book (Clark 1886) and his more important theoretical contribution on distribution (Clark 1899). In his American Economic Association centenary paper on neoclassical theory in America, Tobin (1985: 29, 31–2) also makes these points. Not surprisingly, the conversion in method and the marginal productivity ethics are the issues in Clark's economics to which most discussion has been devoted, with the debate on marginal productivity largely confined to Clark's theory of capital and interest.

Samuelson (1962: 213–25, 233–4) brought J. B. Clark's capital and interest theory into the Cambridge controversies on capital theory with devastating results for the 'parables' derived from it. Their examination (Garegnani 1970) led directly to the reswitching results and identification as an unobtrusive postulate of the widely held inverse relationship between interest rates and capital intensity (Pasinetti 1969; Harcourt 1969: esp. 390–4). The simplified models derived from Clark's work, in terms of the aggregate production functions he perhaps unwittingly sponsored, were shown to be logically flawed, with similar consequences for their application to empirical work in analysing macrogrowth. Tobin's (1985: 31–2) appraisal of Clark mentions use of Clark's production model in macrogrowth theory but omits any reference to weaknesses disclosed by the capital controversies. With quite specific reference to J. B. Clark, these have been evaluated by Moss (1980: esp. 64–73) as marking the end of orthodox capital theory, and similar to the destruction of much Austrian capital theory by these arguments. Tobin (1985), however, raises the important question of how much of this analysis is actually attributable to Clark, but this does not obviate the fact that Clarkian parables and the productivity ethics based on them must now be relegated to errors from the past.

Clark's so-called methodological conversion, including its relationship with his marginal productivity views, has also been reviewed. Jalladeau (1975) investigated this precisely because of its association with the marginal revolution in America. By way of conclusion, Clark's aims are depicted as establishing 'economic ideas on a moral basis' from analytical foundations so strong that they would be unchallengeable. This is also seen as a sign of the 'gentle optimism' that fills the work 'of this tormented humanitarian and liberal theoretician' in developing a deductive, scientific approach to economics from his earlier descriptive, historical and morally speculative work (225–6). Henry (1982; 1983) has challenged notions of methodological conversion in Clark's work, and the associated view that he moved away from Ruskinesque socialism and criticism of capitalism. A methodological change, he contends, allows separation of what is called the purely scientific part of Clark's work, the marginal productivity theory, from its ethical features. Such a view underlies Schumpeter's argument that the technical features of Clark's argument can be easily separated from the normative part, leaving a value-free core of marginal productivity theory. Henry (1982: 167–8) posits contrary propositions: first, Clark was always 'pro-capitalist', the seemingly early criticism of capitalism

being really a manifestation of 'populism', and attacks on monopoly and ethics of the market in this vein are combined by the young Clark with criticisms of socialism. Second, Henry (1983) develops this theme by emphasising a connection between ethical and moral aspects of Clark's distribution theory with similar pro-capitalism motivation for Clark's early critique of classical economics and defence of marginalist principles. The foundation of Henry's argument – political preconception and *a priori* ethical positions are an indication of dubious theoretical pronouncements – cannot be sustained in my view; only logical argument and empirical data can indicate theoretical deficiency. As mentioned previously, some logical foundations of Clark's marginal productivity analysis as a theory of distribution were removed in the Cambridge capital controversies. However, for those interested in the origins of marginalism, it is clear that the foundations of Clark's economics require further discussion and evaluation than they have received so far (for example, Goodwin's [1972] useful study of marginalism's spread to the New World hardly deals with Clark's work). Such evaluations need also recall Clark's popularisation of the conception of a stationary economy, an important simplifying procedure for the new economics.

Irving Fisher (1867–1947)

By birth, Irving Fisher is the first of the two 'second-generation' marginalist economists included in this chapter, although, as shown in Table 10.1, his first book was produced within a decade of the publication of the major works of Marshall, Wicksteed, Edgeworth and Clark. He also was the only one of the seven who published major theoretical work in both the nineteenth and twentieth centuries. Schumpeter (1954: 871–2; cf. 1952: 224–7) rightly praised Fisher's first work (Fisher 1892) as a great classic in the new marginalist tradition: 'a masterly presentation of the Walrasian groundwork' with at least two important innovations. The first was Fisher's proposed method for measuring marginal utility; the second, similar to Edgeworth's work of a decade before, Fisher's independent development of a general utility function and his use of indifference curves. This affinity between the work of Fisher and Edgeworth undoubtedly explains why they got on so well together (Fisher 1956: 49–50, 92–4; cf. Creedy 1986a: 100). In addition, he enriched the literature of the new economics with a theory of interest that in many respects remains influential. It is therefore still discussed in general works on the subject like Lutz (1967) and Conard (1963). Fisher's monetary theory, which has received the greatest amount of attention in the post-1950s literature, is not discussed here. Space only allows brief treatment of some literature devoted to his capital and interest theory and his views on 'operational utility'. These topics were two of ten included among economic studies in the tradition of Irving Fisher published for the centenary of his birth, while emphasis on price theory and the analysis of capital and interest is likewise a feature of Tobin (1985).

Some of the recent interest in Fisher's capital theory can be explained by his apparent ability to sidestep the problem of defining a real capital magnitude

through concentrating on 'the terms of trade between today's and tomorrow's consumption as the objective counterpart of the rate of interest' (Samuelson 1967b: 18). Fisher's development of the Austrian theory as it had been left by Böhm-Bawerk is then identified as an analysis of the interaction of an impatience to spend with opportunities to invest to produce, as Samuelson put it (1967b: 29–30), a brilliant general equilibrium theory of interest in terms of supply and demand. In his concluding praise of the modernity of Fisher's theory, he makes a passing reference to reswitching, with the implication that Fisher's theory is immune from its otherwise devastating consequences (35, n13). Samuelson's comment was effectively challenged by Pasinetti (1969) which showed that switches of technique did affect the Fisherine notion of the rate of return, not as a tool for allocation decisions when all prices were known, but as a proxy underlying marginal productivity explanations on the 'opportunities for investment' side (Pasinetti 1969: 525, 529). This view has never been challenged but it may be noted, *pace* Professor Samuelson, that Fisher (1907: 252–3) had himself recognised the phenomenon of reswitching and, like Joan Robinson fifty years later, had described it as 'perverse' (see Velupillai 1975).

Another part of Fisher's economics that continues to draw attention is his theoretical work on utility measurement. Stigler (1950: 117–21) shows that Fisher (1892) demonstrated that the general utility functions he developed there, and which he preferred on theoretical grounds, made cardinal utility measurement virtually impossible. Fisher (1927) returned to the subject. By using independent utility functions, at least for important commodities like food and housing, he produced something concrete on utility measurement largely from a desire to apply such findings to arguments on the justice of the progressive income tax. Fellner (1967: esp. 59–69) has since then demonstrated that the Fisher-Frisch method (Frisch applied Fisher's theoretical work to actual measurement) can produce some interesting results in utility measurement, even though these results remain highly speculative. In addition, many of the obstacles to developing an operational utility identified by Fisher (1927) remain to be solved by future investigators (Fellner 1967: 74).

Arthur Cecil Pigou (1877–1959)

Pigou, the other second-generation marginalist economist to be considered in this chapter, was also Marshall's student in the full sense of the word, succeeding him to the chair at Cambridge in 1908 and holding it for the next forty years. Pigou was first in the first-class honours list of part II of the moral sciences tripos in 1900, after a first in the history tripos of 1899.[18] He commenced lecturing in 1901, became Girdler lecturer in the new economics tripos at Cambridge in 1904, and Professor at thirty-one in 1908. Schumpeter (1954: 833, 948) says relatively little about Pigou. He described him simply as the first major member of the Marshall school, as essentially an economic theorist but one who produced a detailed treatise on labor economics (Pigou 1905), much of which he subsequently developed in *Wealth and Welfare* (Pigou 1912),

the foundation for all of Pigou's later economics. Johnson (1978: 177), in fact, suggests that much of Pigou's working life can be seen as elaborating the superstructure of that book and strengthening its foundations, a position that Collard (1981) supports.

Apart from obituaries, little has been produced on Pigou's economics of relevance to this chapter. Post-1950s literature, when it has discussed Pigou, has dealt with his monetary theory, the Pigou effect, and other features of his 'macroeconomics'. Exceptions are Collard's (1981) survey, which now must be the starting point for all serious Pigou students, and some discussion related to his *Wealth and Welfare*. This includes Bharadwaj's (1972) reproduction and evaluation of Marshall's comments on that work, and the praise for Pigou's (1910) method of measuring price elasticities of demand (Deaton 1975) in which Pigou's linear relationship between price and income elasticities under additivity is described as 'Pigou's law'. Like Edgeworth, Pigou's *name* is therefore unlikely to be forgotten. However, his books are now largely unread, and the absence of serious Pigou criticism can be generally ascribed to the bad reputation he gained in accounts of the Keynesian revolution, particularly Keynes' own contemptuous dismissal of his work (cf. Collard 1981: esp. 107, 132–3, from which much of the argument in this and the next paragraph is taken).

Pigou (1905) on industrial peace is described by Collard (1981: 107) as a 'rather discursive work based on Sidgwick and Edgeworth with a collaborative appendix, on bargaining diagrams, with J. M. Keynes – an astonishing early collaboration'.[19] The book combines a basically utilitarian perspective in its analysis with an enormous amount of detail of the 'nuts and bolts of industrial peace'. This early work of Pigou is rarely discussed and sometimes not even included among his works (for example, Brahmanand 1959: 469). However, it seems important to understanding Pigou's work for at least two reasons. It is reminiscent of the strong applied utilitarian foundations of the Cambridge school (via Sidgwick but also Edgeworth) and reveals the strong practical interest at Cambridge in labour relations, particularly conciliation and arbitration as a means for settling industrial conflict. This is presumably why Hutchison (1953), after mentioning it, ignores it. As Johnson (1978: 177) also explains, this book forms the bridge, via a growing interest in unemployment, to Pigou's strong interest in developing welfare economics.

Pigou's *Wealth and Welfare* was respectfully dedicated to his master, Alfred Marshall. Collard (1981: 110) suggests a direct link with Marshall's *Principles* from Pigou's (1907) review of it which, among other things, emphasised the notion of the national dividend as the focus and kernel of economic theory. The national and social dividend definitely takes centre stage in *Wealth and Welfare*. Pigou discusses its composition, growth, measurement and distribution, as well as artificial impediments to its growth and its fluctuations. Collard also points to its Sidgwickian ancestry: both the distinction between social and private costs, and the associated externality concept, as well as its norms for distributive justice and identifying wealth with welfare, came from Sidgwick's *Principles* (1883: Book III). Bharadwaj (1972) has shown that Marshall was not

very impressed with Pigou's work in this area. Marshall's dissatisfaction came from its over-reliance on 'statical method' and, more particularly, from deficiencies in Pigou's use of the marginal supply price. In his critical notes, Marshall also emphasised the problem of time. He admitted he had himself largely ignored this with respect to demand analysis, but Pigou was now attempting to ignore it on the supply side as well, a far more unpardonable form of 'violence', as Marshall put it. Pigou's approach in the book, Bharadwaj (1972: 218) suggests, appears to have transformed Marshall's 'abberrations in the working of a competitive system' into Pigou's diagnosis of 'a general failure of the competitive system to achieve maximum welfare', hence turning qualifications of laissez-faire into a general critique. It can be said that with these developments, marginalism and its implications for social welfare started to turn full circle, because the hopes of early marginalists like Jevons of linking the new science with the benefits of competition for social welfare were beginning to be questioned more seriously by the subsequent generation of economists.

Conclusions

This survey of the literature on the early English marginalists suggests a number of conclusions. An obvious one is that on some of them much work remains to be done. As Creedy (1986b: 132–3) argued, such work needs to deepen the limited understanding of pioneers of neoclassical economics, and highlight the width of their inquiry as compared with the more narrow focus of mainstream economics. Such differentiation of the pioneers from more modern views needs also to pay attention to Klaus Hennings' (1986: 237–8) summary of the major differences between the conceptions of early marginalism and what he calls 'neo-neoclassical economics'. These relate to equilibrium versus processes of economic growth, statics versus dynamics, perfect competition versus competition in general, and, at a formal level, the different attitudes to maximisation and minimisation between the first generations of marginalist and current practice. This survey suggests, as Hennings also did (1986: 226 n7), that on many issues, knowledge about specific aspects of work by these pioneers has advanced little beyond the investigations of Hutchison (1953), Stigler (1941; 1950) and Schumpeter (1954).

Three general exceptions can be noted to this last conclusion, and these can be used to draw together various otherwise disjointed themes from the component parts of this survey devoted to specific economists. They alter at least part of the picture of English marginalism in the formative period as presented by these three foundation commentators. Recent work has allowed greater illumination of the diverse origins of marginalism in England, provides a number of significant reasons for differentiating between the views of the English-speaking pioneers, and, with respect to critiques of their doctrines, focuses on matters quite different from those raised previously.

Study of the origins of marginalism has been greatly assisted by the wider availability of important material on the young Jevons and young Marshall

emphasised in this survey, and by reinterpretations of key work of some of the later generation. The utilitarian connection, downgraded in the early 1950s by Schumpeter and Hutchison, can now be shown to be very important. For Jevons, this is visible even in the Australian interlude; for Edgeworth, from the early work and the aims of *Mathematical Psychics*; for Marshall, from the influence on his early economics of the Grote Club, Sidgwick, and his own reading of Mill and Bentham, while it is also crucial to Pigou's early work. Sidgwick's influence on the Cambridge school in particular needs more work. One aspect of this applied social ethics seems dominant: its apparent usefulness in solving the growing labour question. This provided motivation and stimulus to the new marginalism from Jevons to Pigou. However, such an association does not mean reverting to crude Marxist explanations of the new economics. If there was an unambiguous 'apologetic intent' in the new economics, it is only discernible in the work of J. B. Clark. In fact, the applied utilitarian features of the new doctrines were distinctly radical – their application, for example, to tax policy and particularly the progressive income tax, as seen in the work of Edgworth, Fisher and, though not surveyed here, Pigou (1912: 369–78). In addition, such concerns are revealed in the many, and largely unsuccessful, attempts to make utility a more operational concept. For reasons perhaps related to tax questions (Roy 1984), the cardinal aspects of utility began to disappear from the English research agenda during the 1930s.

Changing critical perspectives on marginalism have altered interpretations of its doctrines in a number of respects. The Cambridge controversy results in capital theory necessitate revaluations of the worth of the contributions in this area by Jevons, Clark and Fisher. They also open different perspectives on contributions like Wicksteed's generalised production function. More generally, in the wake of Sraffa's (1960) contribution, there have been reassessments of the broader significance of the marginal revolution in England, particularly work by Dobb (1973) and Bharadwaj (1978a). As Steedman's work on Wicksteed shows, this does not mean a return to conspiracy theories; however, as his work on Jevons illustrates, it may lead to paradoxical results. Some of these wider issues were canvassed in Henning's (1986) evaluation of marginalism as an exchange theory.

The new work on the early English marginalists also permits their considerable dehomogenisation. Marshall's classical roots and their consequences for the more dynamic aspects of his theory and for his analysis of supply, differentiated his work from that of Jevons, and, even more, from that of Wicksteed. Edgeworth and Pigou likewise exhibited their differences from Marshall, not only with respect to technical matters like the nature of the utility function and marginal supply price, but also on the precise implications of the findings from the new economics for the welfare consequences of laissez-faire. Although it is easy to concentrate on the shared features in the new doctrines, such a focus should not detract from the substantial differences between the early English marginalists.

Finally, new work discussed in this survey draws attention to the lessons that can still be learned from the writings of this past generation of economic

writers. Examples of this were given in the context of work on Marshall's theory of value, Edgeworth's contractarian economics, Wicksteed's price determination analysis, and Fisher's theory of saving and operational utility, and much can still be learned from Jevons, Clark and Pigou. This remains the most important reason for returning to the writings of past generations of economists. Unlike old soldiers who fade away, old economists, provided that they exhibit the talent and originality that characterises the work of all seven discussed here, continue to have something of value to offer to successive generations of economists. Revisiting English marginalism from 1870 to 1920 may produce dividends far beyond the interests of intellectual history, and nowhere is this better illustrated than in some of the new work on Jevons, Marshall, Wicksteed, Edgeworth, Clark, Fisher and Pigou.[20]

Notes

1 This is demonstrated in Keynes' bibliography, in whose compilation Mary Paley Marshall assisted, given in Pigou (1925: 500–8). Apart from the 1874 articles in the *Beehive* (Harrison 1963) and a substantial number of letters to *The Times* (see O'Brien 1981: 37), this bibliography is virtually complete with respect to published work.

2 See the bibliography in Jevons (1910: appendix IV) and Black and Könekamp (1972–81: VII, 123–7). In addition to value and distribution, Jevons' economics covered money, economic fluctuations, labour economics, taxation, energy economics, and the economics of public utilities. See Black (1981) for a full-range survey of Jevons' economics contribution.

3 Full-blown Marshall biographies are in preparation by Becattini and Groenewegen; detailed aspects of Marshall's life have been chronicled by Whitaker (1972; 1975), Coase (1986) and Groenewegen (1985). There are good biographical sketches of Edgeworth, Clark and Pigou in Creedy (1986a: esp. chs 1 and 2) and Hicks (1984) for Edgeworth; Homan (1928) and J. M. Clark (1952) for J. B. Clark and Johnson (1978), Saltmarsh and Wilkinson (1960) and Brahmanand (1959) for Pigou. Walker (1985) presents an interesting evaluation of these Keynes biographies. Reference should also be made to the biographies of the seven in the *New Palgrave Dictionary*.

4 Jevons (1910; 1879: xxix–xxxi), Black and Könekamp (1972–81: V, 24); Pigou (1925: 413). The case of Todhunter remains mysterious. He was a Johnian mathematician and knew second wrangler, Marshall, for whom he wrote a testimonial in support of his application for Bristol. In addition, Todhunter was Whewell's biographer and, although not mentioned in Todhunter's account, Whewell at least knew of Cournot's work by 1849 (Rashid 1977: 388) via Graves, the Professor of Law at University College, London, who also claims to have recommended Cournot's work to Babbage. But in 1875 on Jevons account, Todhunter had written that he was unfamiliar with Cournot's *Recherches*. Interestingly, St John's College Library, Cambridge, does not have a copy of the first edition. Marshall's copy of the first edition is in the Marshall Library, with his own extensive annotations. Marshall may in fact have become acquainted with it from his early reading of Roscher (1854: §22) which referred to Cournot's work as novel in a manner designed to attract the attention of someone like Marshall. See also Hutchison and associates (1955: esp. 7–8).

5 This means ignoring contributions on Jevons' theory of labour (Kerton 1971), on Jevons' law of indifference and competitive equilibrium (Negishi 1982), and more generally some important work on Jevons' method and his conception of science (Mays 1962; McLellan 1972). The birth anniversary was celebrated in the pages of

Econometrica, the 1962, 1971 and 1982 centenaries in the pages of the *Manchester School*.

6 Both Hutchison and Stigler in their written comments reminded me that Knight's criticism of the Austrian theory (of which Jevons was such a clear forerunner) anticipates, and in some respects parallels, Steedman's critique referred to in the text. Given the time period covered by this survey, a summary of Knight's perspective on the matter is inappropriate.

7 Such considerations seem to rule out Bostaph and Shieh's construction of Figure 3 (1987: 118). It is surprising that Stigler (1954) who deals with empirical studies of consumer behaviour, does not mention these early attempts by Jevons as outlined in this posthumous publication. It may also be noted that Wicksteed (1889) had severely criticised Jevons' analysis of the King-Davenant law, largely on theoretical grounds (see Creedy 1986b: 201–6). For a full discussion see White (1989).

8 Pell's more important work on railways was given as a lecture in 1856 at a meeting of the Philosophical Society to which Jevons belonged (Black and Könekamp 1972–81: II, 249, n17). This was not published till 1858 (Pell 1858). Jevons did not read Lardner till April/May 1857, not long after purchasing it, presumably *because* of this growing involvement in the railway debates of New South Wales. On internal evidence from *Theory of Political Economy*, there is good reason to believe that Lardner's precise influence on Jevons' theoretical formulations has been overstated, contrary to the position advanced by Bostaph and Shieh (1986), and earlier by Hutchison (1953). Nothing of this, of course, negates Hutchison's hypothesis of an association between railway economics and Jevons' marginalism. Hutchison (1982) is partly inspired by his opposition to Dobb's (1973) interpretation of the Jevonian revolution and similar perspectives such as those presented by Bharadwaj (1978a: esp. 26–32).

9 Personal diaries for the Australian period and later indicate that during this period Jevons was reading Whewell's *Philosophy of Inductive Sciences* (Black and Könekamp 1972–81: VII, 117, n14) and that in May 1857 he contemplated, and in fact started, an introduction for a book on social anthropology combining political and social economy with moral philosophy. Whateley's lectures, which he had been reading in the previous months, are highly 'philosophical' (Black and Könekamp 1972–81: VII, 118) as were Woolley's lectures (Woolley 1862), at least one of which he attended in 1856. Jevons was also reading Chalmers and Quetelet at the time. Black's 1972 conclusion cannot be sustained by the facts he himself later made available.

10 A description borrowed from the title of Dardi (1984), which is a product of the extensive Marshall scholarship practiced in Italy under the encouragement and leadership of Giacomo Becattini, who himself has invited a re-reading of Marshall in the light of an Italian translation of Marshall and Marshall (1879) published under his auspices.

11 Most of the articles referred to in the first part of this paragraph have been included in Wood (1982: III) together with a large number of others. On consumer surplus, reference should also be made to more recent articles such as Dooley (1983), Ekelund and Hébert (1985: 433–9) and Roy (1984).

12 For some of the problems associated with this selectiveness in Pigou's editing, see Whitaker (1968: 144), who in this context also mentions its consequences for the selectiveness of the Marshall holdings in the Marshall Library at Cambridge. An outline of the contents of these holdings is given in McWilliams (1969).

13 This is not to say that Marshall owed nothing to Jevons. The utility theory owed much to Jevons, as did, in some of its details, the welfare theory based on it. Examples, of which I am reminded by Michael White, include in particular the specific formulation of the consumer surplus theory, such as the practice of treating utility and price as the dependent variable in diagrammatic presentations and the

simplifying assumption about normal distributions on the basis of which comparisons of utility in terms of groups may become permissible.

14 Unfortunately, not all of Steedman's writings on Wicksteed are as yet in print, and I take this opportunity to thank him for his willingness to make them available to me in manuscript form. Klaus Hennings drew my attention to this work in correspondence when I suggested that Wicksteed and Edgeworth, together with Fisher and Clark, should be included in the chapter. It may also be noted that Lionel Robbins greatly admired Wicksteed's work and made it readily available in reprint during the 1930s. Alas, these reprints and Wicksteed's *Alphabet of Economic Science* (1888) have now become rare, hence Duckworth's reprinting of Wicksteed (1894) which unfortunately has still not been published.

15 See, for example, the symposium on the transmission of ideas in the *American Economic Review* (Hutchison 1955: esp. 10–11, 37–9) where reference is made to Edgeworth's suppression of Walras' work possibly at the instigation of Marshall. Similar sentiments were expressed by Schumpeter (1954: 831, n3), and see also Creedy (1986a: 130–2 and cf. 19, 21–31, 109). Creedy also provides examples of instances where Edgeworth was critical of Marshall (1986a: 96–8).

16 Creedy draws attention to many aspects of comparisons with Marshall in Edgeworth's work, relating to issues like the theory of demand, the problem of indeterminacy, the nature of the utility function, and even the use of Plato's expression, 'the one in the many and the many in the one'. In his interesting discussion of Edgeworth's mathematical training, Creedy seems to have underplayed the Marshall-Clifford connection (Creedy 1986a: 39–41) which Keynes described as a close and intimate friendship (Keynes 1972: 174, n3, 181, n2). John Whitaker suggests that Keynes probably overstated the Marshall-Clifford connection which he thinks would not have survived much beyond Marshall's philosophical period. However, an undated fragment, probably from late in Marshall's lifetime that survives in the Marshall Library, states, '[Alfred Marshall] had a profound admiration for Clifford [who] cared most for his ideas' (large brown box, item 26, in Mary Paley's handwriting).

17 To reinforce his justified emphasis on the importance of *Mathematical Psychics* to the understanding of Edgeworth, Creedy (1986a: 135–50) provides a most useful reader's aid to this difficult work, including errata, translations from the Greek, and references to sources. These illustrate the wide foundations on which Edgeworth constructed his new approach to utilitarianism and economics.

18 Johnson (1978: 175) also recounts that in 1899 he won the Chancellor's Gold Medal for English verse with an ode to 'Alfred the Great', the last few lines of which reflect the idealism that led Pigou to economics as a follower in Marshall's footsteps. Hutchison (1981: 63) cites Pigou's view from his inaugural lecture that economists should be fired by social enthusiasm as a sign of the beginning of the end of positive economics at Cambridge. Cf. Hutchison (1953: 284) which gives a more generous quotation from Pigou's lecture. Like Marshall, Pigou devoted much of his early life to government inquiries and royal commissions; unlike Marshall he published widely and much (see Brahmanand 1959).

19 Pigou (1905: see v) developed from his Adam Smith Prize essay (1903) and Jevons Memorial Lectures given in 1903–4; Sidgwick's influence appears rather indirect. His *Practical Ethics* (1898) of which Essay 4, 'The Morality of Strife', tackled issues of arbitration in labor disputes (Sidgwick 1898: 108–12) is not quoted. In fact, Pigou (1905: 181n) only directly cites Sidgwick's *Elements of Politics*. Marshall was a much greater influence, through his *Principles* (for example, Pigou (1905: 89–90) uses the derived demand distribution analysis of Book V, Chapter VI, to some effect), but also the *Report of the Royal Commission on Labour* (1894) in which Marshall had been very heavily involved, Marshall's introduction to Price's *Industrial Peace* (1887), and Marshall's *Elements of the Economics of Industry* (1902), particularly Book VI,

Chapter XIV. There is no reference to Marshall and Marshall (1879) of which Book III, especially Chapter VIII, would have been highly relevant to Pigou's topic. In June 1905 Keynes completed his mathematical tripos (12th wrangler) and by October 1905 he was contemplating entering part II of the economics tripos. As Skidelesky (1983: 124–5) indicates, in 1904 Pigou had given an assessment of the young Keynes in *Granta*, but both that, and Skidelsky, fail to mention Keynes' collaboration with Pigou on the mathematics of bargaining.

20 Revisions of this chapter have benefited from perceptive comments by Terence Hutchison, Warren Samuels, Ian Steedman, George Stigler, John Whitaker, Michael White and my official commentator, John Creedy. Needless to say, their valued assistance does not absolve me from any remaining errors.

References

Becattini, Giacomo (1975) *Invito a una rilettura di Marshall*, introduction to A. and M. P. Marshall, *Economia della produzione*, Milan: ISEDI, ix–civ.

Bharadwaj, K. (1972) 'Marshall on Pigou's "Wealth and Welfare"', *Economica*, 39(153) 32–46; in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, IV, 206–21.

——(1978a) *Classical Political Economy and Rise to Dominance of Supply and Demand Theories*, New Delhi: Orient Longmans.

——(1978b) 'The Subversion of Classical Analysis: Alfred Marshall's Early Writings on Value', *Cambridge Journal of Economics*, 2(3) 253–71; in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, III, 600–24.

Black, R. C. D. (1972) 'Jevons, Bentham and De Morgan', *Economica*, 39(1) 119–34.

——(1981) 'W. S. Jevons (1835–1882)', in *Pioneers of Modern Economics in Britain*, eds D. P. O'Brien and J. R. Presley, London: Macmillan.

Black, R. C. D. and Könekamp, R. (1972–81) *Papers and Correspondence of William Stanley Jevons*, London: Macmillan.

Blaug, M. (1964) *Economic Theory in Retrospect*, 1st English edn, London: Heinemann.

Boland, L. (1982) 'Difficulties with the Element of Time and the "Principles" of Economics, Or Some Lies my Teachers Told Me', *Eastern Economic Journal*, 9(1) 47–58.

Bostaph, S. and Shieh, Y. N. (1986) 'W. S. Jevons and Lardner's Railway Economy', *History of Political Economy*, 18(1) 49–64.

——(1987) 'Jevons's Demand Curve', *History of Political Economy*, 19(1) 107–26.

Brahmanand, P. R. (1959) 'A. C. Pigou (1877–1959)', *Indian Economic Journal*, 6 (April) 466–88.

Chakravarty, S. (1982) *Alternative Approaches to a Theory of Economic Growth: Marx, Marshall and Schumpeter*, New Delhi: Orient Longmans.

Clark, J. B. (1886) *The Philosophy of Wealth*, Bolton: Ginn & Company, reprinted New York: Augustus M. Kelley, 1967.

——(1899) *The Distribution of Wealth*, reprinted New York: Augustus M. Kelley, 1965.

Clark, J. M. (1952) 'J. B. Clark (1847–1938)', in H. W. Speigel (ed.) *The Development of Economic Thought*, New York: John Wiley, 1962, 393–415.

Coase, R. H. (1986) 'Marshall's Mother and Father', *History of Political Economy*, 16(4) 519–28.

Coats, A. W. (1967) 'Sociological Aspects of British Economic Thought (Ca 1880–1930)', *Journal of Political Economy*, 75(5) 706–29.

——(1968) 'The Origins and Early Development of the Royal Economic Society', *Economic Journal*, 78(310) 349–71.
Collard, David (1981) 'A. C. Pigou, 1877–1959', in D. P. O'Brien and J. R. Presley (eds) *Pioneers of Modern Economics in Britain*, London: Macmillan, 105–39.
Conard, J. W. (1963) *An Introduction to the Theory of Interest*, Berkeley and Los Angeles: University of California Press.
Creedy, John (1981) 'F. Y. Edgeworth, 1845–1926', in D. P. O'Brien and J. R. Presley (eds) *Pioneers of Modern Economics in Britain*, London: Macmillan, 71–104.
——(1986a) *Edgeworth and the Development of Neoclassical Economics*, Oxford: Blackwell.
——(1986b) 'On the King-Davenant "Law" of Demand', *Scottish Journal of Political Economy*, 33(3) 193–212.
Dardi, Marco (1984) *Il giovane Marshall: accumulazione e mercato*, Bologna: Il Mulino.
Datta, B. (1959) 'Arthur Cecil Pigou (1877–1959)', *Arthaniti*, 3(1) 1–13.
Davidson, L. S. and Meiners, R. S. (1976) 'A Note on the Microfoundations of Macroeconomics', *Rivista Internazionale di scienze economiche e commerciale*, 23(9) 888–99.
Deaton, A. S. (1975) *Models and Projections of Demand in Post-War Britain*, London: Chapman and Hall.
Dobb, M. H. (1931) 'The Cambridge School', in E. R. A. Seligman (ed.) *Encyclopaedia of the Social Sciences*, vol. 5, New York: Macmillan, 368–71.
——(1973) *Theories of Value and Distribution Since Adam Smith*, Cambridge: Cambridge University Press.
Dooley, P. C. (1983) 'Consumer's Surplus: Marshall and His Critics', *Canadian Journal of Economics*, 16(1) 26–38.
——(1985) 'Giffen's Hint?', *Australian Economic Papers*, 24(44) 201–5.
Edgeworth, F. Y. (1881) *Mathematical Psychics*, London: Kegan Paul. Reprinted in Reprints of Scarce Tracts in Economics and Political Science, London School of Economics, no. 10, London: LSE, 1932.
——(1925) *Papers Relating to Political Economy*, London: Macmillan.
Ekelund, R. R. and Hébert, R. F. (1985) 'Consumer Surplus: the First Hundred Years', *History of Political Economy*, 17(3) 419–54.
Fellner, William (1967) 'Operational Utility: The Theoretical Background and Measurement', in *Ten Economic Studies in the Tradition of Irving Fisher*, New York: John Wiley, 39–74.
Fisher, I. (1892) *Mathematical Investigation in the Theory of Value and Price*, New Haven: Yale University Press, 1895. Reprinted New York: Augustus M. Kelley, 1965.
——(1907) *The Rate of Interest*, London: Macmillan.
——(1927) 'A Statistical Method of Measuring "Mechanical Utility" and Testing the Justice of a Progressive Income Tax', in *Economic Essays Contributed in Honour of John Bates Clark*, New York: Macmillan, 157–93.
Fisher, I. N. (1956) *My Father Irving Fisher*, New York: Comet Press.
——(1961) *A Bibliography of the Writings of Irving Fisher*, New Haven: Yale University Press.
Friedman, Milton (1949) 'The Marshallian Demand Curve', *Journal of Political Economy*, 57 (December) 463–95; in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, III, 172–214.
Frisch, R. (1950) 'Alfred Marshall's Theory of Value', *Quarterly Journal of Economics*, 64, 495–512: in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, III, 223–50.

Garegnani, P. (1960) *Il capitale nelle theorie delle distribuzione*, Milan: Giuffre, 1972 reprint.
——(1970) 'Heterogeneous Capital, the Production Function and the Theory of Distribution', *Review of Economic Studies*, 37(3) 407–36.
Goodwin, C. D. (1966) *Economic Enquiry in Australia*, Durham NC: Duke University Press.
——(1972) 'Marginalism Moves to the New World', *History of Political Economy*, 4(2) 551–70.
Groenewegen, P. D. (1985) *Alfred Marshall as Professor of Political Economy at Cambridge, 1885–1908*, Sydney University, Department of Economics, Working Paper no. 82, June.
——(1988) 'Alfred Marshall and the Establishment of the Cambridge Economics Tripos', *History of Political Economy*, 20(4) 627–67.
Guillebaud, C. W. (ed.) (1961) *Principles of Economics*, 9th variorum edn, London: Macmillan.
——(1971) 'Some Personal Reminiscences of Alfred Marshall', *History of Political Economy*, 3(1) 1–8; in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, I, 91–7.
Harcourt, G. C. (1969) 'Some Cambridge Controversies in the Theory of Capital', *Journal of Economic Literature*, 7(2) 369–405.
Harrison, R. (1963) 'Two Early Articles by Alfred Marshall', *Economic Journal*, 73(3) 422–30.
Hennings, Klaus (1986) 'The Exchange Paradigm and the Theory of Production and Distribution', in Mauro Baranzini and Roberto Scazzieri (eds) *Foundations of Economics*, Oxford: Blackwell, 221–43.
Henry, J. F. (1982) 'The Transformation of John Bates Clark: An Essay in Interpretation', *History of Political Economy*, 14(2) 166–77.
——(1983) 'John Bates Clark and the Marginal Product: An Historical Inquiry into the Origins of Value-free Economic Theory', *History of Political Economy*, 15(3) 375–89.
Herford, C. H. (1931) *Philip Henry Wicksteed: His Life and Works*, London: Dent and Sons.
Hicks, J. R. (1984) 'Francis Ysidro Edgeworth', in Antoin E. Murphy (ed.) *Economists and the Irish Economy*, Dublin: Irish Academic Press, 157–74.
Homan, Paul T. (1928) 'John Bates Clark', in *Contemporary Economic Thought*, New York: Harper & Brothers, 15–103.
Hutchison, T. W. (1953) *A Review of Economic Doctrines, 1870–1929*, Oxford: Clarendon Press.
——(1955) 'International Flow of Economic Ideas', *American Economic Review*, 45(2) 1–16.
——(1981) *The Politics and Philosophy of Economics*, Oxford: Blackwell.
——(1982) 'The Politics and Philosophy in Jevons's Political Economy', *Manchester School*, 50(4) 366–78.
Jaffé, William (1975) 'Biography and Economic Analysis', *Western Economic Journal*, 3(3) 223–32.
Jalladeau, Joel (1975) 'The Methodological Conversion of John Bates Clark', *History of Political Economy*, 9(2) 209–26.
Jevons, W. S. (1905) *The Principles of Economics*, London: Macmillan.
——(1910) *Theory of Political Economy*, 4th edn, London: Macmillan.

Johnson, H. G. (1978) 'Arthur Cecil Pigou (1877–1959)', in E. S. Johnson and H. G. Johnson (eds) *The Shadow of Keynes*, Oxford: Blackwell, 173–80.
Kerton, Robert R. (1981) 'Hours of Work: Jevons' Labor Theory After 100 years', *Industrial Relations*, 10, May, 227–30.
Keynes, J. M. (1912) 'Review of W. S. Jevons, *Theory of Political Economy*, fourth edition, 1910', *Economic Journal*, 22(89) 78–80.
——(1926) *Official Papers of Alfred Marshall*, London: Macmillan.
——(1972) *Essays in Biography*, in *The Collected Writings of Maynard Keynes*, vol. 10, London: Macmillan.
Könekamp, R. (1972) 'Biographical Introduction and Personal Journal', in R. D. C. Black and R. Könekamp (eds) *Papers and Correspondence of William Stanley Jevons*, vol. I, London: Macmillan.
La Nauze, J. A. (1941) 'Two Notes on Hearn', *Economic Record*, 17(33) 255–62.
——(1949) *Political Economy in Australia*, Melbourne: Melbourne University Press.
——(1953) 'The Conception of Jevons's Utility Theory', *Economica*, 20(3) 356–8.
Levine, A. L. (1980) 'Increasing Returns, the Competitive Model and the Enigma that was Alfred Marshall', *Scottish Journal of Political Economy*, 27(3) 260–75.
——(1982) 'Marshall and the Classical Tradition', *Journal of Post Keynesian Economics*, 4(4) 565–73.
——(1983) 'Marshall's *Principles*, and the "Biological Viewpoint": A Reconsideration', *Manchester School*, 51(3) 276–93.
Loasby, B. J. (1978) 'Whatever Happened to Marshall's Theory of Value?', *Scottish Journal of Political Economy*, 25(1) 1–12; in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, III, 586–99.
Lutz, F. A. (1967) *The Theory of Interest*, Dordrecht: D. Reidel.
MacLennan, B. (1972) 'Jevons's Philosophy of Science', *Manchester School*, 40(1) 53–71.
McWilliams, R. (1969) 'The Papers of Alfred Marshall deposited in the Marshall Library', in *History of Economic Thought Newsletter*, 3, November 9–19; in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, IV, 193–203.
Maloney, John (1985) *Marshall, Orthodoxy and the Professionalisation of Economics*, Cambridge: Cambridge University Press.
Marshall, A. and Marshall, M. P. (1879) *The Economics of Industry*, London: Macmillan.
Mays, W. (1962) 'Jevons's Conception of Scientific Method', *Manchester School*, 30(1) 223–49.
Mirowski, Philip (1984) 'Physics and the Marginalist Revolution', *Cambridge Journal of Economics*, 8(4) 36–79.
Moss, L. (1982) 'Biological Theory and Technical Entrepreneurship in Marshall's Writings', *Eastern Economic Journal*, 8(1) 3–13.
Moss, Scott (1980) 'The End of Orthodox Capital Theory', in E. J. Nell (ed.) *Growth, Profits and Property*, New York: Cambridge University Press, 64–79.
Negishi, T. (1982) 'A Note on Jevons's Law of Indifference and Competitive Equilibrium', *Manchester School*, 50(3) 220–30.
——(1985) 'Rehabilitation of Marshall's Life-Cycle Theory to Explain Diminishing Cost', in T. Negishi (ed.) *Economic Theories in a Non-Walrasian Tradition*, New York: Cambridge University Press, ch. 5.
O'Brien, D. P. (1981) 'A. Marshall, 1842–1924', in D. P. O'Brien and J. R. Presley (eds) *Pioneers of Modern Economics in Britain*, London: Macmillan, 36–71.
Pasinetti, L. L. (1969) 'Switches of Technique and the Rate of Return in Capital Theory', *Economic Journal*, 79(315) 508–31.

Pell, R. B. (1858) 'On the Application of Certain Principles of Political Economy to the Question of Railways', *The Sydney Magazine of Science and Arts*, I, 124–28.
Pigou, A. C. (1905) *Principles and Methods of Industrial Peace*, London: Macmillan.
——(1907) 'Review of the Fifth Edition of Marshall's *Principles of Economics*', *Economic Journal*, 17(1) 532–35; in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, II, 54–7.
——(1910) 'A Method of Determining the Numerical Value of Elasticities of Demand', *Economic Journal*, 20(80) 636–40.
——(1912) *Wealth and Welfare*, London: Macmillan.
——(1925) *Memorials of Alfred Marshall*, London: Macmillan.
Rashid, Salim (1977) 'William Whewell and Early Mathematical Economics', *Manchester School*, 45(4) 381–91.
Reisman, David (1986) *The Economics of Alfred Marshall*, London: Macmillan.
——(1987) *Alfred Marshall: Progress and Politics*, London: Macmillan.
Robbins, L. C. (1936) 'The Place of Jevons in the History of Economic Thought', reprinted in *Manchester School*, 50(4) 310–25.
Robertson, H. M. (1976) 'Alfred Marshall', in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, I, 442–52.
Roscher, Wilhelm (1854) *Grundlagen der National Okonomie*, Stuttgart: J. G. Gotta'sche Buch Handlung.
Roy, Subroto (1984) 'Considerations on Utility, Benevolence and Taxation', *History of Political Economy*, 16(3) 349–62.
Saltmarsh, J. and Wilkinson, P. (1960) *Arthur Cecil Pigou, 1877–1959*, Cambridge: King's College.
Samuelson, P. A. (1962) 'Parable and Realism in Capital Theory: The Surrogate Production Function', reprinted in G. C. Harcourt and N. F. Laing (eds) *Capital and Growth*, Harmondsworth: Penguin, 1971, 213–32.
——(1967a) 'The Monopolistic Competition Revolution', in *Monopolistic Competition Theory: Studies in Impact*, London: John Wiley.
——(1967b) 'Irving Fisher and the Theory of Capital', in *Ten Economic Studies in the Tradition of Irving Fisher*, New York: John Wiley, 17–37.
——(1974) 'Complimentarity: An Essay on the 40th Anniversary of the Hicks-Allen Revolution in Demand Theory', *Journal of Economic Literature*, 12(4) 1255–89.
Schumpeter, J. A. (1952) *Ten Great Economists*, London: Allen & Unwin.
——(1954) *History of Economic Analysis*, London: Allen & Unwin.
Sidgwick, H. (1883) *Principles of Political Economy*, London: Macmillan.
——(1898) *Practical Ethics*, London: Swann Sonnenschein.
Skidelsky, Robert (1983) *John Maynard Keynes: Hopes Betrayed, 1883–1920*, London: Macmillan.
Sraffa, P. (1960) *Production of Commodities by Means of Commodities*, Cambridge: Cambridge University Press.
Steedman, Ian (1972) 'Jevons's Theory of Capital and Interest', *Manchester School*, 40(1) 31–52.
——(1986) 'Rationality, Economic Man and Altruism in Phillip H. Wicksteed's *Common Sense of Political Economy*', in Barbara A. Smith (ed.) *Truth, Liberty, Religion*, Oxford: Manchester College, 293–311.
——(1987a) 'Philip Henry Wicksteed (1844–1927)', in *The New Palgrave: A Dictionary of Economics*, vol. IV, London: Macmillan, 915–19.

——(1987b) Introduction to P. H. Wicksteed, *An Essay on the Coordination of the Laws of Distribution* (1894) reprinted London: Duckworth.
——(1988) 'P. H. Wicksteed's Jevonian Critique of Marx', in I. Steedman (ed.) *From Exploitation to Altruism*, London: Polity Press.
Stigler, G. J. (1941) *Production and Distribution Theories: The Formative Period*, New York: Macmillan.
——(1950) 'The Development of Utility Theory', in *Essays in the History of Economics*, ed. Stigler, Chicago: Chicago University Press, 1965, 66–155.
——(1954) 'The Early History of Empirical Studies of Consumer Behaviour', in *Essays in the History of Economics*, ed. Stigler, Chicago: Chicago University Press, 1965, 199–233.
——(1962) 'Marshall's Principles After Guillebaud', *Journal of Political Economy*, 70(2) 282–6.
——(1969) 'Alfred Marshall's Lectures on Progress and Poverty', *Journal of Law and Economics*, 12(1) 181–226.
——(1976) 'The Scientific Use of Scientific Biography', in *The Economist as Preacher*, ed. Stigler, Oxford: Blackwell, 86–97.
——(1986) 'The Professionalisation of Economics', *Minerva*, 24(2–3) 372–3.
Stigler, G. J. and Friedland, Claire (1979) 'The Pattern of Citation Practices in Economics', *History of Political Economy*, 11; in G. J. Stigler (ed.) *The Economist as Preacher*, Oxford: Blackwell, 1982, 173–91.
Sylos Labini, P. (1985) 'Sraffa's Critique of the Marshallian Theory of Prices', *Political Economy: Studies in the Surplus Approach*, 1(2) 51–71.
Tobin, James (1985) 'Neoclassical Theory in America: J. B. Clark and Fisher', *American Economic Review*, 75(6) 28–38.
Velupillai, K. (1975) 'Irving Fisher on "Switches of Techniques": A Historical Note', *Quarterly Journal of Economics*, 89(4) 679–80.
Walker, D. A. (1985) 'Keynes as a Historian of Economic Thought: The Biographical Essays on Neoclassical Economists', *History of Political Economy*, 17(2) 159–86.
Whitaker, J. K. (1968) 'The Early Manuscripts of Alfred Marshall', *History of Economic Thought Newsletter*, (1) 7–9; in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, IV, 142–4.
——(1972) 'Alfred Marshall: The years 1877–1885', *History of Political Economy*, 4(1) 1–61.
——(1974) 'The Marshallian System in 1881: Distribution and Growth', *Economic Journal*, 84(333) 1–17.
——(1975) Introduction to *The Early Economic Writings of Alfred Marshall, 1867–1890*, vol. I, London: Macmillan, 3–113.
——(1977) 'Some Neglected Aspects of Alfred Marshall's Economic and Social Thought', *History of Political Economy*, 9(1) 1–197; in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, I, 453–86.
——(1982) 'The Emergence of Marshall's Period Analysis', *Eastern Economic Journal*, 8(1) 15–29.
——(1987) 'The Distribution Theory of Marshall's Principles', in A. Asimakopulos (ed.) *Theories of Income Distribution*, Boston MA: Kluwer, 105–32.
Whitaker, J. K. (ed.) (1975) *The Early Economic Writings of Alfred Marshall 1867–1890*, London: Macmillan and the Royal Economic Society.
White, M. V. (1982) 'Jevons in Australia: A Reassessment', *Economic Record*, 58(160) 32–45.

——(1984) 'Jevons in Australia: Response to Professor Hutchison', *Manchester School*, 52(1) 70–2.
——(1987a) 'Porter's Hint: A Note', *Australian Economic Papers*, 16(49) 328–31.
——(1987b) 'Invention in the Face of Necessity: Marshall and the Giffen Good', mimeo, September 1987.
——(1989) 'Why are there no Supply and Demand Curves in Jevons?', *History of Political Economy*, 21(3) 425–56.
Wicksteed, P. H. (1888) *The Alphabet of Economic Science*, London: Macmillan.
——(1889) 'On Certain Passages in Jevons's Theory of Political Economy', *Quarterly Journal of Economics*, 3, 293–314; in P. H. Wicksteed, *The Common Sense of Political Economy*, edited with an introduction by L. C. Robbins, London: Routledge & Kegan Paul (1910, 1933) 734–54.
——(1894) *An Essay on the Coordination of the Laws of Distribution*, London: Macmillan; reprinted in Reprints of Scarce Tracts in Economic and Political Science, London School of Economics, no. 12, 1932.
——(1910, 1933) *The Common Sense of Political Economy*, edited with an introduction by L. C. Robbins, London: Routledge & Kegan Paul.
Williams, P. L. (1978) *The Emergence of the Theory of the Firm from Adam Smith to Alfred Marshall*, London: Macmillan.
——(1986) 'A Reconstruction of Marshall's Temporary Equilibrium Pricing Model', *History of Political Economy*, 18(4) 639–53.
Winch, Donald, and Collini, S. (1983) 'A Separate Science: Politics and Society in Marshall's Economics', in S. Collini, P. Winch and J. Burrow (eds) *That Noble Science of Politics*, Cambridge: Cambridge University Press, ch. 10.
Wood, J. C. (1982) *Alfred Marshall: Critical Assessments*, London: Croom Helm.
——(1988) *William Stanley Jevons: Critical Assessments*, London: Croom Helm.
Woolley, John (1862) *Lectures Delivered in Australia*, Cambridge and London: Macmillan.

11 Perfect competition, equilibrium and economic progess

That wretched division of labour and increasing returns

Introduction

This chapter revisits some old problems of economic theory, discussed in the work of Smith (1776), Marshall (especially 1890) and Allyn Young (especially 1928), in a manner not congenial to contemporary high theory. They touch on what Marshall (1890: 461) called the 'high theme of economic progress' and the role therein of increasing returns and the division of labour, topics equally linked in the earlier work of Adam Smith and subsequently by Allyn Young. Others have seen increasing returns and the division of labour as 'wretched' because they play havoc with conventional notions of competition and equilibrium (see, for example, Hicks 1939: 82–5; Samuelson 1947: ch. IV; 1967: 39; Hahn 1973: 12–13, 32). The issues raised by this have featured frequently in Brian Loasby's work (especially Loasby 1989: ch. 4; 1990; 1995). I myself have touched on them on previous occasions (Groenewegen 1977: esp. 173–4; 1982) while they are also raised by Negishi (1985: esp. chs 2, 5) in his study of non-Walrasian economics.

The three economists whose writings on the division of labour and increasing returns form the focus of this chapter are all authors who ranked the progress associated with these matters well above issues of competition and market equilibrium (cf. Loasby 1989: 48–9). In some respects they seem to go even further, tentatively arguing that essential aspects of the relationship between progress and the division of labour are incompatible with equilibrium theorising, since the former, properly speaking, are part of an evolutionary economics which does not easily fit in with equilibrium analysis (compare Richardson 1975: 351). Nor, for that matter, is perfect competition salient to progress (Loasby 1989: 56) and the realistic analysis thereof.

The argument of the chapter is developed in the four subsequent sections. The first three briefly examine the perspectives of Smith, Marshall and Allyn Young on the links between competition, equilibrium and an economic progress predicated on the division of labour and concomitant increasing returns. A fourth section posits some conclusions about the value in looking at classical texts in order to illustrate the limitations of aspects of contemporary mainstream theory, as part of that critical appraisal of twentieth-century economic thought to which Loasby has devoted so much attention.

Adam Smith: increasing returns and economic growth

It is well known that Smith's *Wealth of Nations* commences with the division of labour and that the productivity consequences of the latter, together with the national propensity to use labour productively, were for him the key causes of the wealth of nations (Smith 1776: 10). The first chapter of Book I deals with the nature and the consequences of the division of labour; Chapter 2 links it firmly with an exchange economy and the human propensity to truck and barter; while Chapter 3 both constrains division of labour by the extent of the market and, by a process of mutual causation, builds the interaction of the productivity consequences of the division of labour and the growth of the market it implies into a cumulative analysis of progress (cf. Lowe 1975). The association between a 'thoroughly established' division of labour and a commercial society where everyone 'in some measure [becomes] a merchant', is then linked to the profound consequences of the development of a monetary economy, an essential prerequisite for human society to reach its highest stage in the stadial progress perspective Smith had developed (cf. Meek 1976). It is this chain of argument which introduces the word 'value' to Smith's analysis of Book I, devoted to the growth of labour's productive powers and the manner in which the national product or revenue is naturally distributed. Three chapters deal successively with the real and nominal price of commodities, the components of this real (or natural) price and the association between this price and market price. For the purpose of this chapter, the status of these chapters in the logical development of Smith's argument needs careful examination.

These aspects of the theory of value (or price determination) are all directly or indirectly connected to the main argument of the book as a whole, and more specifically, that of its Book I. They also, as Cannan (1937: xxxvi) argued in the introduction to this edition of the *Wealth of Nations*, combine to produce a logical chain of argument connecting the division of labour to the distribution of national income among the various classes of society, the two topics of Book I explicitly mentioned in its title. Division of labour is linked to exchange and the extent of the market, extent of the market is linked to the monetary economy, the monetary economy entails a distinction between real and nominal prices, the basis for real price is exhibited in the nature of natural price, natural price is the point of gravitation for market prices determined by competition in the market while its composition (wages, profits and rent, paid at their natural rates and incurred in producing the commodity and bringing it to market) links directly with the four chapters on distribution which explain the determination of the rates of wages, profits and rent.

> The theory of value, of competition and of [equilibrium] price determination, can therefore be partly seen as a digression in Smith's account of economic progress and growth. It is, however, an essential digression. The account of the measure of value in Book I, Chapter V, as Sylos-Labini (1976) has shown, is needed to enable secular price trends for broad groups of commodities (raw materials, foodstuffs, manufactures) to act as an indicator of the stage of growth arrived at by a particular society. Long-term price variations associated with

productivity changes were the only growth indicator available to Smith in the absence of reliable estimates for national income, let alone reliable time series for national income.

The discussion of competition in the market and its role of aligning market prices to their natural benchmark of production costs (natural prices) is an essential part of Smith's explanation of the organisational principles which regulate market behaviour and which thereby generate that desirable effect of reconciling private interests of butchers, brewers and bakers with the public benefit of bringing about the useful social outcome of procuring dinners for the community as a whole. It presents Smith's picture of the market as a coordinating mechanism, a crucial adjunct to an economic society predicated on the division of labour (cf. Loasby 1996).

The notion of equilibrium is not easy to introduce in this context, although this is often done in the literature on Smith. After all, a careful reading of Book I, Chapter VII, which gives Smith's account of the process of the adjustment of market prices to natural prices, indicates the asymmetrical nature of this process (adjustment is far quicker when market prices are below natural prices, since losses are more difficult to endure than the excess profits which flow from market prices exceeding natural prices). Nor are equilibrium outcomes the object of the analysis (see Groenewegen 1982: 7–9). Smith is interested in the coordinating role of the market bringing the buyers and sellers together and matching the variety of commodities with the diverse wants of the consumers, a coordinating role increasingly necessary with the ever-growing complexity induced by an expanding division of labour, itself essential to secure economic growth and progress.

A third element of Smith's theory of value – the component parts of natural prices – is neatly and simply connected to his theory of distribution. Natural prices of commodities, as indicated previously, are defined as the sum of the wages, profits and rent paid at their natural rates to the labour, capital and land required for their production, including bringing them to market. Aggregate natural prices for a specific period, say a year, measure the national output (revenue) of the society in question and, by definition, comprise the aggregate wages, profits and rent paid to the labourers, capitalists and landlords whose labour and property have combined in producing this output. The natural value of commodities is derived from the distribution outcomes which are separately determined in Smith, a vastly different result from the subsequent marginalist accounts of the relationship between distribution and prices. For Smith, far less of his economics rests on the theory of value than was the case for many subsequent theorists in economics, from Ricardo onwards.

With value, and equilibrium analysis even more, ranked relatively low in the hierarchy of Smith's theoretical objectives, it is no wonder that he has little concern over potential conflicts between increasing returns and the stability of equilibrium or, for that matter, conflicts between increasing returns and competition (cf. Richardson 1975). Examination of such issues cannot be found in Smith's economic treatise. The logic of his argument does not require them, and

they therefore need not get in the way of achieving Smith's objective in presenting a coherent account of the nature and causes of the wealth of nations.

For Smith there was therefore nothing wrong in starting his book with an account of the division of labour, the first cause of the wealth of nations and, in his opinion, by far the most important one. Division of labour in Smith's view was also far from wretched, as were the increasing returns and lower prices which accompanied its introduction and diffusion. Its crucial importance for his system of growth is easily demonstrated by using the simple equation Hicks (1965: Ch: 4) developed for summarising the essentials of Smithian growth economics, that is:

$g = k.p/w - 1$

where g is the growth rate, k is the proportion of the labour force productively employed (the thriftiness condition or saving ratio), p is labour productivity and w the (uniform) wage rate. Growth therefore depends on k, p and w. Smith argued that a rising w was the logical outcome for an improving society and, moreover, a just consequence, since all classes of society deserved to share in the benefits of growth. Smith tended to be relatively pessimistic about the likelihood of a rapidly rising k, given the propensity of government and the more wealthy, especially the landowning classes, to utilise much labour in unproductive activities, hence supporting beliefs about a low role for accumulation in the actual growth process. Such estimates for w and k placed great responsibilities for securing high growth rates on increased productivity of labour, derived from expansion of the division of labour and constrained by the extent of the market. Free trade, which greatly extended the potential market for commodities, hence was a logical corollary of such an analysis of the growth process. Increasing returns and division of labour were therefore the real heroes in Smith's account of economic growth, hence very appropriately given the starring role in his drama of economic development. Competition and the market constituted a crucial part of the supporting cast; equilibrium analysis was hardly to be found in this evolutionary process where growth generated further growth by extending the market and the division of labour. Smith would have found the second part of the title for this chapter well nigh incomprehensible.

Marshall's conflicts on increasing returns, dynamics and competition

A century or so later, Marshall's *Principles of Economics*, designed for a different era and for somewhat different objectives, tackled the problem of competition, equilibrium and economic progress in quite different ways. Issues of competition are featured in its opening chapter, to recur time and time again as an essential part of the growth of free industry and enterprise; equilibrium analysis provides the essential core of the foundations on which Marshallian principles were constructed; progress does not enter that stage fully until Book IV, though its crucial importance is already recognised for the elimination of poverty in the book's opening pages and, more significantly, it takes centre stage in the chapters

which conclude the work. Increasing returns and division of labour likewise feature first in Book IV, while the analytical problems they cause are candidly discussed throughout and, more specifically, in the text of Appendix H.

Marshall's analytical starting point was the nature of competitive equilibrium of supply and demand. This was part of the first substantial output of his apprentice years in economics of the 1870s and became the kernel of the analysis of the *Principles*, its Book V together with segments of Book III. From these, as he wrote to Colson in the middle of 1909 (Whitaker 1996: letter 1946), the argument moved forward and backward. Varying time periods and varying relationships between costs and quantities produced (laws of returns) complicated the analysis considerably from the outset, Marshall's worries and doubts about these complications seemingly growing with age. This is shown, at least in part, in the genesis of the *Principles*, as it gradually moved from the relatively confident first edition to the (implicitly) more sceptical eighth (and definitive) edition, if anything Marshall did could be called definitive in this way.

Although complex, the difficulties from varying time periods could be relatively easily handled in Marshall's analytical structure. This applied especially to those associated with the market (temporary equilibrium) and short periods. The long period produced greater problems. As Joan Robinson once indicated, at a time when she was not making 'a wrong turning' (with apologies to Brian Loasby [1989: ch. 5]), 'Marshall had a remarkable intuitive genius, and he knew by instinct the one case where you can say something [definite] … The short period supply curve, under strict perfect competition, where demand always rises, never falls'. For Joan Robinson, this was not only demonstrated in Marshall's Appendix H; it was clear from his fuzzy ('tear gas'-saturated) treatment of the long period, for which few precise conclusions can be reached, and where every result has to be seen as provisional or, as in the case of the supply curve, non-existent (Robinson 1953: 13–14).

It is well known that increasing returns are the analytical villain of Appendix H. Increasing returns create grave limitations for statical equilibrium analysis. Their presence destroys the significance and meaning of 'margin of production', it makes the notion of marginal product meaningless, it makes supply curves irreversible with respect to time, makes stability of equilibrium very complex, and last, but definitely not least, makes an industry supply curve with non-homogeneous plant and firms of different size impossible to construct. The last proposition is implicitly demonstrated in the long concluding footnote introducing Marshall's device of the 'particular expenses curve' (which emphatically is not to be confused with a supply curve). So much for equilibrium analysis and increasing returns – the former's statical basis and the latter's evolutionary credentials mix like oil and water.

Increasing returns (and the broad conception of the division of labour and specialisation which makes them possible for Marshall, as shown in Book IV, Chapters VIII–XII) also create a potential problem for the maintenance of a competitive environment. Marshall was fully conscious of this problem but dismissed it, largely on empirical grounds. His 'inductions' into factories and

industrial regions to which parts of his summer vacations were invariably devoted (as he wrote to Flux in 1898 – in Whitaker 1996: letter 564), shook his confidence in Cournot as an economist, because his analysis of the logical (mathematical) consequences of increasing returns for competition 'led to things which do not exist and have no near relation to reality'. Experience showed that increasing returns and competition could co-exist, provided that competition was defined in terms of freedom of entry and not as the 'logical' and simplifying theoretical construct of 'perfect competition' (which for Marshall likewise had 'no near relation to reality').

If Marshall had been a young Hicks, he would have denounced increasing returns and division of labour as wretched for economic theory, and hence to be banished from its principles; if he had been a Samuelson he would never even have bothered with these matters, and moved straight to the 'analytically rewarding' case of universal diminishing returns and imperfect competition. However, Marshall was Marshall, and that type of solution appalled him. It offended his analytical honesty not to admit the severe theoretical problems caused by increasing returns. More significantly, abandonment of increasing returns would have destroyed a major foundation for his belief in the possibilities of economic progress and the elimination of poverty.

It should here be recalled that Marshall's social starting point in economics was his belief in the potential for improvement of the working classes and for the lifting of living standards and standards of life for all. For Marshall, this was not excess Victorian baggage (as Schumpeter once described it), it was the major *raison d'être* for economic study (the other being the scientific need to comprehend the operations of economic phenomena and institutions). On his own account, Marshall had come to economics because an understanding of economic phenomena was essential for arguing the possibility of working-class improvement. For this, he quickly learned, the substantial presence of increasing returns was an essential condition, and a feature which had to be present in actual economic organisation, evolution and development. If it was not, and diminishing returns ruled the roost (as in the subsequent theoretical constructions of Hicks and Samuelson), then the Malthusian spectre could not be combated by the effective remedy of economic progress. Political economy, as Carlyle, Ruskin and others had so strongly affirmed, was then appropriately described as the 'dismal' science. Increasing returns and the division of labour were crucial building blocks in the construction of Marshall's vision for a better future for all, that is, explicitly including the working class.

Marshall's economics therefore exhibits a somewhat peculiar dual personality. On the one hand there is the imposing theoretical structure built on the notion of competitive equilibrium of supply and demand for various time periods and, with equally varying degrees of generality, differing laws of returns. This structure is never formally abandoned, even if its preliminary nature and unsatisfactory statical foundations were fully admitted during the 1890s and unfavourably contrasted with the Mecca of economic biology. On the other hand, there is the elevated theme of economic progress, incorporating

evolutionary notions of the adaptive qualities of the economic organon and holding out strong prospects for improvement, not only in the material standards of human life, but also in human nature itself. Whether Marshall the warm-hearted visionary, or Marshall the cool-minded analyst, triumphed with the final curtain of the *Principles* is not always easy to say. This part of his work reveals a conflict which for him, in any case, was difficult to resolve. For Marshall, increasing returns and division of labour were therefore only to be seen as 'wretched' from the dilemma they produced for him in the profession of his beloved economics; they were to be seen as glorious for the prospects they held out for the future of mankind in general, and of the working class in particular.

Recovering division of labour: Allyn Young's rehabilitation of Smith and Marshall

As Blitch (1983: 360) succinctly put it, Allyn Young's discussion of 'increasing returns in an advanced industrial economy … [is] an updated version of the growth model expounded by Adam Smith, modified by Alfred Marshall'. A look at Young's treatment of equilibrium, competition, progress and increasing returns therefore naturally follows the previous discussion of Smith and Marshall on those topics. Young's famous 1928 paper in which this discussion is put forward appears to have been directed at two types of economist which he had encountered in his practice as an academic economist.

One was Frank Knight who, in his thesis on business profits, had written that perfect competition required rising costs as supply increased, and who, in defence of competition, argued that new supplies would come through additional, new firms rather than through the growth in the size of established firms, so that no economies of scale were realised and supply curves rose with increasing output. Young wrote in the margin of Knight's thesis (which he was supervising) that this was a quite inappropriate response to the problem of increasing supply:

> Note if the increased supply is a response to an increased demand, 'External economies' of certain sorts will be realised. … The point is that certain economies are *possible only with large demand*. *An increased output means more plants*, of course, but the important thing is that they are not 'similar establishments' but, in general, more highly specialized establishments. As you know I differ from your notion of decreasing costs. I hold them to be real, not necessarily tending to monopoly, and one of the most important economic phenomena of modern times. They are not a matter of the 'proportioning of factors'. They are, in great part, a matter of the economies of the *division of labor* which as Adam Smith observed, is limited by 'the extent of the market'.
>
> (cited in Blitch 1995: 169–70, Young's emphasis)

The other type of economist was those involved in the cost controversies of the 1920s who attempted to show that, since competition was incompatible with increasing returns, the necessary outcome was the development of monopolies and that, as a consequence, monopoly characteristics ought to intrude more fully into the analysis of business behaviour with respect to prices and output.

To both sets of economic arguments Young replied that they contravened Smith's great theorem 'that the division of labour depends on the extent of the market'. He took this proposition as his 'text' for the 1928 presidential address to Section F of the British Economic Association or, as he put it alternatively, the theme on which he wished to present some variations (Young 1928: 529). These variations were to be limited to two related aspects: 'firstly, the growth of indirect or roundabout methods of production and, secondly, the division of labour among industries' (*ibid.*). Inventions, the part of the theorem on which Smith had concentrated, were a minor part of this process. The development of machine tools (as Hegel, Ure and Marx had perceived early on), and hence the development of specialised firms and processes, were the critical aspects of the division of labour as a force in progress, not the division of manufacturing processes *per se*, as in the case of Smith's famous pin example.

Young added a further feature to Smith's theorem, by expanding on the underlying notion of the market. If markets are 'buying power, the capacity to absorb a large annual output of goods' (Young 1928: 533), then markets become defined by the volume of production and 'the division of labour depends, in a non-tautological way, on … the division of labour' (*ibid.*). As Marshall had sensed, but not really developed, Young argued that these broader aspects of increasing returns made it not very amenable to the customary supply and demand analysis of price determination and, given the cumulative nature of the process, not very amenable to conventional equilibrium analysis. The last problem can be grasped intuitively. Static equilibria, stable positions of rest, stand in stark contrast to the never-ending process of change induced by genuine division of labour, where the adaptations of one set of firms lead to new adaptations and developments by others, a veritable Heraclitean state of flux.

Young gave several suggestions on how to proceed to a more formal analysis of the phenomenon. One utilising Pareto's apparatus of indifference and production possibility curves was appended as a long note, the contents of which were probably not inflicted on his audience. The other mode of inquiry was to investigate

> the operations of reciprocal demand when the commodities exchanged are produced competitively under conditions of increasing returns and when the demand for each commodity is elastic, in the special sense that a small increase in its supply will be attended by an increase in the amount of other commodities which can be had in exchange for it. Under such conditions an increase in the supply of one commodity is an increase in the demand for other commodities, and it must be supposed that every increase in demand will evoke an increase in supply. The rate at which any one

> industry grows is conditioned by the rate at which other industries grow, but since the elasticities of demand and of supply will differ for different products, some industries will grow faster than others. Even with a stationary population and in the absence of new discoveries in pure or applied science there are no limits to the process of expansion except the limits beyond which demand is not elastic and returns do not increase.
>
> (Young 1928: 533–4)

Young's subsequent paragraph indicated the stringent conditions required for such an analysis. Progress needed to be unimpeded and frictionless, not dependent in part on a process of trial and error. The organisation of industry needed to be as 'economical' as possible, its realisation of increasing returns progressive and continuous even if, for technical reasons, not always at an even rate. Perfect knowledge and foresight could hasten the process, but the scope for its acceleration was highly restricted. People tend to be resistant to change and geographical relocation takes time, as does the concomitant accumulation of capital. (The last consideration, Young emphatically warned, did not enable equilibrating forces to re-enter by the back door through the growth in costs associated with speeding up relocation and capital accumulation.)

A further qualitative change came with this process which, for Young, allowed the industrial revolution to be perceived as an orderly process derived from prior changes in industrial organisation and the creation of expanded markets. This fundamentally changed the relationship between industry and trade. The growth in output from improved industrial organisation meant that markets had to be found, and the search for potential markets, as well as their nature and development, became a crucial part of the planning and management of large firms. (Part of this change was recognised in Marshall's occasional emphasis on the role of marketing as well as of production in the modern firm and, perhaps more significantly, in his insistence on acknowledging the potential influence of activities on wants, or of production on consumption.) Allyn Young made this aspect of contemporary industrial organisation far more explicit in his exploration of increasing returns.

These organisational features of his analysis of the division of labour created further difficulties for the conventional analysis of the firm. For example, notions of industry as in printing, the illustration selected by Young, became very complex concepts involving many aspects of vertical integration. The representative firm (then an analytical tool still very much alive in a Marshallian-dominated industry economics) started to lose its identity when its foundation of an identifiable industry became more ephemeral. These consequences were not greatly elaborated by Young in his printed address, but were reiterated in the three basic points with which he wanted to leave his audience by way of conclusion.

> First, the mechanism of increasing returns is not to be discerned adequately by observing the effects of variations in the size of an individual firm or of a

> particular industry, for the progressive division and specialisation of industries is an essential part of the process by which increasing returns are realised. What is required is that industrial operations be seen as an interrelated whole. Second, the securing of increasing returns depends upon the progressive division of labour, and the principal economies of the division of labour, in its modern forms, are the economies which are to be had by using labour in roundabout or indirect ways. Third, the division of labour depends upon the extent of the market, but the extent of the market also depends upon the division of labour. In this circumstance lies the possibility of economic progress apart from the progress which comes as a result of the new knowledge which men are able to gain, whether in the pursuit of their economic or of their non-economic interests.
>
> (Young 1928: 539–40)

A variety of factors, of which Young's sudden death was the most important, prevented substantial exploitation of these insights. Young's work was generally neglected, if not forgotten. First, the theory of imperfect competition, and then the revolutionary developments in macroeconomics initiated by Keynes prevented a consolidated development of Young's insights on this important issue. However, many economists believed that his endeavours lay outside the realm of perfect competitive, static equilibrium analysis, and were therefore not worth pursuing. Irrespective of cause, they had a rather long gestation period and were only sporadically recalled, sometimes with brilliant effect, as in the critiques of equilibrium analysis they inspired in Kaldor (1972; 1975).

The wrong turning and progress in economics

Brian Loasby has seized on these essential features of the analysis of economic progress by the three giants of economics from the eighteenth, nineteenth and twentieth centuries, without being unduly concerned about their detrimental impact on equilibrium analysis under perfectly competitive conditions. Smith's starting point of the division of labour is described by him as capable of providing a 'comprehensive agenda for economics [which] does not coincide with the agenda of contemporary mainstream economics' (Loasby 1996: 300). Smith links the benefits from an ever-growing division of labour to the coordinating role of the market – the most fundamental aspect of the competitive market process as he saw it. This entailed, as Loasby (1996) also indicates, 'an embryonic version of entrepreneurship', the projector as organiser as it were; it also accentuated the growth of knowledge as part of the process of economic progress (a phenomenon not exclusively analysed by the Austrians, but preached especially extensively by Marshall in his important but all too often neglected Book IV). The wrong turning for Loasby came in the period 1920–33, with the full restoration of equilibrium analysis in the artificial framework of imperfect competition as constructed in Cambridge (England) by the 'Marshallians'. At that other Cambridge, the different analysis by Chamberlin

which had benefited from supervision by Allyn Young, absorbed the dynamics of the process and the need for marketing as 'creating customers' to enable the extent of the division of labour to continually grow (see, for example, Chamberlin 1933/62: 133–4, Appendix B, esp. 236, 238; Appendix H, 316–18).

Loasby's counter-factual history of twentieth-century economics (Loasby 1995) provides further insights into the 'wrong turning', or diversion of the mainstream, into the theoretically rewarding, but practically barren world of perfect competition. This starts with an account of the wrong choice by Walras in abandoning the complex path-dependency approach involving real-world processes of trial and error, in which entrepreneurial income depends on the success of the conjectures they make. Instead Walras chose the route of an inevitable market-clearing scenario from an exchange of pledges between producers and prospective purchasers. Walrasian economics during the late 1930s triumphed and defeated its major competitor in Marshall's economics, whose messages on these subjects had been aborted by his more dogmatic followers, especially by Pigou. Although Marshall remained flirtatious with the attractiveness of equilibrium analysis (both general and partial) and succumbed sufficiently to make this the central part of his major work, his devotion to a practical economics never faltered, nor did his belief in the need therein to keep in focus the reality of industrial progress in organisation and the search for knowledge; in division of labour and increasing returns. Not for Marshall a Samuelsonian trade-off between 'the optimality conditions that perfect competition can ensure' and the increasing returns which can ensure a decent future in terms of living standards and standards of life for the working classes. As organiser and coordinator, the free market was necessary to secure such results from industrial progress: but such a market should be dynamic and marketing-oriented, and not the rigorous, sterile, static and stultifying caricature of a market based on the perfectly competitive firm.

The Smithian roots of this heretical programme are made abundantly clear in Loasby's thoughts on this topic. Smith's work should be seen as the inspiration for Marshall's analysis of production and supply, modified and supplemented by his acceptance of the evolutionary theory of Spencer and Darwin, and by the data of technological advance in the widest sense from an industrial experience which interprets the process of division of labour and extent of the market in a late Victorian and Edwardian manner. But as Loasby (1989: 48–9) pertinently comments, the reading of Marshall on growth and production is greatly enriched by placing it squarely upon its Smithian foundations.

To my knowledge, Loasby has said little to explain why Allyn Young had so firmly grasped these essentials of the Smithian and Marshallian heritage. There are in fact no simple answers to this question. Young's institutionalist and historical educational background, at the University of Wisconsin with Ely and Turner, instilled in him the view that 'economic life is in a state of continual flux' (Blitch 1995: 9) and therefore never in that position of stability and rest required to make statical equilibrium analysis appropriate to economic argu-

ment. Young's deep and enduring interest in, and knowledge of, the great economic classics almost certainly provides another explanation. A fine example of this knowledge occurs in his reference to Quesnay and Adam Smith in a letter to Frank Knight in 1926 (and cited by Blitch 1995: 145). Furthermore, Young's friendly and continuing disagreement with Knight on increasing returns and competitive theory throughout the 1920s most certainly provided a useful starting point for writing his 1928 presidential address on increasing returns and economic progress, particularly since Young emphatically rejected the alternative, Sraffian solution to this problem in terms of creating 'a world of monopolies'. Such a background made it difficult to dismiss increasing returns as 'wretched' in the name of theoretical rigour and purity.

The above summary account of some key developments in the analysis of economic progress and increasing returns has in addition provided some insights into the minds and methods of their respective authors. First of all, the choice of problem to highlight and investigate, for Smith, Marshall and Young, revealed their relative lack of concern with the theoretical neatness associated with an equilibrium outcome in a perfectly competitive framework. Unlike economic progress and increasing returns, this did not enter their vision of economic reality. Their practice in handling this problem suggests further similarities both equally congenial to the Loasby view of good economics. One comes from the high institutional content of their account in terms of available technology, organisational aspects and industrial structure. The second is their stress on knowledge and information as crucial elements for explaining the process of progressive change. It is not surprising that such matters also feature strongly among Loasby's 'useful spots on which to stand' (1989: ch. 12) when seeking answers to real economic problems.

References

Blitch, C. P. (1983) 'Allyn Young on Increasing Returns', *Journal of Post-Keynesian Economics*, 3, 359–72.

——(1995) *Allyn Young, The Peripatetic Economist*, New York: St Martin's Press.

Cannan, E. (1937) 'Introduction' to A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Modern Library edn, New York: Modern Library.

Chamberlin, E. H. (1933/62) *The Theory of Monopolistic Competition*, 8th edn, Cambridge MA: Harvard University Press.

Groenewegen, P. D. (1977) 'Adam Smith and the Division of Labour: A Bicentenary Estimate', *Australian Economic Papers*, 16, 161–74.

——(1982) 'History and Political Economy: Smith, Marx and Marshall', *Australian Economic Papers*, 21(38) 1–17, [above, Chapter 1].

Hahn, F. H. (1973) *On the Notion of Equilibrium in Economics*, Cambridge: Cambridge University Press.

Hicks, J. R. (1939) *Value and Capital*, Oxford: Clarendon Press.

——(1965) *Capital and Growth*, Oxford: Clarendon Press.

Kaldor, N. (1972) 'The Irrelevance of Equilibrium Economics', *Economic Journal*, 82, 1237–55.

——(1975) 'What is Wrong with Economic Theory?', *Quarterly Journal of Economics*, 89, 347–57.

Loasby, B. J. (1989) *The Mind and Method of the Economist*, Aldershot: Edward Elgar.

——(1990) 'Firms, Markets, and the Principle of Continuity', in J. R. Whitaker (ed.) *Centenary Essays On Alfred Marshall*, Cambridge: Cambridge University Press, 108–26.

——(1995) 'Missed Connections and Opportunities Foregone: A Counterfactual History of Twentieth Century Economics', mimeograph.

——(1996) 'The Division of Labour', *History of Economic Ideas*, 4, 299–323.

Lowe, A. (1975) 'Adam Smith's System of Equilibrium Growth', in A. S. Skinner and T. Wilson (eds) *Essays on Adam Smith*, Oxford: Clarendon Press: 415–25.

Marshall, A. (1890) *Principles of Economics*, 8th edn, London: Macmillan, 1920.

Meek, R. L. (1976) *Social Science and the Ignoble Savage*, Cambridge: Cambridge Univeristy Press.

Negishi, T. (1989) *Economic Theories in a Non-Walrasian Tradition*, New York: Cambridge University Press.

Richardson, G. B. (1975) 'Adam Smith on Competition and Increasing Returns', in A. S. Skinner and T. Wilson (eds) *Essays on Adam Smith*, Oxford: Clarendon Press, 350–60.

Robinson, J. V. (1953) *On Re-Reading Marx*, Cambridge: Students Bookshop.

Samuelson, P. A. (1947) *Foundations of Economic Analysis*, Cambridge MA: Harvard University Press.

——(1967) 'The Monopolistic Competition Revolution', reprinted in *The Collected Scientific Papers of Paul A. Samuelson*, ed. R. E. Merton, London: MIT Press, 18–51.

Smith, A. (1776) *An Inquiry into the Nature and Causes of the Wealth of Nations*, bicentenary edn, Oxford: Clarendon Press, 1976.

Sylos-Labini, P. (1976) 'Competition: The Product Market', in T. Wilson and A. S. Skinner (eds) *The Market and the State: Essays in Honour of Adam Smith*, Oxford: Clarendon Press, 20–32.

Whitaker, J. K. (ed.) (1996) *The Correspondence of Alfred Marshall, Economist*, 3 vols, New York: Cambridge University Press.

Young, A. (1928) 'Increasing Returns and Economic Progress', *Economic Journal*, 38, 527–42.

12 Marshall and Hegel[1]

It is well known that in his *Principles*, Marshall acknowledged an influence of Hegel in the context of the 'notion of continuity with respect to development', and that Hegel's *Philosophy of History* is cited on a number of occasions in the material on the growth of free industry and enterprise in what became Appendix A of the *Principles* from the original Book I, Chapters II and III. In addition, in Marshall's remarks on the development of economics, Hegel, together with Goethe and Comte, is praised as one who applied to the social sciences the notion 'that the laws of the science must have a development corresponding to the things of which they treat' (Marshall 1961: I, ix, 724n, 730n, 733n, 764).

Most of these Hegel references in the *Principles* drew on earlier work. Hegel's application of the notion of relativity of scientific laws to the sciences 'which relate to man' had been earlier referred to in Marshall's inaugural lecture (Marshall 1885: 154); references to Hegel's conceptions of 'subjective freedom' and 'objective freedom' in section 4 of Appendix A of the *Principles* were first made in a lecture on some features of American industry which Marshall gave to the Cambridge Moral Science Club in November 1875 after his visit to the United States earlier that year (reproduced in Whitaker 1975: II, 375–6). Although not explicitly acknowledged in the printed version, Hegel's influence is also apparent in the 1879 Gilchrist lecture on 'Water as an Element in the National Wealth' (Marshall 1879: 138–41), as has been noted by several persons.[2] This shows that the references in the *Principles* derive largely from Marshall's earlier, and considerable, study of Hegel's *Philosophy of History*.

The above view also conforms to the secondary evidence available on Marshall's acquaintance with Hegel. In his biographical memoir on Marshall, Keynes (1925: 11) wrote: 'Hegel's *Philosophy of History* greatly influenced him', a statement which Keynes supplemented in a footnote. This referred to conversations he had with Marshall shortly before Marshall's death, which 'dwelt especially on Hegel's Philosophy of History' and the days in the late 1860s of his appointment to a St John's Moral Sciences Lectureship through 'the friendly action of Dr. Bateson', then Master of St John's College, Cambridge. Scott (1924: 4), likewise in an obituary, links Marshall's guiding principle, 'continuity' (and indirectly the motto *natura non facit saltum*)[3] to Hegel, and in particular

Hegel's *Philosophy of History* with respect to 'the development of human institutions and the humanistic sciences'. Finally, Mary Paley Marshall (1947: 20) recollected Marshall's lectures on economics in the early 1870s as a combination of 'theory … [and] … the History of Economics, Hegel's Philosophy of History and Economic History from 1350 onwards, on the lines of the Historical Appendices to the *Principles*'. The Marshall Library in Cambridge contains a number of items from this period which illustrate Mary Paley Marshall's apt description. These include one of the lectures on political economy for women which she attended as a Cambridge student in 1873, and an incomplete manuscript seemingly intended as a set of lectures on method and the history of economics, probably written around 1871.[4]

Marshall's use of Hegel's *Philosophy of History* is of interest to the historian of economics for a variety of reasons. In the first place, an examination of the use he actually made of Hegel can test his claim that biological influences 'represented in Herbert Spencer's writings' and 'those of history and philosophy, represented by Hegel's *Philosophy of History* affected, more than any other, the substance of the views expressed in the present book', a claim which at first sight seems rather far-fetched. Second, Hegel's *Philosophy of History* can be said to have informed certain aspects of Marshall's broad vision of economic history and the development of economics, as Mary Paley Marshall noted in her recollections of his 1870s lectures and the use he made of such views in what became the historical appendices of the *Principles*. Third, Marshall's use of Hegel illustrates the manner in which he often used texts, altering their meaning to make them conform more to what he himself wanted to believe on the issue at stake. After a brief section which examines the manner in which Marshall is likely to have become acquainted with Hegel's work, and the extent of his knowledge of Hegel's writings, the various issues mentioned in this paragraph are systematically discussed before providing some other conclusions from this study.

I

Marshall's interest in Hegel, and in particular his youthful fascination with the *Philosophy of History*, is not surprising when it is recollected that the 1860s, the time when he appears to have been introduced to it, was a period of great admiration for Hegel in English philosophical circles. Sidgwick's (1886 [1906]: 278) *Outlines of the History of Ethics* indicates that Hegel's influence on English ethical thought did not become manifest until the third quarter of the nineteenth century, largely as a result of the publication in 1865 of J. H. Stirling's remarkable book, *The Secret of Hegel*. The more general introduction of Hegel to English philosophy thereby coincides precisely with the second half of the 1860s, when Marshall turned away from mathematics and the natural sciences towards the social or moral sciences, that is, when he gradually moved to the study of political economy via metaphysics, ethics and psychology (Keynes 1925: 5–10; Whitaker 1975: I, 5–12). It is interesting to note that two of Marshall's contemporaries at Cambridge in the moral sciences, Sidgwick and

Stephen, were likewise busily studying Hegel at this time, though unlike Marshall, they relatively quickly abandoned an initial admiration for Hegel.[5]

Contrary to Sidgwick's general perspective on the beginning of serious Hegel studies in England, Hegel's work had been studied in the 1840s by a number of persons who were to exert an influence on Marshall. Benjamin Jowett, the famous Master of Balliol and from the late 1870s an increasingly close friend of the Marshalls, has the distinction of being the first Englishman to have seriously studied Hegel's works (Faber 1957: 24, 177–83). Although Jowett may have directly, and indirectly (via T. H. Green), influenced Marshall's continuing interest in Hegel's philosophy to the extent that Jowett could praise Marshall on the appearance of his *Principles* on 'the considerable element of Hegelianism in the book',[6] Jowett is not likely to have been the original source of Marshall's interest in Hegel.

It is far more likely that this role was supplied by F. D. Maurice, who, as Marshall recalled to the biographer of Sidgwick, had been the leading force in the Grote Club when Marshall had first been invited to join it in 1867 (Sidgwick 1906: 137). Maurice himself had been made acquainted with Hegel's work in the late 1840s, and was particularly impressed with the *Philosophy of History*. This book he had found valuable because from it, so Maurice argued in 1848, 'glimpses into his [i.e. Hegel's] philosophy' could be obtained (Maurice to Berry, *c*.1848, in Maurice 1884: I, 467–8). In 1886, when Sidgwick was thinking of studying Hegel himself, he indicated in this context that only Maurice among the Cambridge philosophers on the Board of Moral Science, had by then studied Hegel at first hand. Marshall's acquaintance with Hegel must therefore have sprung from these philosophical influences gained through the Grote Club.[7]

As shown in subsequent sections, during the late 1860s or very early 1870s, Marshall appears to have studied Hegel's *Philosophy of History* rather intensively, making numerous extracts from the work for later use.[8] Some of these appear as citations in his later published, and unpublished work, enabling identification of the edition of Hegel's book he used. Although during this time he also started lessons in German, initially with Sidgwick's teacher in Dresden, the text which Marshall used was the English translation by Sibree, which had appeared in 1861 as part of Bohn's Philological (and Philosophical) Library. There is no evidence that Marshall had studied other works by Hegel; his study seems to have been confined to the *Philosophy of History*. In one of the early notebooks preserved in the Marshall Library, there is a reference to a need to 're-read Hegel' in the context of Marshall's studies of the early history of economics. This may suggest that Marshall did not himself own a copy of the book; in any case no books by Hegel have been preserved among his personal collection housed in the Marshall Library.[9]

Several later occasions during which Marshall may have revived his youthful interest in Hegel's philosophy may be noted. The first of these is the four terms he spent in Oxford as the successor to Toynbee at Balliol from late 1883 to 1884. Marshall's strong sympathies with the 'philanthropic humanitarianism'

underlying the social reform tendencies of T. H. Green, whom he greatly admired as a teacher (as reported in Sidgwick 1906: 394; cf. Edgeworth 1925: 71) may have induced a renewed interest in reading Hegel, one of Green's acknowledged inspirations for his ethics and what has become known as his 'politics of conscience' (Richter 1964: esp. 273–90). In the context of his discussions of the relationship between economics and ethics in the introduction, largely designed to disassociate certain propositions of modern economics from utilitarian ethics, Marshall (1961: I, 17n; XI, 136–7) referred to Green's *Prolegomena to Ethics*. Only in the third and fourth editions of the *Principles* was this reference to Green's work supported by extensive quotation on the point in question, but it is interesting to note that in this short-lived version of the note, Green's position on the subject is described as 'uncompromising' (see Marshall 1898: 78n).

Likewise, the close proximity to Jowett which the Balliol position implied, may have induced renewed study of Hegel, a possibility heightened by the comments Jowett made about the Hegelianism of Marshall's *Principles* when it appeared. There is, however, no evidence for such a conjecture in Marshall's work for this period. For example, the outlines of the lectures he was giving at Oxford would have permitted renewed emphasis on Hegel's *Philosophy of History*, but, from their outlines as reported by Whitaker (1972: app. C) do not appear to have done so. Another occasion for awakened interest in Hegel on Marshall's part may have come from his student, McTaggart. McTaggart had graduated with a first in moral sciences in 1888, though as Marshall subsequently put it, he was only 'half caught' for economics. McTaggart became one of Cambridge's leading Hegelians, and wrote *Studies in the Hegelian Dialectic* in the 1890s, of which he presented a copy to Marshall. Although preserved in the Marshall Library, this book contains no annotations in Marshall's handwriting and he may not even have read it.[10] Finally, Marshall may have been inspired to a re-reading of Hegel from Bonar's account of him in *Philosophy and Political Economy*, which contained a substantial chapter on the views of the German philosopher relevant to economics. Marshall's correspondence with Bonar as reprinted by Pigou (1925: 373–7) contains no references to this book, let along any comments on Bonar's treatment of Hegel, while his personal copy of Bonar's (1893) book, contains no annotations.

II

Hegel's considerable emphasis on 'subjective' and 'objective' freedom[11] in the progressive development of human history is undoubtedly one of the major features of his work that appealed to Marshall. Freedom itself is presented by Hegel (1956: 40) as something which does not exist as original or natural, and which only gradually develops and perfects itself within the progress of history. 'Law, Morality and Government, and they alone' are presented by Hegel (1956: 38) as 'the positive reality and the completion of Freedom' or, as he put it elsewhere, 'Society and the State are the very conditions in which Freedom is

realised' (Hegel 1956: 41). Two aspects of freedom are distinguished by Hegel: the subjective and the objective. Hegel distinguishes these as follows.

> Substantial [that is, objective] freedom is the abstract, undeveloped Reason implicit in volition, proceeding to develop itself in the State. But in this phase of Reason there is still wanting personal insight and will, that is, subjective freedom; which is realised only in the Individual, and which constitutes the reflection of the Individual only in his own conscience. Where there is merely substantial freedom, commands and laws are regarded as something fixed and abstract, to which the subject holds himself in absolute servitude. These laws need not concur with the desires of the individual, and the subjects are consequently like children, who obey their parents without will or insights of their own. But as subjective freedom arises, and man descends from the contemplation of external reality into his own soul, the contract suggested by reflection arises, involving the Negation of Reality.
>
> (Hegel 1956: 104)

Earlier, the subjective aspect of freedom is contemplated when freedom is interpreted 'to consist in the individuals of a State all agreeing in its arrangements' (Hegel 1956: 43). Hegel, however, also identifies this subjective element of freedom with the 'means for realising' the ideal of freedom, as reflected in knowledge and will, with its 'life, movement and activity' (1956: 48). The State is then recognised 'as the moral Whole and the Reality of Freedom' or 'the objective unity of these two elements'. The state as the form of reality in which the individual has and enjoys his freedom is therefore more than the subjective view which presents the state as the sum of the subjective will of its subjects, and as a bargain in which some freedom is traded for the enjoyment of limited but secure freedom (1956: 38).

Hegel's intricate depiction of the gradual realisation of absolute freedom through the dialectical interaction between its subjective and objective elements as exemplified in its various components of law, morality and government, provides part of the classificatory scheme by which Hegel depicts the development of history in the four stages of its movement from East to West. History evolves originally in the East (China, India) to Central Asia (the Greek world, but earlier Persia, Egypt, Israel) to the third phase of the Roman world, and the final, ultimate stage of the German world. With respect to subjective and objective freedom, Hegel depicts this process very explicitly (Hegel 1956: 18–19). Africa and the New World are ignored in this history, the former because 'it is no historical part of the world … [and] … has no movement or development to exhibit' (1956: 99); the latter because it is 'only an echo of the Old world' and has only a future in 'the dreams to which it may give rise' (1956: 87). Earlier, Hegel (1956: 86) had recognised America as the land of the future in which history 'shall reveal itself'. Climatic and geographical features merge in this account with moral, social, political and even

economic aspects, to indicate the manner in which history travels from the East to its absolute end in the West, that is Europe.

In reading Hegel's view of the course of the world's history, Marshall seems also to have been greatly impressed with Hegel's opinion that 'The mutations which history presents have been long characterised in the general, as an advance to something better, more perfect'. In the subsequent discussion of the actual history through its four stages from East to West, Hegel attempts to demonstrate 'a *real* capacity for change, and, that for the better – an impulse of *perfectibility*' (Hegel 1956: 54). The fact that this process of progress is only revealed by history, and is only possible by the gradual evolution to successively higher stages via a series of 'conflicts, discrepancies and their successive corrections', to use the words of Jones (1975: 119), would likewise have appealed to Marshall. Although Marshall does not seem to have been familiar with Hegel's method (the science of logic), he probably wittingly transformed Hegel's view of progress through conflict, discrepancy and correction into a Darwinian process of evolutionary improvement through survival of the fittest and competition for subsistence (cf. Darwin 1859 [1884]: 414). Such a transformation of Hegel's *Philosophy of History* with respect to the actual course of world history undoubtedly assisted Marshall's bracketing of Hegel and Herbert Spencer in the context of continuous evolution, as he did explicitly in the preface of his *Principles* (Marshall 1961: ix). He himself adapted this view of progress he attributed to Hegel through what he saw as the healthy and correcting impact of competitive struggle in the gradual 'growth of *free* industry and enterprise' (Marshall 1961: 723, my italics). Hegel's view (1956: 19–20) that 'History is the progress of the consciousness of freedom' (cf. Hartman 1953: xxxi) equally applied to economic history as the 'growth of economic freedom' in the manner in which it was depicted by Marshall (cf. Parsons 1932: 219).

Hegel's very positive, and much misunderstood view of the state, may also have been a factor which appealed to Marshall when he grappled with the problem of the role and functions of the state in economic life. This aspect may likewise have been one of the more important Hegelianisms which Jowett recognised in the *Principles*, for instance in the association between self-government, freedom and the growth of towns and Marshall's linking of the rise of political freedom in England with the emergence of a spirit of free enterprise and industry (Marshall 1961: 734–5; 744; cf. Hegel 1956: 401–2). As already indicated in the opening paragraph of this section, Hegel understood by his concept of the state the 'culture, organisation and civilisation of freedom', not the authoritarian monsters with which certain philosophers have tried to saddle him.[12] Such a state, envisaged as the preserver and promoter of a higher morality, and the realiser of genuine freedom, is a view of the state which can be seen in some fragments of Marshall on government and its functions reproduced by Pigou (1925: 363) in his *Memorials of Alfred Marshall* (and cf. Marshall 1961: 203).

Hegel's comparative method in the context of continuous progress and change is implicitly referred to in a fragment of his lecture notes for 1876 or 1877, dealing with the relevance of the economic conditions in America (which

Marshall had personally studied in 1875). In this context, Marshall argued for comparing corresponding phenomena at different places and times, and 'under the operation of different disturbing causes' as the only possible means of discovering laws of change which include the necessity of being able to predict where the phenomena under investigation have been and 'how they come into their present position'. This view of progress and its laws is likewise relevant to political economy, and had induced economists to investigate history, partly to throw light on the fundamental laws of human nature with which economics is concerned by studying its various manifestations. 'Given its rapid contemporary progress, the study of the present in the United States can teach much about the future of England' (Whitaker 1975: II, 354–5). In his Cambridge lecture (Marshall 1975) on features of American industry in the context of moral progress, Marshall explicitly invoked Hegel in contrasting aspects of contemporary British and American development by linking the first with Hegel's view of 'objective freedom' and the second with 'subjective freedom', a contrast which in Marshall's view is analogous to the Hegelian comparison of India with Persia and of Greece with Rome in the *Philosophy of History* (1956: 18–19, 187–8). This use of America conforms to Hegel's brief description of America as the 'land of the future, where, in the ages that lie before us, the Burden of the world's history, shall reveal itself' (Hegel 1956: 86). Marshall's strong association of 'ethical progress' with 'the conditions of industry', a mutual inter-dependence which he believed to be far closer than commonly thought, is illustrated in quite Hegelian fashion by the objective freedom of England with its conservation of past experience in the form of maxims, proverbs and customs and the 'free arbitrament of man's will … unshackled by outward restraints' which he saw developing, as 'subjective freedom', in the United States (Marshall 1975: 376–7). Perhaps this perspective of progress enabled Marshall to predict more easily the industrial decline of England, something he did with considerable prescience in the 1890s and after.[13] After all, this was nothing but an application of the inevitable march of history which Hegel had so clearly depicted as moving steadily from East to West.

III

Marshall drew on quite specific aspects of Hegel's *Philosophy of History* in his early lectures of the 1870s and subsequently in the historical appendices of the *Principles*. A characteristic Hegelian touch, illustrative of the manner in which Marshall mixed his Hegel with theory, economic history and history of economics, occurs in the last of his lectures to women given in 1873. In one paragraph of notes taken by his wife, Marshall links industrial with ethical progress in the nineteenth century, and in this context makes some observations on what is described as the major theme of world history:

> We shall find that the History of the world is roughly a history of the subordination of custom to competition – of the imparting to man the freedom

> of individual action, of the sweeping away of the network of custom which hindered his action, and of leaving him free to make such contracts as he would. You will find little in history which is not connected with this change depending chiefly on the change in the ethical point of view (on which I must not now touch) and proceeding almost regularly through the Eastern Civilisation and to the Greek and Roman, checked then by the inundations of Teutonic customs and expanding again until the present time.
>
> (Marshall 1873: lecture VI, 30 May)[14]

A different Hegelian flourish ends the 1879 lecture on water as an element in the national wealth. After discussing several ways of including the value of water in estimates of the national wealth, Marshall suddenly switched to emphasising the importance of proximity to water for nations in the history of the world, dwelling particularly on the association between proximity to the sea and the origins 'of most of the world's genius and enterprise'. The importance of water to the 'greatest nations of the world' is therefore far greater than the benefit they obtained from their land. This perspective is illustrated by a brief recapitulation of Hegel's *Philosophy of History* in its second and third stages, and was in itself undoubtedly derived from Hegel's own emphasis on the importance of water, and particularly the sea, in his discussion of the geographical factors determining world history (Hegel 1956: 88–91).[15] Marshall illustrates this aspect of water's importance as an element in national wealth by pointing both to the calamitous impact of land-based invasions of Greece (which drained away 'the highest energy' of that country) and the revival from the torpor of the middle ages in the maritime cities of Italy and the Netherlands, which, 'like the early Greeks, breathed in genius from the sea'. Time prevented Marshall from enumerating the benefits of this nature which England had gained from the sea. These included however, 'her free institutions', and hence, via 'the broadening of civil liberty, [the ability of] individual enterprise and originality to flourish'. Marshall's final sentences in the lecture are likewise Hegelian in their scope, ranging from the more normal economic valuation aspects of water to the requirements for 'man's moral and mental life' of 'the freedom of movement and freedom of communications with others, by land and sea'.

Marshall's discussion of the growth of free industry and enterprise in what became Appendix A of the *Principles* was designed to illustrate how increases in economic knowledge about the manner in which persons earn their livelihood and the character of that livelihood exert an influence 'on the quality and tone of life'. This section of the work cited Hegel's *Philosophy of History* on a number of occasions, reminiscent, as Mary Paley Marshall was later to recall, of the manner in which Marshall had mixed his Hegel with theory, economic history and the history of economics in his early lectures of the 1870s which she attended. Generally speaking, Marshall's use of Hegel in this historical discussion is quite specific and largely confined to remarks relevant to early history, including economic history. Although, as Guillebaud has shown (Marshall

1961: II, 722–35), the changes to what became Appendix A over the eight editions are, relatively speaking, quite insignificant; two of these changes affect his five references to Hegel. In combination, these deletions tend to suggest that Marshall may have been anxious to reduce the visible *philosophical* influence of Hegel on his work,[16] and to maintain him simply as a valuable historical source on Greek and Roman characteristics, the German national spirit, and the importance of the Reformation as a force in raising the importance of individuality and freedom as social values.

This can be illustrated in the first instance by Marshall's removal of references to Hegel's concepts of 'objective and subjective freedom' from notes in the *Principles*, though it will be recalled that in 1877 these concepts had been explicitly used by him in his discussion of features of modern American industry. In a brief paragraph on freedom (Marshall 1961: 198), a note to the word 'self-mastery' as the 'highest form of Freedom', which linked it to Hegel's concept of 'subjective freedom', was deleted from the second edition onwards (Marshall 1961: II, 299). More importantly, and reminiscent of the analogies drawn in Marshall's American lecture, the fundamental opposition between the Greek and Roman character to which Marshall drew attention in section 4 of his history was explained in the first editions of the *Principles* in terms of Hegel's notions of 'objective' and 'subjective freedom', in which Marshall offered definitions of what he thought Hegel to mean by these concepts. From the third edition, this note was replaced by one which cited some remarks by Hegel on the subject of 'the fundamental opposition between the Greek and Roman tempers', in which Marshall also took the opportunity to refer approvingly to Roscher's (1874 [1924]: 818) praise of Hegel's services to German historical economics, thereby enhancing the respectability of Hegel's views on certain subjects as a widely accepted historical, rather than philosophical, source (Marshall 1961: 730, nl).[17]

The other – implicit and explicit – references to Hegel in the economic history segment of Marshall's *Principles* invoke Hegel's historical perspectives. Hegel is cited as one of many sources (the others include Knies, Buckle, Aristotle and Montesquieu) on the influence of physical surroundings, particularly climate, on race and character. Although not specifically mentioned, Hegel is likewise implicitly recalled in Marshall's discussion of aspects of early civilisations, such as, for example, his reference to economic aspects of Hindu religion, and his remark on the proclivity of the Greeks 'to breathe in the full breath of freedom over the sea' (Marshall 1961: 728). The last reminds of his Bristol lecture on the importance of water, a lecture whose contents in this respect can also be usefully recalled in Marshall's subsequent reflections on the role of the sea in his comparisons of Persia with Greece, Spain with Holland (Marshall 1961: 739–40) and the settlement of England by the strongest races as a result of her geographical location (cf. Marshall 1923: 48).[18] Hegel is referred to also on the 'inner contradiction' of 'stoicism', which could only be resolved when 'inward perfection' was recognised as only attainable through 'self renunciation' (Marshall 1961: 733).[19] In addition, he is cited on his apt

discussion of the Teutonic spirit, in terms of energy, freedom, self determination, heartiness and fidelity (Marshall 1961: 733, n1) and mentioned in the context of the importance of the Reformation both in the context of the 'tone it gave to industry' and its prerequisite qualities 'for the highest spiritual progress' (Marshall 1961: 742, n3). Marshall's earlier (1961: 176) enumeration of a sequence linking lack of success in Physiocratic reforms with the violence and bloodshed of the French Revolution and its consequences for delaying 'the march of freedom in England', hence the impediment of 'the dial of progress … by the span of at least a generation', seems to be a further remnant of his reading of Hegel (see Hegel 1956: 453–5).

Marshall's references to Hegel are invariably rather imprecise in those cases where explicit references are made to the text. Cases where Hegel's actual words are quoted are confined to two. The footnote on the comparison between Greece and Rome (Marshall 1961: 730, n1), which draws on a number of phrases (Hegel 1956: 252–3) is one of these; the citation of Hegel on the German spirit (Marshall 1961: 733, n1) is the other (Hegel 1956: 343, 350–1, 353). This characteristic of Marshallian Hegel citation tends to reinforce the supposition that its source was the notes he had taken during the late 1860s or early 1870s, since the citations in question invariably draw on this older work, as shown by the notes extant in the Marshall papers.

In addition to the use he made of Hegel in his 'economic history', Marshall used Hegel in his examination of the development of economic science. In the introduction to this paper it was already indicated that both in his inaugural lecture and in Appendix B of the *Principles* on the growth of economics, Hegel is mentioned together with Goethe and Comte as emphasising the association between the development of a social science and the subject matter of that science. Since society (and human relations) have developed in terms of distinct stages (for Hegel, from the first stage of the East, to the Greek world, the Roman world and ultimately the higher, German world), social sciences likewise adapt in stages to the shift in their subject matter. Like Hegel's view of the march of history towards ever greater freedom, Marshall depicts the evolution of economics as an ever-continuing drive towards greater freedom in enterprise and trade. In addition, he seems to imply that until the march to freedom in general has gained sufficient impetus, there is little to develop in scientific thought in the economic sphere. This seems to be at least part of the thrust of section 1 of Appendix B on the growth of economic science, which in many aspects has a substantial Hegelian flavour.[20]

Twenty years earlier, Marshall had developed this theme in his unfinished material on the method and history of economics, which he apparently wrote around 1871.[21] This draft paper lists three reasons for the study of the history of economics by those interested in economics in general. First, by observing how others have been led to error, such a study reveals how errors are made and avoided, hence advancing the development of abstract theory in itself. Second, the study of the history of economics allows an appreciation of, and acquaintance with, the great minds who, each in their turn, contributed to the current knowl-

edge of the subject. Third, and most importantly for the material of the lectures which remains extant, the study of the past doctrine of economics enables an understanding of the social and political phenomena of the periods in which they were held. This is but a corollary of the proposition that such knowledge goes together and is 'inextricably interwoven'. Knowledge of these economic phenomena reflected in economic doctrine is valuable in itself, because Marshall thought that the influence of the economic circumstances of the age on its history have been under-rated. History, Marshall implies here, is history in its highest sense as the history of man's aims, spiritual life, moral nature and intellectual faculties; in short, Hegel's spirit. After stating that a theory of political economy cannot have existed until the end of the middle ages, Marshall develops the view in the remainder of the paper that there is nevertheless much to learn about the history of economics from knowledge about the early period of history. Why this period did not produce economic theory is one question its existence raises for Marshall. How the ancients solved their economic problems is another question which Marshall suggests. The lecture then develops into a discussion of the economic thought and arrangements of ancient times, drawn from Kautz, Rau, Maine, Mommsen, McCulloch, Smith and Hegel, precisely those sources which he mentioned in his reminder note to re-read Hegel, which was mentioned earlier. It can be said, *pace* the remark about Hegel in the context of the general growth of economic science, that this is a Hegelian enterprise. At the same time, the frequent use Marshall makes of Hegel in this context is as a historical source and, moreover, a historical source which is questioned as to its accuracy, in later additions and corrections to the manuscript.[22] However, whether this 'Hegelian enterprise' (had it been completed) would have made explicit the link between freedom and the progress of world history which Hegel forges and the growth of freedom of enterprise as the motivating force in the development in economic history as a specific manifestation thereof, is a hypothesis about Marshall's indebtedness to Hegel which cannot be answered from this manuscript. Its history simply does not go far enough, ending as it does with the economic organisation of the Hebrews.

The evidence on Marshall's use of Hegel tends to suggest that Marshall increasingly presented him as a historical source useful in illuminating certain aspects of human history rather than as his mentor in the philosophy of history whose system had provided useful suggestions for enhancing the understanding of the development of economic society and its counterpart, economic theory and doctrine. Such Hegelian trappings were present in the early work, much of it unpublished, and only rarely explicitly acknowledged. The 1877 lecture on American industry is the exception.

IV

Talcott Parsons (1932: 218–19) commented briefly on the nature of Marshall's association with Hegel in the context of his analysis of sociology in relation to economics:

> It is true that certain elements of Hegel were congenial to him, but even where there is a superficial likeness it covers up a deeper difference. Moreover, what is still more important, the elements of Hegel which have been most decisive in influencing subsequent German thought, have left scarcely a trace in Marshall. His idea of evolution is *continuous*, not dialectic. Both the (logical) discontinuity and the element of conflict, the two primary elements of Hegelian evolution, are missing from Marshall. Instead of emphasizing the historical uniqueness and discontinuity of past economic systems, Marshall systematically minimizes them. This separates him sharply from Hegel, Marx, and their successors. Marshall's low opinion of Marx is in itself sufficient proof of his lack of touch with the essence of the Hegelian tradition. He took from Hegel only what suited his own preconceptions, and used it only to round off the sharp edges of his own tradition – as in his idea of the 'organic' nature of social change.

This seems to support Whitaker's (1977) opinion quoted previously that Hegel had at best only a loose influence on Marshall's thought.

It has already been suggested that Hegel's views were probably not unimportant in colouring aspects of Marshall's economic vision in the formative period from the late 1860s to the middle 1870s, during which that vision was constructed. The dependence of social sciences on their environment, which gave a relativeness to the validity of their generalisations and laws, was clearly one such aspect which Marshall acknowledged. Emphasis on the growth of freedom in general, as part of the move to perfection which characterises the march of history, was another. Last, but not least, the march of history from East to West, and of human perfectibility and spirit from East to West, with all its racial undertones, was also not uncongenial to Marshall, particularly with respect to the industrial and general economic future he saw for America. Vestiges of these views remained in his comparative and historical work on industrial development in *Industry and Trade* (Marshall 1919).

On the other hand, Marshall's acceptance of Hegel's *philosophy* of history tended to diminish over time, particularly with respect to the philosophy, as was noted in the context of the changes he made to explicit Hegel references in the early editions of the *Principles*. More important, as Parsons (1932) correctly emphasised, the use which Marshall made of Hegel, even when it was at its strongest, was only very partial, omitting the logic of the dialectic. It was conjectured that Marshall did not study Hegel's *Science of Logic*, though his reading of Hegel's *Philosophy of History* ought to have alerted him that the logic was important, and that the process of history involved contradiction and inevitable conflict in the social transformations to higher stages.[23] Whether Marshall deliberately ignored this aspect of Hegel's thought, or whether in the absence of serious study of the *Science of Logic* he never realised its full implications, cannot be readily deduced from the evidence (cf. Gerbier 1976: 160). Many of the more explicit references to conflict as a means of resolving shifts between stages of development were also transformed by Marshall into a more

evolutionary framework by his combination of the Hegelian evolutionary progress, as he saw it, with the doctrines of survival of the fittest and competitive struggle as developed by thinkers like Herbert Spenser.

Marshall's use of Hegel can, then, also be depicted as his tendency to use the views of specific authors which appealed to him in such a way that they fitted within his system, even though such use of their thought did great violence to the systems from which these ideas had actually come. Hegel is not the only example of such Marshallian textual practice. His perspectives on the earlier classical economists, both Smith and Ricardo, depend on a similar reconstruction of their thinking to make it fit the role he assigned for it. In this way the study of Marshall's use of Hegel is revealing of aspects of Marshall's work in a dual way. Apart from enabling further identification of the type of ideas and notions which were innately appealing to Marshall's view of the world, in addition it demonstrates Marshall's peculiar textual practices when he seeks to incorporate what in some ways are quite diverse views into the body of his social and economic thought. In this sense it can be said that Marshall and Hegel is a peculiar partnership in the evolution of Marshall's own economic and social thought – not because it was peculiar relative to his own textual practice with earlier authorities, but because it painted a strange view of the opinions of authorities like Hegel within their own systems of thought.[24]

Notes

1 A first version of this paper was written as a brief note in 1974 for reasons explained in note 3 below. It has since been much expanded and improved, largely through work in the Marshall Library and discussions on the subject with Hans Niemeier (see note 8 below) and Eduardo da Fonseca, and following its presentation at a 1989 conference, with Ted Winslow.

2 For example, by Whitaker (1972: 25) and Gerbier (1976: 165, n1).

3 Scott argues that Marshall derived the motto directly from Kant, without giving any reasons. It seems more likely, however, that Marshall derived the *natura non facit saltum* motto from Darwin's *Origin of Species*, where it is mentioned on several occasions (Darwin 1859 [1884]: 156, 166) and explicitly applied in his discussion of species improvement and adaptation through natural selection and competition (Darwin 1859 [1884]: 414). Paradoxically, in his *Science of Logic*, Hegel (1929: I, 387–90) discusses the limitations of this motto, in the context of his examination of how gradual, quantitative change can suddenly turn into a discontinuity of massive qualitative change. Hegel's rejection in his *Science of Logic* of what was to become Marshall's motto sparked my original interest in the precise connection between Hegel's work and Marshall's economic and historical thought.

4 Marshall Library, Cabinet File no. 3, Box 2: Lectures to Women, Easter Term 1873; Box 5, Item 1 (f). 'Lecture on the Method and History of Economics'. This second box also includes bundles of notes on economic history of the East, of Greece and Rome, and the Middle Ages, which include Marshall's notes and extracts from Hegel's *Philosophy of History*. I take this opportunity to acknowledcge my indebtedness to the Librarian of the Marshall Library for helpful assistance over the years and to thank him, and the members of the Faculty of Economics and Political Science of the University of Cambridge, for permission to quote from Marshall manuscript material in their possession.

5 Sidgwick appears to have become aware of Hegel's work in the context of the controversies over Strauss' *Life of Jesus*, but seems not to have studied Hegel's work in earnest until the late 1860s. He abandoned this study in Germany during 1870, largely because he considered Hegel's method to be wrong, and Hegel's whole philosophical system fell, or stood, with this method (Sidgwick 1906: 103, 230, 233, 238–9 esp.). Stephen, according to Annan (1984: 51–2) was likewise busily studying Hegel in the second half of the 1860s, while Annan reports him later as stating, in the context of T. H. Green's philosophy, that 'Hegel is in many things little better than an ass' (Annan 1984: 175). However, it is interesting to note that Sidgwick confided to his diary in January 1886 that he found

> history studied as inductive sociology more and more interesting … [and] that, without genius or originality, one might produce a really important work combining Hegelian view of evolution of the *idea* of State with Spencerian view of quasibiological evolution of the *fact* of the State, and testing both severely by history.
>
> (Sidgwick 1906: 436–7)

Much of Hegel's discussion of the development of the *idea* of State is contained in his *Philosophy of History*, though it needs to be supplemented by his ideas on the State in *The Philosophy of Right*.

6 Jowett to Mrs Marshall, 18 September 1890, reproduced in Abbott and Campbell (1897: 380). The original is in the Marshall Library correspondence, Box 1, Item 133. The virtue of Marshall's use of Hegelianism in his book, was its assistance in 'emancipating us from many verbal arguments and distinctions'. Marshall appears to have gained Jowett's acquaintance while he was at Bristol, and after his period at Oxford may be said to have become an intimate friend. In any case, they exchanged correspondence, visited each other and Jowett was in the habit of sending presents of books as well. For a more detailed discussion of Marshall's friendship with Jowett, see Whitaker (1972: 12–18).

7 Marshall then recalled (*c*.1906) that he joined the Grote Club in 1867, and that its active members were Maurice (Grote's successor to the moral philosophy chair), Sidgwick, Venn, Mozley and Pearson and that, 'for a year or two, Sidgwick, Mozley, Clifford, Moulton and myself, were the active members'. His high regard for Maurice is also reflected in these recollections. This makes it likely that Marshall was infected with his youthful enthusiasm for Hegel's *Philosophy of History* through Maurice. Sidgwick (1906: 137–8) reproduces these reminiscences by Marshall on his period of membership of the Grote Club, and this is largely the source for Keynes' (1925: 6–7) remarks on the subject as well.

8 There are well over twenty extracts drawn from both Hegel's famous introduction to the *Philosophy of History* and the main text. They vary from short sentences to lengthy paragraphs spreading over more than one page. These extracts are contained in bundles of notes on early economic history preserved in Box 5 of the Marshall Papers: Item 8, the Middle Ages I and II; Item 9, Greek and Roman; Item 10, the East. The last bundle included a rough draft of the unfinished paper (or lecture) on 'History and Method of Political Economy' (simply headed in this draft 'History of P.E.') which was referred to in the previous section. I am indebted to Hans Niemeier for photocopies of the text of a reprint of Hegel's *Philosophy of History* (Hegel 1956) showing the extracts Marshall had made. Both these extracts, and the use he made of them in the unfinished paper on history and method, indicate that Marshall used the Sibree translation of Hegel's *Philosophy of History*, which was first published in 1861 as a volume in Bohn's Philosophical Library.

9 Notebook (which can be roughly dated *c*.1867–70) preserved in Marshall Library, Large Brown Box 5. The passage in question reads as follows: 'In preparing the

previous pages, the following portions of books have been read and need not be read again (Hegel should be re-read)'. The books not needing to be read again include Morley, *Miscellanies*; Blanqui, *Histoire*, vol. 1; Kautz; Blakey; *History of Political Lit.*, ch. IV; Mommsen, chapters on economy in vols I, II, III; Roscher, *Ansichten*; Rau; Adam Smith; McCulloch, *Treatises and Essays on Subjects Connected with Economical Policy*; Say, *Cours*. In a letter (dated 7 November 1975) in response to an inquiry as to whether Marshall had owned any books by Hegel, Piero Sraffa as Marshall Librarian responded that if he did, none were now in the Marshall Library. He added that they had not gone to St John's College Library, but that a gift of them to Claude Guillebaud was possible. However, the last was now impossible to check because Guillebaud's library had been dispersed on his death.

10 The remark on McTaggart is in a letter Marshall wrote to J. M. Keynes (30 January 1902) cited in Coats (1967: 713). The book is included with Marshall's books in the Marshall Library. McTaggart subsequently quarrelled with Marshall over the introduction of the separate economics and politics tripos in 1903. See Groenewegen (1988: 647).

11 Hegel's notions of 'subjective' and 'objective' freedom are discussed in some detail in his introduction to the *Philosophy of History* (Hegel 1956: 40–50, 104; cf. Hartman 1953: xxxii–xxxiii), on which material Marshall took copious notes. Hegel likewise applied these concepts, and redefined them, in the part on modern history (Hegel 1956: 416–17, 421–2, 447–8 esp.). Marshall (see note 17 below) defined the concepts in the context of opposition between the Greek and Roman spirit, and as shown at the end of this section, in his contrast of the 'objective freedom' of England with the 'subjective freedom' he saw developing in the United States of America. This was an important element in his argument that ethical progress was intimately connected with industrial progress. This interdependence provides the foundation (far too often left implicit) for his frequent depiction of economic progress as a higher theme in economics, and hence to some extent for his justification of economic analysis as an instrument of economics progress in the context of its wider aims of the alleviation of poverty and the elimination of human degradation. The view developed in this section seems to conflict with Whitaker's (1977: 193 n80) remark about 'a loose indebtedness to Hegel', a view which verges on the side of an understatement, since at least on the young Marshall, Hegel's influence appears to have been quite significant.

12 The leader in this group of commentators is Popper (1974: ch. 12), whose views were critically analysed and completely rebutted by Kaufmann (1959: 88–119). See also Hartman (1956: ix–xvi, xxx–xxxiv).

13 Marshall did this on several occasions, most clearly in correspondence. See Marshall to Edward Caird (5/12/1897) and Marshall to Bishop Westcott (20/I/1901), both in Pigou (1925: 399–401, 392–3) respectively.

14 See the previous section, where this aspect of Marshall's interpretation of Hegel is discussed, with the suggestion that some of its specific conclusions resulted from a merger of Hegel with Darwin and Spencer on the implications for evolution of the survival of the fittest.

15 For example, the following paragraph from Hegel (1956: 90–1) can be compared with the argument in the concluding paragraphs of Marshall's lecture on water:

> The sea gives us the idea of the indefinite, the unlimited, and infinite; and in *feeling his own infinite* in that Infinite, man is stimulated and emboldened to stretch beyond the limited: the sea invites man to conquest, and to piratical plunder, but also to honest gain and to commerce. The land, the mere Valley-plain attaches him to the soil; it involves him in an infinite multitude of dependencies, but the sea carries him out beyond these limited circles of thought and action. Those who navigate the sea, have indeed gain for their

> object, but the means are in this respect paradoxical, inasmuch as they hazard both property and life to attain it. The means therefore are the very opposite to that which they aim at. This is what exalts their gain and occupation above itself, and makes it something brave and noble. Courage is necessarily introduced into trade, daring is joined with wisdom. For the daring which encounters the sea must at the same time embrace wariness – cunning – since it has to do with the treacherous, the most unreliable and deceitful element. This boundless plain is absolutely yielding – withstanding no pressure, not even a breath of wind. It looks boundlessly innocent, submissive, friendly, and insinuating; and it is exactly this submissiveness which changes the sea into the most dangerous and violent element. To this deceitfulness and violence man opposes merely a simple piece of wood; confides entirely in his courage and presence of mind; and thus passes from a firm ground to an unstable support, taking his artificial ground with him. The Ship – that swan of the sea, which cuts the watery plain in agile and arching movements or describes circles upon it – is a machine whose invention does the greatest honor to the boldness of man as well as to his understanding. This stretching out of the sea beyond the limitations of the land, is wanting to the splendid political edifices of Asiatic States, although they themselves border on the sea – as for example, China. For them the sea is only the limit, the ceasing of the land; they have no positive relation to it. The activity to which the sea invites, is a quite peculiar one: thence arises the fact that the coast-lands almost always separate themselves from the states of the interior although they are connected with these by a river. Thus Holland has severed itself from Germany, Portugal from Spain.

16 In any case, whether intended or not, these changes had this effect. As shown in the next paragraph, two initially explicit references to Hegel's concepts of freedom had disappeared by the third edition, while a textual reference to Hegel on Stoicism (Marshall 1961: II, 726) was likewise removed. The last removal can be explained by the fact that Hegel's remarks on this subject (presumably Hegel 1956: 317–18) are not fully reflected in the remarks which Marshall made in this context.

17 In the first two editions (Marshall 1961: II, 716) this note reads as follows:

> This fundamental opposition between the Greek and Roman tempers was made clear by Hegel in his *Philosophy of History*. He calls the freedom from outward control, whether of thought or action, *objective freedom*; while he gives the name of subjective freedom to the freedom from waywardness, 'the freedom of spirit which reposes on itself, absolute self-determination'. The former belonged to the Greeks, the latter to the Romans; while the Teutonic spirit under the influence of Christianity is uniting the two and working towards complete freedom. Compare also Kautz, *Entwicklung der National Oekonomie*, Bk. I.

This can be compared with Hegel's distinction as cited in the previous section. In addition to Roscher's praise of Hegel as noted in the text, Roscher (1874, [1924]: 926–8) mentions also Hegel's contribution to constitutional monarchy and the emphasis on freedom in his *Philosophy of History*.

18 This passage also provided Marshall with an opportunity to combine a Hegelian perspective with a Darwinian appeal to survival of the fittest, an appeal which is subsequently repeated in Marshall's history (Marshall 1961: I, 745) in his explanation of the superiority of British agriculture over European from the need of English farmers to compete with each other for suitable leases.

19 In the first edition, this sentence in the middle of page 733 attracted a footnote reference to 'Hegel, *Philosophy of History*, Part III, iii' (Marshall 1961: II, 726).

20 Examples include the emphasis on the development of economic theory as beginning from the end of the Middle Ages and its specific association with the discoveries of the new sea routes to India and the New World, as well as the association of the beginnings of economic theory with regulation, or the negation of free enterprise.
21 Marshall Papers, Box 5, Item 1f. This manuscript was published in the series of Reprints of Economic Classics the author edits for the Department of Economics at the University of Sydney, thereby making it more accessible. [That is, *Alfred Marshall on the Method and History of Economics*, *c*.1870, edited with an introduction by Peter Groenewegen, Reprints of Economic Classics Series 2 no. 5, Sydney: Centre for the Study of the History of Economic Thought, University of Sydney, 1990.]
22 As hinted earlier, the fact that Hegel's historical scholarship was increasingly found wanting, partly in the light of more recent research occurring during Marshall's lifetime, may have reduced his standing as a reliable authority in Marshall's eyes.
23 See Hegel (1956: 56) where the importance of the separate branch of logic is specifically referred to; examples of the dialectic in action can be found specifically in Hegel's discussion of the modern, German stage of history, for example 380–4, on the inversion of 'Chastity, Poverty and Obedience' and the contradiction of the medieval state. As Parsons correctly points out, the dialectic and its emphasis on discontinuous movement at crucial points had no place in the Marshallian vision of growth and change.
24 My conclusion contrasts significantly with Ted Winslow's argument in an unpublished draft study on 'Marshall and Hegel' which he kindly made available to me, and from the study of which I derived a number of benefits. This stresses what Winslow calls the 'organicist' features of Marshall's method and account of historical development, in a manner which depicts Hegel's influence on Marshall as far more crucial than that of evolutionist theory. In my view this over-emphasises Hegel's impact on Marshall, partly by failing to take adequate account of the many other possible sources from which Marshall drew in developing his ideas, partly by relying on more work by Hegel than that to which Marshall had access on the available evidence (see notes 8 and 9 above).

References

Abbott, E. and Campbell, L. (1897) *The Life and Letters of Benjamin Jowett*, 2 vols, London: John Murray.

Annan, Noël (1984) *Leslie Stephen, the Godless Victorian*, London: Weidenfeld and Nicholson.

Bonar, James (1922) [1893] *Philosophy and Political Economy*, London: Allen & Unwin.

Coats, A. W. (1967) 'Sociological Aspects of British Economic Thought', *Journal of Political Economy*, 75 (5) 706–29.

Darwin, Charles (1884) [1859] *The Origin of Species*, London: John Murray, reprint of 6th edn, 1872.

Edgeworth, Francis Y. (1925) 'Reminiscences', in A. C. Pigou (ed.) *Memorials of Alfred Marshall*, London: Macmillan, 66–73.

Faber, Geoffrey (1957) *Jowett: A Portrait with Background*, London: Faber & Faber.

Gerbier, Bernard (1976) *Alfred Marshall: Théoricien de l'action efficace et critique radicale de l'économie pure*, Grenoble: Université des Sciences Sociales.

Guillebaud, C. W. (ed.) (1961) 9th variorum edn of Alfred Marshall, *Principles of Economics*, London: Macmillan.

Hartman, Robert S. (1953) Introduction to G. W. F. Hegel, *Reason in History*, New York: The Liberal Arts Press.

Hegel, G. W. F. (1956) [1899] *The Philosophy of History*, trans. J. Sibree, New York: Dover.

——(1929) *Science of Logic*, trans. W. H. Johnston and L. G. Struthers, New York: Macmillan.

Jones, W. T. (1975) *Kant and the Nineteenth Century: A History of Western Philosophy*, vol. IV, New York: Harcourt Brace Jovanovich.

Kaufmann, Walter A. (1959) *The Owl and the Nightingale*, London: Faber & Faber.

Keynes, J. M. (1925) 'Alfred Marshall, 1842–1924', in A. C. Pigou (ed.) *Memorials of Alfred Marshall*, London: Macmillan, 1–65.

Marshall, Alfred (1975) [1877] 'Some Features of American Industry', lecture given to the Cambridge Moral Science Club, 17 November, in J. K. Whitaker (ed.) *The Early Economic Writings of Alfred Marshall, 1867–1890*, 2 vols, London: Macmillan, II, 352–77.

——(1879) 'Water as an Element of National Wealth', in A. C. Pigou (ed.) *Memorials of Alfred Marshall*, London: Macmillan, 1925, 134–41.

——(1885) 'The Present Position of Economics', in A. C. Pigou (ed.) *Memorials of Alfred Marshall*, London: Macmillan, 1925, 152–74.

——(1898) *Principles of Economics*, 4th edn, London: Macmillan.

——(1919) *Industry and Trade*, 3rd edn, London: Macmillan, 1932.

——(1961) *Principles of Economics*, 9th variorum edn, ed. C. W. Guillebaud, London: Macmillan.

Marshall, Mary Paley (1947) *What I Remember*, Cambridge: Cambridge University Press.

Maurice, Frederick (1884) *The Life of Frederick Denison Maurice*, London: Macmillan.

Parsons, Talcott (1932) 'Economics and Sociology: Marshall in Relation to the Thought of his Time', *Quarterly Journal of Economics*, 46, 316–47; in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, I, 209–31.

Pigou, A. C. (ed.) (1925) *Memorials of Alfred Marshall*, London: Macmillan.

Popper, K. R. (1974) [1945] *The Open Society and Its Enemies*, London: Routledge.

Richter, Melvin (1964) *The Politics of Conscience: T. H. Green and his Age*, London: Weidenfeld and Nicolson.

Roscher, Wilhelm (1894) *Geschichte der Nationalokonomie in Deutschland*, Munich and Berlin: Oldenbourg, 1924.

Scott, W. R. (1924) *Alfred Marshall, 1842–1924*, from the proceedings of the British Academy, London: Oxford University Press for the British Academy.

Sidgwick, A. and Sidgwick, E. M. (1906) *Henry Sidgwick: A Memoir*, London: Macmillan.

Sidgwick, Henry (1884–1906) *Outlines of the History of Ethics for English Readers*, London: Macmillan.

Whitaker, J. K. (1972) 'Alfred Marshall: The Years 1877 to 1885', *History of Political Economy*, 4(1) 1–61.

——(1975) *The Early Economic Writings of Alfred Marshall, 1867–1890*, 2 vols, London: Macmillan.

——(1977) 'Some Neglected Aspects of Alfred Marshall's Economic and Social Thought', *History of Political Economy*, 9(2) 161–97.

Winslow, Ted (1989) *Marshall and Hegel: Organicism and Marshall's Accounts of Method and Historical Development*, typescript ('rough draft') made available by the author.

13 Alfred Marshall and Australian economics[1]

As La Nauze (1949: 98) has pointed out, there were only two Australian economists of the nineteenth century whose writings were widely known outside of their country of adoption. This refers to Hearn's *Plutology* (1863) and Syme's *Outlines of an Industrial Science* (1876). In the chapters he devoted to an examination of the work of these economists, La Nauze also noted that both books were known to Marshall, who cited them in the pages of his *Principles* as well as in other work. In the case of Hearn, considerable influence on Marshall has been mentioned (Copland 1935: 19, n5; Mary Paley Marshall 1947: 20) though La Nauze himself regards this as rather exaggerated (1949: 88–90 esp.). La Nauze does not appear to have realised that Marshall owned copies of both Hearn and Syme, now preserved in the Marshall Library, and that, as is so often the case with Marshall's own books, these books had been extensively annotated. As one would expect, *Plutology* contains a great many of these annotations. Syme's *Outlines of an Industrial Science* is only annotated in the first, methodological part in which Marshall appears to have been especially interested. This note provides a brief commentary on these annotations and in an appendix gives a detailed listing of them.

Marshall's annotations of Hearn

Before commenting on some of the specific annotations Marshall made in *Plutology*, it is useful to look at the use he made of them as revealed by Marshall's citation of Hearn's work in his writings. As La Nauze (1949: 51n) noted, Marshall first cited Hearn publicly in his paper on 'Mill's Theory of Value' published in the April 1876 issue of the *Fortnightly Review* (in Pigou 1925: 122, n1) in which he remarks that both Hearn and Jevons had extended Mill's analysis on cost of production. Subsequently, in the work written with his wife (1879; 1881: 205) Marshall referred to Hearn with Jevons, Cliffe Leslie, Francis Walker and some others, as having adopted 'the general idea that wages are the share of the produce which the laws of supply and demand enable the labourer to secure', but the only specific reference given is to the second edition of Jevons' *Theory of Political Economy* (cf. Whitaker 1975: 69). Other references to Hearn in the early writings are scarce, if not non-existent.[2]

Marshall made two further references to Hearn in the *Principles*, of which only one survived all eight editions. At the end of Book II, Chapter II, 'Wants in Relation to Activities', Marshall (1961: I, 91n) lists the 'Australian Hearn' as an English writer who together with Bentham, Senior and Banfield had prepared the way for Jevons' treatment of wants in economics. Marshall added that

> Hearn's *Plutology or Theory of the Efforts to Satisfy Human Wants* is at once simple and profound: it affords an admirable example of the way in which detailed analysis may be applied to afford a training of a very high order for the young, and to give them an intelligent acquaintance with the economic conditions of life, without forcing upon them any particular solution of those more difficult problems on which they are not yet able to form an independent judgement.[3]

Up to the sixth edition, in a note to the second paragraph of Book IV, Chapter VIII, 'Industrial Organisation', Marshall had included among the references there given, one to Hearn's *Plutology* as well as to 'the writings of Herbert Spencer' and Bagehot's *Physics and Politics* (Marshall 1961: I, 241, n1; II, 323). In view of the very substantial number of annotations Marshall had made in Hearn's chapter, 'Of the Industrial Organisation of Society', this seems a rather inappropriate deletion from the 7th and 8th editions and is not easily explained. None of the subsequently published works of Marshall contained references to Hearn, nor did his *Official Papers* as edited by Keynes.

Marshall's annotations to *Plutology* may now be examined. These were made most frequently by pencil underlining of part of the text, or a vertical line in the text marking longer passages Marshall wanted identified as being of interest. Marshall on only one occasion in the case of Hearn's book gave a written observation on the text in the margin. There are well over forty annotations altogether (see Appendix to this chapter), of which a few, however, only draw attention to citations Hearn made of the work of others. The marked passages are concentrated in particular chapters: most specifically Chapter 1, 'Of Human Wants' (four annotations); Chapter 5, 'Of the Circumstances on which the Efficiency of Natural Agents Depends' (five annotations); Chapters 8 and 9 on capital (twelve annotations); Chapters 12 and 13 on cooperation (six annotations); Chapter 17 on industrial organisation (twelve annotations); Chapter 19, 'Of Competition' (three annotations), and particularly significant in the light of La Nauze's remark that Hearn was the first 'to apply to political economy the biological theories of Spencer and Darwin' (1949: 92), pencil marks to the greater part of section 1 of Chapter 21 entitled 'Phenomena of Organic Evolution'.

It is not difficult to see why Marshall marked passages on pages 7, 13–14, 17, 18 and 21 of Hearn's work. They draw attention to what was to become the scheme for construction of the first two major books of Marshall's *Principles*: Book III, 'On Wants and their Satisfaction' (called 'Demand or Consumption' up to the fourth edition), and Book IV, 'Production or Supply', retitled from the

fourth edition, 'The Agents of Production: Land, Labour, Capital and Organisation'. In fact, 'Marshall's plot', as McGregor (1942: 116) came to call it, was in some respects very similar to Hearn's structure. Marshall first discussed things being wanted (Bk III), so they are produced (Bk IV), and are then exchanged (Bk V), and the price is divided (Bk VI). Hearn (1863) starts with wants and their satisfaction (chs 1–2). This is followed by a lengthy discussion of production in terms of agents of production and their efficiency (chs 3–13), exchange (chs 14–15), the mutual dependence of production and exchange (chs 16–17) and the distribution of the product as a theory of remuneration of the agents of production in terms of supply and demand (ch. 18, esp. 318). Although Hearn derived important parts of this structure from Bastiat (1850: esp. ch. 2, 'Wants, Efforts, Satisfaction'), a work studied by Marshall at an early stage in his economic career, the more specific features of Hearn's organisation of the material are his own and not derived from the structure of Bastiat's book. In this way Hearn's structure, which Marshall found so suitable for beginners, could easily be adapted for the more serious use by Cambridge and other university students as well as by businessmen.

Likewise, and not surprisingly, Marshall appears to have drawn considerable comfort if not inspiration from the feature of Hearn's book which La Nauze (1949: 61) described as its most original – the application of Darwinian biology to questions of economics. Marshall not only appreciated Hearn's broad thrust on the matter (by marking the opening passage of Hearn's Chapter 21 on industrial evolution), but also its more specific applications to competition, bankruptcies and unsuccessful undertakings (Hearn 1863: 347). In some respects, Marshall may have seen his first vision of that biological Mecca for economists in the pages of *Plutology*.

Marshall's major indebtedness to Hearn seems to be associated with questions of economic organisation, the division of labour, the location of industry, and even the technical matters of production which continued to fascinate both Hearn and himself for much of their lives. As already indicated, the vast bulk of Marshall's annotations are in this area. The chapters on industrial organisation which Marshall penned for Book IV (chs 8–12, esp. 10) bear Hearn's marks if the passages he underlined or marked otherwise in his copy of *Plutology* can be taken as an accurate guide (especially those on pages 305–14, in which Hearn linked locational specialisation to the division of labour). In fact, Hearn's rather unusual stress on organisation may have been one of the influences which made Marshall elevate that factor into a separate agent of production in the later title of his Book IV, although of course much earlier in the substance of that book.

A number of other Hearn passages may have influenced some of Marshall's own major contributions to economic analysis. A sentence marked on page 340 contains the embryo of the notion of producer's surplus: 'If one man then can reduce that quantity of labour [required for the production], while with other men the amount of labour remains unchanged, he will gain the entire difference between his reduced cost of production and the ordinary cost'. Marshall,

however, did not mark other passages in Hearn's book which may be said to anticipate his notion of producer's surplus (e.g. Hearn 1863: 240), where such extra profit in this case is identified with 'rent'. This was, of course, the name Marshall originally gave to his surpluses. Marshall likewise did not mark passages suggestive of the notion of consumer's surplus (Hearn 1863: 333, 338) where the consumer is said to gain 'the whole difference between the price that he actually pays and the price that in extremity he would be prepared to pay'. This reflects precisely the type of thought experiment Marshall conducted with tea in Book III, Chapter 6 (Marshall 1961: 124–7).

Hearn was, of course, only one of many influences on Marshall's economics as it developed over two decades during his long road to the *Principles*. Other passages which Marshall marked betray what became Marshall's own later preoccupations and even style of language or choice of phrase. A great deal of this may be explained by the fact that Hearn's major mentors: John Stuart Mill, Adam Smith and Frédéric Bastiat, were also major teachers of, and influences on, Marshall. However, the annotations Marshall made in his copy of Hearn (the handwriting of which suggests that this was a relatively early purchase at the end of the 1860s) makes it likely that Hearn was a more important influence than now tends to be acknowledged. It can in fact be said that Hearn should be included with some of the more important second-rank influences on Marshall, in that he may have suggested important features of Marshall's peculiar and original ordering of the material, may have inspired or consolidated Marshall's liking for biology in economics, and, with respect to elements of Marshall's analytical apparatus, may have assisted in bringing to the forefront those notions of consumer and producer rent or surplus, and the emphasis on economic organisation, specialisation, invention and communication which are so characteristic of Marshall's Book IV. The general reference which Marshall provided to Hearn at the start of that last discussion until the sixth edition of 1910, and which then disappeared, may possibly be simply explained by the fact that Hearn's work would by then have already become so scarce that a general reference to readers was no longer appropriate. For those interested, the Appendix to this chapter now provides an opportunity to investigate Hearn's influence on Marshall on the basis of these annotations to an extent greater than hitherto possible.

Marshall's annotations of Syme

Marshall refers only once in print to Syme's *Outlines of an Industrial Science* (1961: I, 783), when it is mentioned as a useful book for English readers to correct Mill's rather simplistic account of economic motives in terms of 'acquiring and consuming wealth', a point which Syme raised not only in his *Outlines* (Syme 1876: 15–19) but also previously in his article on methodology published anonymously in the *Westminster Review* (Syme 1871: 204–7). La Nauze (1949: 105, n16) has drawn attention to one further, indirect reference to Syme in Marshall's *Principles* (1961: 548) where he commented on the views of 'Cliffe Leslie and some other writers [who] have naively laid stress on local

variations of wages as tending to prove that there is very little mobility among working-classes'. That Syme is one of the other writers is clear from the fact that Marshall marked a relevant passage in the *Outlines* (Syme 1876: 20–1) dealing with labour mobility in Australia and New Zealand, and that subsequently he marked another passage on the subject of wages (Syme 1876: 22).

Marshall annotated a number of other passages in Syme's book, far fewer in total than the passages he marked in Hearn. Apart from the passage on labour mobility to which reference has already been made, he marked a number of passages critical of laissez-faire and competition (40, 47, 48, 65) as well as a number of those dealing with protection. These include some on the British strategy of destroying potential competition from colonial dependencies such as Ireland and India (69, 70, 73, 80, 85). The more interesting of the passages marked (52–3) deals with the income effect of a price change of a staple commodity on the prices of other commodities. The passage in question is worth quoting, since it is related to Marshall's famous 'Giffen paradox' (Marshall 1961: 132), the source of which is still disputed.

> It is a well-ascertained fact that when any commodity in general demand rises in price (money alone excepted, in regard to which the opposite effect takes place), the price of other commodities falls in proportion, owing to the fact that the income of consumers does not increase with the increase in prices. The consequence is, that when the price of a commodity of this description, say bread, is high, consumers economize in other directions, in order to make good the deficiency in their income caused by the additional expenditure on this particular article. There is, therefore, less demand for those other commodities, as well as for labour, which is a commodity in general demand, and the price of them consequently falls. The wealthy man, however, is scarcely affected by the high price of bread, as this forms only a small proportion of his expenditure, and the increase in price is, to a great extent, compensated by the fall in the price of other commodities, labour included, which he purchases. But with the poor man the case is different. Bread being with him the chief article of expenditure, when the price is high it bears heavily on his income, while his labour, at the same time, shares in the general depreciation. Thus the poor suffer in two ways; first, in the increased price of the necessaries of life, and, secondly, in the decrease in the value of their labour.
>
> (Syme 1876: 52)

There are also some passages in Syme's book on which it is surprising that Marshall did not comment. Syme (1876: 124–8) comments on Mill's problem (Mill 1865: 270, Book III, ch. 2, 3) in speaking of a ratio of supply to demand when one of these is a 'quantity' and the other a 'desire' or 'subjective feeling':

> The word, *Demand*, as we have said, signifies desire, but the term *Supply* signifies a stock, provision, or quantity provided. The word *Supply* is therefore not

> the correlative of *Demand*: the latter indicates a mental process, while the former has no such meaning.
>
> (Syme 1876: 127).

Marshall had likewise raised this problem in the annotations he made on his own copy of Mill (now in the Cambridge University Library), noting in this context: 'This is distinctly the point of Ricardo. See Ch. XXX on Value (Ricardo)', presumably a reference to Ricardo's remark (1951: 382) that expressing supply and demand as a proportion was 'the source of much error in that science'. It can only be guessed whether Syme's emphasis on this problem in Mill's treatment of supply and demand encouraged Marshall to pursue the solution in terms of real costs and benefits which he ultimately posited in the *Principles*, in order to make supply and demand commensurate.

As is the case with Hearn, Marshall's annotations of Syme's work may be found to have had a minor influence on Marshall's economics. Apart from the passages identified as such in the opening paragraphs, including that on the income effects on prices and demand for other goods from a rise in price of a staple commodity such as bread, that influence would have been small. However, as in the case of Hearn as well, Marshall may have been encouraged to pursue certain avenues and approaches in economics more fully, from having seen them expounded by Syme in this book, which after all drew on, and was to some extent supported by, a doyen of that small English segment of an historical school, Cliffe Leslie.

Conclusions

This discussion can only be seen as a minor footnote in the general history of economic thought in the context of the many influences on and sources of Marshallian economics. For the history of Australian economics, it is a slightly more important episode. The fact that a young, and later prominent economist, was willing to use and cite economic writings from the Antipodes marks the beginnings of official recognition of the development of the science in that newest of new worlds. It is not surprising that the works which Marshall owned by Australian economists were those of Hearn and Syme; after all, they were among the few which were noted by non-Australian writers during the nineteenth century. To some extent, this episode points to the coming of age of Australian economics, as well as to the rich array of sources from which Marshall developed his *Principles*.[4]

Appendix: a detailed listing of Marshall's annotations of Hearn and Syme

W. E. Hearn: Plutology

Marshall owned the English edition published by Macmillan in 1864, identical in pagination and text to the Melbourne edition published by George

Robertson the year before. This listing will allow identification of the passages marked by Marshall in either of these two editions.

7	Second line, middle paragraph from: 'Like all other human affairs' to 'the subject of this inquiry'.
13–14	Passage marked: 'Man alone, of all known animals, with the mere satisfaction'.
17	Last paragraph of 5 starting: 'These wants'.
18	Second last sentence of 6, 'Where it otherwise, with the present predominance'.
21	10, first paragraph from beginning: 'So far from our wants being unworthy of our higher nature', to third bottom line: 'becomes a new principle of action'.
74	3, last sentence of first paragraph: 'The soil, including indeed climatal influences … that labour'.
77	5, second and fourth sentences: 'They do not themselves satisfy human wants:' and 'some of them are universally diffused'.
79	From first sentence new paragraph: 'But the great agent', to end of fourth sentence, 'that its progress has been most retarded'.
80	7, second sentence: 'He [Adam Smith] points out that the rivers'.
136	Middle of page: 'How then did capital begin?' to 'the presence of accumulation'.
140	First complete sentence, beginning 'A man, when aided by capital', then middle of page from 'Again, it is to capital' to 'essential to health and longevity'.
143	Final part of 6, starting from: 'It is not the repression of our wants'.
145	Middle of page: 'Apart from those other instances to which reference has already been made' to 'further means of beneficence'.
150	Top two-thirds of page up to and including sentence ending 'the most important results of education'.
151	Whole of page from sentence starting 'The North American Indians', a substantial part of which is a quotation of Rae (1834).
152	Whole of 5.
155	Full paragraph beginning with: 'A very remarkable contrast', part of which quotes Henry Mayhew (1851).
161	First sentence, 'I have already observed'; seventh sentence, 'It has also been remarked'; ninth sentence, 'The charge of profusion'.
162	Middle of page. Quotation from W. R. Greg (1842).
164	Second sentence from Malthus (1820), quote at start of 9, beginning 'The two extremes'.
170	First half of page up to '6,657 subjects of Montezuma'.

203 In Marshall's handwriting, the letters (a) are inserted in second line after 'Billy', (b), (c), in fourth line after 'loom'; and in the margin he wrote:

(a) they are drawn out through rollers and twisted as to make a long thin continuous yarn.
(b) as to make a form of thread
(c) consists of a series of parallel threads close together running with the length of the cloth. This is put into the loom or weaving machine which alternatively raises and depresses the various threads. Meanwhile, the [continued bottom of 204] shuttle is thrown by an arm of the machine backwards and forwards through the warp, that is the thread that is [wound?] so passing above some and below others of the threads of the warp. This is weaving.

(This is the only written comment by Marshall in Hearn.)

210 Quote from Say, second sentence new paragraph, starting: 'To have never done anything'.
211 5, third sentence starting: 'If a man can in one day'.
213 Last paragraph of 6 starting: 'Another advantage'.
216–17 Whole of 2.
236–7 From first complete sentence on page 236 starting: 'Nor must we omit' to end of 1 on 237.
278–80 Whole of 8.
294 Fifth sentence, starting: 'A man acquires'.
296 First five lines which approvingly quote Adam Smith.
297 Last three sentences of first paragraph from 'The same telegraph'.
298 Second complete sentence: 'However rich' to 'make public roads'. Olmsted (1861) quote from seventh last line page 298 to seventh line page 299.
306 Middle of page, 'Coachmakers in St. Pancras to Clerkenwell'; second paragraph, from 'Middelburg' to 'Herring fishery', an opinion Hearn attributes to Blanqui (1837).
307 To the remark in the second last sentence of 6 that in some Russian villages, 'The whole population consists of beggars', Marshall placed a question mark. Hearn attributed this observation to Haxthausen (1856).
308 Middle of page, last sentence of first paragraph, 'But there are many other', and the reference to the *Journal of Statistical Society*, vol. XX, 132, to which Hearn attributed this remark.
309 Quote in complete paragraph starting 'There is hardly a factory', from William Cooke Taylor in the Dublin Statistical Society *Transactions*, vol. I, 6 (as cited by Hearn).

310 All complete sentences in 7 from 'Such was the origin of Glasgow potteries'.

313 Sentence on middle of page starting: 'A man who earns 10 a day'.

340 Second sentence, second paragraph starting: 'If one man then can reduce that quantity of labour'; second last sentence on page starting 'Through these three stages', a remark Hearn attributes to Bastiat (1850).

342 Bottom half of page, three sentences starting from 'It spread over a large surface', up to and including sentence ending 'in the form of higher prices'.

347 Darwin's opinion from *The Origin of Species* from sentence (top of the page) starting 'What death does in nature' to 'and inorganic conditions of life'.

383 1, first two paragraphs, that is, from 'each differentiated part'.

***David Syme*: Outlines of an Industrial Science**

Marshall owned the so-called first edition of this work, which was published in London by Henry S. King and Co. – this is exactly the same as the so-called 'second edition', an identical reprint of the first edition, published by Kegan Paul, who, as La Nauze assumed (1949: 135) obviously took over King's stocks. The Australian National University Library has a copy of the second edition, published by King. The following are the passages marked by Marshall – passages, it must be indicated, surprisingly confined to Part I of the *Outlines*.

20–1 Passage about mobility of labour starting: 'In the Australian colonies' up to 'with perfect impunity'.

22 Passage on wages, from 'the object of the employer' to 'services to an employer'.

40 Near the footnote (continued from page 39), Marshall wrote: 'There is evidence that the policy they were proposing would have cost many more millions of lives: though it does not follow that they might not have managed it better than they did'.

47 Footnote on the poor law.

48 Footnote.

50 Quoted by Syme from Milne's 1814 evidence to the Select Committee of the House of Lords on the Corn Laws.

52–3 Two complete paragraphs starting 'One more illustration' and ending 'of a man's needs'.

59 Middle of page from 'It will thus become the object' to 'to create a monopoly'.

63 Paragraph on London monopolies from 'this is the kind of relationship' to 'of the brewers'.

65 Quote from Herbert Spencer at top of the page, 'Political economists generally'.
69 Quotation in a House of Commons Report by Hugh Seymour Tremenheere (1854), starting: 'The labouring classes generally' and ending 'of foreign markets'. Part of this passage was also quoted by Sidgwick (1885: 80 and n).
70 Reference to Froude's remark on England's destruction of the Irish woollen industry.
73 Protection of Indian cotton.
80 Footnote 1.
85 Last sentence of footnote 1 starting: 'There is a large demand for such cloth'.
91 Last sentences from 'Economists insist' to 'is more just'.

Notes

1 Research for this paper was carried out in the Marshall Library, Cambridge University, in February 1988. I am indebted for assistance to the library staff of this important library for Marshall scholars, and to the Faculty of Economics and Politics and the Marshall Librarian for permission to quote from the manuscript material in their possession.
2 My studies of the manuscript material in the Marshall Library have not turned up any other references to Hearn's work, hence supporting Whitaker's (1975) omission of Hearn from his index, apart from two references to Hearn in his introduction, which mention Marshall's Hearn citations in 1876 and 1879 referred to in the paragraph above.
3 Hence Mary Paley's (1947: 20) remark that 'Hearn's *Plutology* was thought well of for beginners' in the context of her reminiscences on Marshall's lectures on political economy that she took in the early 1870s. However, as I have noted elsewhere (1985: app. 2), on the evidence available Hearn appears to have been no longer read by Marshall's students after he became Professor at Cambridge in 1885. However, Copland (1935: 19, n5) noted Mrs Marshall's 1933 remark in conversation that 'Hearn's book had considerable influence on Marshall' and that 'some years ago a well-known British economist [asked him] to obtain a second-hand copy of *Plutology* [referring] to the great influence Hearn had on Marshall'. Unfortunately, Copland did not identify the economist in question.
4 This development of Australian economics is currently being examined by the author, together with Bruce McFarlane, for the purpose of writing an outline history of political economy in Australia for the series of national histories of economics projected by Croom Helm. [This book was published in 1990 by Routledge, under the title *A History of Australian Economic Thought*.]

References

Bastiat, Frédéric (1850) *Les Harmonies Economiques*, Paris: Guillaumin.
Blanqui, J. A. (1837) *Histoire de l'économie politique en Europe depuis les anciens jusqu'à nos jours*, 2 vols, Paris.
Copland, D. B. (1935) *W. E. Hearn: First Australian Economist*, Melbourne: Melbourne University Press.

Greg, W. R. et al. (1852) *The Three Prize Essays on Agriculture and the Corn Law*, Manchester: National Anti-Corn Law League.

Groenewegen, P. D. (1985) 'Alfred Marshall as Professor of Political Economy at Cambridge: 1885 to 1908', University of Sydney, Department of Economics Working Paper, June, no. 82.

Haxthausen, August von (1856) *The Russian Empire: Its People, Institutions and Resources*, trans. R. Farie, London.

Hearn, W. E. (1863) *Plutology: Or the Theory of the Efforts to Satisfy Human Wants*, Melbourne: George Robertson.

La Nauze, J. A. (1949) *Political Economy in Australia*, Melbourne: Melbourne University Press.

McGregor, D. H. (1942) 'Marshall and His Book', *Economica*, n.s. (9) November, 313–24, in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, vol. 2, 114–26.

Marshall, Alfred (1961) *Principles of Economics*, 9th variorum edn, ed. C. W. Guillebaud, London: Macmillan.

Marshall, Alfred and Marshall, Mary Paley (1879) *The Economics of Industry*, London: Macmillan.

Marshall, Mary Paley (1947) *What I Remember*, Cambridge: Cambridge University Press.

Mayhew, Henry (1851) *London Labour and the London Poor*, 3 vols, London: William Kimber.

Mill, John Stuart (1865) *Principles of Political Economy*, People's Edition, London: Longmans, Green, Reader and Dyer.

Olmsted, F. L. (1861) *Journeys and Explorations in the Cotton Kingdom*, 2 vols, London.

Pigou, A. C. (ed.) (1925) *Memorials of Alfred Marshall*, London: Macmillan.

Rae, John (1834) *Statement of Some New Principles of Political Economy*, Boston MA: Hilliard, Gray and Company.

Ricardo, David (1951) *Principles of Political Economy and Taxation*, in *Works and Correspondence of David Ricardo*, vol. 1, ed. P. Sraffa in collaboration with M. H. Dobb, Cambridge: Cambridge University Press.

Sidgwick, Henry (1885) 'The Scope and Method of Economic Science', reprinted in *Essays of Economic Method*, ed. R. L. Smyth, London: Duckworth, 1962, 73–97.

Syme, David (1871) 'On the Method of Political Economy', *Westminster Review*, n.s. 40, July, 206–18.

——(1876) *Outlines of an Industrial Science*, London: Henry S. King and Sons.

Tremenheere, Hugh Seymour (1854) *Report of the Commission Appointed to Inquire into the Operation of Act 5 and 6 Vict. c. 99 and into the State of the Population of the Mining Districts*, Parliamentary Papers, House of Commons, London, vol. XIX for 1854.

Whitaker, J. K. (1975) *The Early Writings of Alfred Marshall, 1867–1890*, London: Macmillan.

14 Alfred Marshall – women and economic development

Labour, family and race[1]

Introduction

When Marshall's *Principles of Economics* first appeared in 1890, one perceptive reviewer noted that its rich contents among other things pinpointed the case for women staying at home.[2] That case made its first appearance in Book II, dealing with 'some fundamental notions', in the chapter devoted to defining 'necessities', with special reference to 'the efficiency of an ordinary agricultural or of an unskilled town labourer', along with a 'well-drained dwelling with several rooms, warm clothing, with some changes of underclothing, pure water, a plentiful supply of cereal food, with a moderate allowance of meat and milk, and a little tea, &c, some education and some recreation'. Marshall lastly listed among the necessities of the labourer, 'sufficient freedom for his wife from other work to enable her to perform properly her maternal and her household duties'. If deprived of any of these things, the efficiency of the labourer suffered in the same way as that of a horse 'not properly tended', or a steam engine with 'an inadequate supply of coal' (Marshall 1890: 123; 1920: 69–70). Clearly an aspect of the quality of labour supply, Marshall pursued the matter further under that heading. After approvingly quoting Roscher's finding that the Jewish population of Prussia had increased faster than the Christian, though its birth-rate had been lower, because 'Jewish mothers seldom go away from their homes to work', Marshall commented on the fiscal illusion inherent in families' thinking and acting 'as though the family income was increased by all that the mother earns when she goes out to work'. Marshall's explanation was as follows:

> A little consideration would often show that the things she can buy with her earnings are of far less importance for the health and happiness of the family than the mere material services she could have rendered them if she had stayed at home, to say nothing of her moral influence in educating the children, in keeping the household in harmony and making it possible for her husband to be cheered and soothed in his evenings at home. This fact is getting to be understood by the better class of artisans and their wives; and there are not now very many mothers with young families at work in English and American factories.
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> (Marshall 1890: 252–3; 1920: 199)

Although, as shown subsequently, Marshall's perspective on the role of the wife in the family had clear implications for wage determination, through its effect on labour supply for example, the issue of the woman's role had a far wider dimension in this thought. It arose, as Edgeworth succinctly put it, from the leading part family life was to play in 'Marshall's ideal State'. This aspect of Edgeworth's reminiscences of Marshall is so instructive on Marshall's general views on the women's issue, that it can be quoted at length.

> The central figure would be the wife and mother practising pristine domestic virtues. But her interests were not to be confined to the family circle. At the opening of his remarkable discourse on the future of the working classes 1873 – comparable with Mill's chapter on that subject – Marshall asks 'Whether the quick insight of woman may not be trained so as to give material assistance to man in ordering public as well as private affairs'. Nothing that I have heard him say or have read in his writings leads me to believe that he answered this question in the negative. He had in his own home a proof that all the virtues and graces of domestic life could be combined with ability to assist in the preparation of the greatest modern treatise on the economic interests of men.
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> Concerns for the practice of family duties was the ground of Marshall's opposition to the granting of degrees to women (1896). Without offering an opinion on this issue, I may point out that his arguments were deduced from principles which with general approbation he applied to another issue, that which is raised by Socialism. Again and again he has expressed sympathy with the generous aspirations of the socialists, while declining to follow them far on untried abrupt paths. In a similar spirit he urges the Cambridge Senate to begin with half measures, to wait for experience before taking a step of doubtful policy but great magnitude.
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> It was not only in the matter of education that Marshall deprecated the identical treatment of men and women. In the most intimate of talks which I have had with him he expressed himself as opposed to current ideas which made for shaping the lives of men and women on the same model. In this connection he expressed strong dissent from some of Mill's treatment of sex as an 'accident'. Some loss of individual liberty, Marshall thought, should be risked for the sake of preserving the family. He regarded the family as a cathedral, something more sacred than the component parts. If I might complete the metaphor in my own words so as to convey the impression which I received: whereas the structure as it stands is not perfectly symmetrical, the attempt to make it so might result in pulling it down.
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> (Edgeworth 1925: 72–3)

Rather than looking at the whole of Marshall's views on the women's issue, some of them analysed in detail by Rita McWilliams-Tullberg (1975; 1990; 1991), this chapter examines Marshall's views on the role of women in the investment process leading to human capital creation, on the determinants of

women's wages and on the role of women in the workforce. In addition, it focuses on two issues guiding the mature Marshall in his decided view on the role of women in society. One relates to his interest both as Labour Commissioner, and more generally, as social investigator eager to discover facets of women's labour impinging on their nurturing role in the family. The second relates to his 'social Darwinist views' on marriage, heredity, race progress and social progress. The chapter therefore explores aspects of Marshall's thought which have tended to be ignored in the literature so far (for a partial exception, see Pujol 1984; 1992: ch. 8) although they all have an important bearing on what he himself used to call 'the high theme of economic progress' (Marshall 1920: 461, cf. xv).

Women's work best confined to the home

Work, work, work,
From weary chime to chime;
Work, work, work,
As prisoners work for crime,
Band and gusset and seam,
Seam and gusset and band,
Till the heart is sick and the brain benumbed
As well as the weary hand.

Oh! But for one short hour,
A respite, however brief!
No blessed leisure for love or hope,
But only time for grief!
A little weeping would ease my heart,
But in their briny bed
My tears must stop, for every drop
Hinders needle and thread.

(cited in Marshall 1873: 109)

The interest in the plight of the needle-woman revealed by Alfred Marshall's choice to quote from this poem in his first published paper on economics in 1873 was an interest in the conditions of women's work not sustained in his later published work. Even in that first paper, the inferences Marshall drew from the poem immediately eliminated its gender references. Its subsequent contents dwelt on the situation of the working classes as a whole and, more particularly, the consequences from certain types of work for men:

> Surely we see here how work may depress, and keep low 'the working classes'. Man ought to work in order to live: his life, physical, moral, and mental, should be strengthened and made full by his work. But what if his inner life be almost crushed by his work? Is there not then suggested a terrible truth by the term working man, when applied to the unskilled

> labourer – a man whose occupation tends in a greater or less degree to make him live for little save for that work that is a burden to bear?
>
> (Marshall 1873: 108)

In fact, Marshall's subsequent economic writing reveals relatively little interest in the condition of working women and associated issues such as women's wages. *The Economics of Industry*, written jointly with his wife, Mary Paley Marshall, herself a married working woman, is the major exception to this.[3] This is not to say that women had no place in Marshall's scheme of things economic: their crucial role in the family, particularly that associated with the nurture of young children, was frequently stressed in his major published work.

References to women as paid workers are, however, surprisingly infrequent in the pages of the *Principles*. The following remarks exhaust his comments on women's work *per se*. In the context of the division of labour, women managing machine looms are said to have work far less monotonous and calling for much greater judgements than that associated with the former hand-loom weaver (Marshall 1890: 316; 1920: 263). As an important industrial locational factor, textile works and other factory employers of women and children are claimed to be frequently situated in iron districts, because in their absence employment can only be found in such regions for 'strong men' and average family earnings are consequently low (Marshall 1890: 333; 1920: 273). In the chapter devoted to general influences of economic progress, women's factory work is equated to that of children in terms of required skill, ranking below that of 'men of ordinary capacity' (Marshall 1890: 724; 1920: 682).[4] Last, but not least, social progress is associated by Marshall with the interest of 'the coming generation … in the rescue of men, and still more in that of women, from excessive work; at least as much as it is in the handing down to it of a good stock of material wealth' (Marshall 1920: 694).[5]

Progress is also associated in the *Principles* with the relative improvement of women's wages.

> The wages of women are for similar reasons [their ability to handle machines and raised skills from the spread of education] rising fast relative to those of men. And this is a great gain in so far as it tends to develop their faculties; but an injury in so far as it tempts them to neglect their duty of building up a true home, and of investing their efforts in the personal capital of their children's character and abilities.
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> (Marshall 1890: 727–8; 1920: 685)

Apart from the reason stated in this passage, soon to be elaborated, higher relative wages for women were not necessarily a good thing in Marshall's view because of their potential effect on the family wage and the individual (male) wage in the context of minimum wage legislation for men and women workers:

> This last consideration seems to have been pushed on one side largely under the influence of a faulty analysis of the nature of 'parasitic' work and of its influence on wages. The family is, in the main, a single unit as regards geographical migration: and therefore the wages of men are relatively high, and those of women and children low where heavy iron or other industries preponderate, while in some other districts less than half the money income of the family is earned by the father, and men's wages are relatively low. This natural adjustment is socially beneficial, and rigid national rules as to minimum wages for men and for women, which ignore or oppose it, are to be deprecated.
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> (Marshall 1920: 715 n1)[6]

Marshall remained rather sceptical of the minimum wage notion for the whole of his life. The fact that only Australasia provided practical guidance on its operation at this stage was one reason. Moreover, he feared that minimum wage legislation would not be made effective and hence that its great potential benefits would not be fully secured. Such benefits included the contribution minimum wage legislation could make to removing much hardship for the most disadvantaged class of the population, which he described as 'the residuum' (Marshall 1920: 714–15).

Two issues need to be more fully explored here. In the first place, Marshall's notion of a family wage has an occasional ambiguity. Often it implies a number of wage earners in a family. A note in the *Principles* (Marshall 1890: 45 n1, and for its subsequent revisions, see Marshall 1961: vol. 2, 733) implies five wage earners in an artisan's family, sharing the increases in earnings to which the text refers. More generally, as in the last passage from the *Principles* quoted, family wage is defined as the aggregate earnings of a husband, wife and children employed. On other occasions, a family wage is identified with the necessaries to maintain a family in adequate comfort. A minimum family wage would then be designed to secure a satisfactory standard of comfort for the breadwinner in the household and its dependent members. Such a minimum family wage would therefore have been the most satisfactory means for securing Marshall's objectives of ensuring an adequate standard of life for the working classes without the necessity of sending wives and young children to work. However, and this is the second point, Marshall never seriously entertained the thought of adopting a minimum wage. In fact, he endorsed the Labour Commission's view that minimum or maximum rates of pay should not be legislated as a matter of principle. Marshall failed to link women's work explicitly at any time with economic necessity, perhaps generalising here from his own middle-class experience, where working wives and daughters indulged a desire to work from motives other than financial need. This indicates a further limitation to his analysis of this segment of the labour market, by a failure to distinguish between the different types of need which made particular classes of women enter the labour market.

Marshall's reference to locational aspect in the family wage returned to a theme in women's wage determination which he had first broached in *The*

Economics of Industry (Marshall and Marshall 1879: 175). Its more detailed analysis of the reasons for low female wages in England, not repeated in such a clear and succinct form in the later *Principles*, is worth quoting in full:

> In England many women get low wages, not because the value of the work they do is low, but because both they and their employers have been in the habit of taking it for granted that the wages of women must be low. Sometimes even when men and women do the same work in the same factory, not only the Time-wages, but also the Task-wages of the women are lower than those of the men. In so far as this inequality is due to custom, it will disappear with the progress of intelligence and of the habits of competition. But more of it than at first sight appears, is due to causes that are likely to be permanent. Employers say that if a man and a woman are equally good workers, the woman is of less service in the long run. For although she is generally more anxious than a man is to merit the approval of the employer or overlooker, – she does not give up her whole mind to her work in the same way as a man does; her work is more liable to be interrupted than that of a man, and she is less likely to continue at it during her whole life; partly for these reasons, her thoughts are occupied more about her home and less about the place in which she works than his are, and she has on the whole less persistence, and less judgment and resource in cases of difficulty. Thus though the accuracy with which women follow their instructions is very serviceable in some branches of the work, the employer often prefers to have men, because he can select from them foremen and overlookers as well as workers in those branches of the business in which discretion is wanted. Again many kinds of work which are generally regarded as light, occasionally require the use of great physical strength, and perhaps the working overtime in special emergencies; and for such work women are at a disadvantage. Thus the occupations for which women are well fitted are few, and therefore overcrowded and badly paid. And this influences custom and general opinion, and causes women to be underpaid when they are doing difficult work well.
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> (Marshall and Marshall 1879: 175–6)[7]

At this stage, the Marshalls expected part of the unequal pay problem to disappear with the progress of science, machinery and education, combined with some learning from French experience where much more of the work of business management was then in the hands of women as compared with England. The *Principles* later only pursued the argument with respect to the influence of machinery on the quality of work, and of education in raising skills and breaking down prejudice with respect to wages and labour conditions in general, and without reference to unequal pay between men and women. Moreover, the Marshalls' proud report that the largest and most successful brass works in Birmingham employed a woman as general manager, an example which needed to be more widely followed (Marshall and Marshall 1879: 176–7), was not reproduced in the *Principles*.

As already indicated, the Marshall of the *Principles* did not approve of high wages for women if this interfered with the crucial role women played in the family. In the first place, the female nurturing role benefited the level of 'general ability' in the nation. Such 'general ability' was a key factor in securing a productive and inventive work force for the nation. It 'depends largely on the surroundings of childhood and youth', and here 'the first far the most important influence is that of the mother', followed in turn by that of the father, of household servants and of the school. In this context Marshall noted that Galton's statement, that 'all great men have had great mothers', is an exaggeration, since this remark can only show

> that the mother's influence does not outweigh all others; not that it is not greater than any one of them. He [Galton] says that the mother's influence is most easily traceable among theologians and men of science, because an earnest mother leads her child to feel deeply about great things; and a thoughtful mother does not repress, but encourages that childish curiosity which is the raw material of scientific habits of thought.
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> (Marshall 1890: 263, n1; 1920: 207, n1)[8]

There are in addition longer-term influences of the responsible mother on labour supply. A beneficial effect of high wages on the death-rate may be diminished if mothers as a consequence neglect their duties to their children, while the strictly necessary consumption for the reproduction of a steadily improving workforce requires that adults take good care of their children (Marshall 1920: 529).[9] Other more detailed references to the importance of this essentially female role in the nurture of children as an investment in human capital can be given. A striking example occurs in the following remarks:

> If we compare one country of the civilized world with another, or one part of England with another, or one trade in England with another, we find that the degradation of the working-classes varies almost uniformly with the amount of rough work done by women. The most valuable of all capital is that invested in human beings; and of that capital the most precious part is the result of the care and influence of the mother, so long as she retains her tender and unselfish instincts, and has not been hardened by the strain and stress of unfeminine work.
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> This draws our attention to another aspect of the principle already noticed, that in estimating the cost of production of efficient labour, we must often take as our unit the family. At all events we cannot treat the cost of production of efficient men as an isolated problem; it must be taken as part of the broader problem of the cost of production of efficient men together with the women who are fitted to make their home happy, and to bring up their children vigorous in body and mind, truthful and cleanly, gentle and brave.
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> (Marshall 1890: 592–3; 1920: 564).[10]

Although in this context of the nurturing role in families, it is perhaps tempting to replace Marshall's emphasis on women's duties in the family with that on the mother alone, this was not what Marshall had in mind and kept to the forefront of the discussion. His was a wide notion of female family responsibility, that is, covering both mothers and daughters. He clearly explained this in his evidence to the Committee on Higher Education in Wales and Monmouthshire during December 1880. In the context of higher education for girls, Marshall indicated that 'the number of girls who can leave home [for higher education] is really very small' because

> the best women generally speaking are women whose families require part of their time; generally they have duties to perform to the fathers and mothers and sisters and brothers that take up some part of their time, and while a woman can give half her time for six years much more easily than a man can, she cannot give her whole time for three years as easily as a man can.[11]

Follow-up questions showed that Marshall was thinking here of college-aged girls, 17–23 years old, and that the best of these girls, as 'the bright lights in their families' are indispensable to these families because they not only make the 'home cheerful' but 'educate younger brothers and sisters', a matter which his experience as Principal at Bristol University College had brought home to him.[12] A further reason for Marshall's mature opinion on the nurturing role of girls in the family can be found in his own upbringing and family experience, in which his mother, his Aunt Louisa and his sisters Agnes and Mabel Louisa, played a particularly important role.[13]

Not directly as workers, but indirectly as nurturers and shapers of the future labour force were women important in Marshall's vision of a future civilised and developed society. High wages and improved methods of production were therefore useful in his scheme of things as catalysts to free women, young and old, from the drudgery of factory and domestic service, to enable them to concentrate all the better on their family responsibilities. Such views were, of course, not novel in the late nineteenth century. They were echoed, for example, by Sidney Webb's evidence to the Labour Commission, which indicated that, rather than prohibiting the employment of married women, 'the proper policy is to hasten the advent of such a social development in which mothers of families should be released from their present necessity of working for their living'.[14] Webb, however, advanced the notion of a high minimum wage to cater adequately for dependents, a solution which Marshall was unwilling to consider from principle. In this way, the *Principles* presented his vision of woman's future cogently, clearly but selectively when elaborating the national as well as the social and economic benefits which could be derived from it. Part of that selectivity arose from his obfuscation of the different motives which took women into paid employment, and his tendency to confine solutions to the problems to ones to which he could in principle give approval. For Marshall, this ruled out

legislated minimum family wages such as Webb endorsed, and generated a tendency unduly to treat working women as a homogeneous group independent of marital status or social class.

An empiricist on women's work

In early 1891 Marshall was appointed to serve on the Labour Commission, set up by the government of the day to investigate conditions of labour and industrial relations which could shed light on the causes of industrial disputes. Marshall's membership of the commission involved him in attending its hearings and by assisting in the drafting of its *Final Report*, an involvement in its work which Marshall described in the final years of his life as the most educational experience he had ever enjoyed (Marshall 1919: vi–vii). The commission saw its role as fact-gathering, and among the mountain of material it published was an extensive report on women's labour prepared for it by four assistant lady commissioners, and generally praised as one of the better outcomes from the commission's work (Webb 1894: 2–3, 21; Collette 1989: 13–14).

Little concrete evidence in the form of written material remains on what type of influence the commission had on Marshall's thinking (Groenewegen 1994). However, his active participation in the taking of evidence suggests that he used that opportunity of contact with working-class leaders, unionists and employers in part to further his knowledge about the influence of women's work on the manner in which working women could fulfil their household responsibilities. This corroborated views earlier expressed on the subject in the *Principles*. Marshall's tours of factories in the previous decade, as far as ascertainable from the notes taken by his wife on these occasions, were an earlier source of information on this subject. In combination, they provided part of the empirical foundation for the mature views on woman's socio-economic role which Marshall developed in his *Principles*, in conjunction with the inspiration on this subject he gained as an educationist.

Marshall's membership of Committee B of the commission, devoted largely to labour conditions in transport, enabled him to enquire at some length about the consequences for children's upbringing from women working on barges. Part of his questioning concerned the 'unwomanly nature' of the work on barges, in terms of its form and the hours of labour; part of it consisted in ascertaining facts on the educational opportunities for the children of married couples employed in this segment of the transport industry. Its aim was to discover whether suitable methods of inspection could be found to ensure that barge children received adequate education, or whether it was feasible to end women's labour on the boats. On both scores the answers Marshall received tended to be in the negative (Royal Commission on Labour 1892: 300–1, 305; 1893: 22). In addition, Marshall sought more general information on the attitudes of male workers to women's employment, for example, in the upholstery-making industry; and on the prohibition in certain trades against the employment of married women (Royal Commission on Labour 1893a: 220–1).

At a more general level, Marshall learned much on the subject from the commission's reports on the employment of women and women's labour conditions (Royal Commission on Labour 1894a: 478–82, 507–10).[15] In the matter of wages, these corroborated the vast differential between male weekly wages and those paid to women and girls. This ranged from an almost threefold difference in the silk industries and the potteries to a little less than double in the retail trade, in textiles and footwear. The gradual and general rise in women's wages over time, the *Principles* proclaimed, likewise found support in the statistical investigations of the commission, particularly when interpreted in real terms. However, these data also indicated that in the three decades before 1890 the growth in male wages far outstripped the most favourable wage growth for women, contrary to the drift of the general trend in this differential Marshall had reported in the *Principles* (Marshall 1890: 727–8; 1920: 689).[16]

Marshall's hostility to the work of married women in factories would have been strongly reinforced by the information gathered on this subject through the commission. Considerable evidence was collected on the deleterious effects on the health of children of married women who worked; both from 'careless nursing' on the part of working mothers, and from the 'injudicious treatment' children received from their minders while their mothers were at work. Medical officers corroborated this evidence. Among the worst consequences of the all-too-frequent inexperience, youth and negligence of the child-minders, were excessive use of sleeping draughts for quietening their charges, accidents from burns or scalds, and exposure to the influence of bad weather. Partly from its long and irregular hours, work at home in the 'sweated' trades carried dangers with it for the sleep of the children, as well as of ill health for the women engaged in it. In addition, making home the workplace entailed other sanitary hazards. The commission also found that heavy and dangerous work in the chemical and white-lead industrries, as well as in nail- and chain-making, by affecting both mothers and their future offspring, was doubly bad. Finally, the picture it painted of sanitary conditions in many workplaces, and the particular dangers from the nature of employment in specific industries, demonstrated that many of the employment opportunities for women were highly unsuitable for those involved in the rearing of children. The summary evidence reported on this issue to the commission therefore explains the dangers to the future generations Marshall diagnosed as the major cost of working women. The appropriate remedy for such evils could be found, of course, equally well in better factory legislation combined with improvement in its enforcement, as in active discouragement of the employment of married women. This was a point Marshall invariably failed to make.

The final report of the commission (Royal Commission on Labour 1894b) was rather cautious on the issue of employment of married women. Since Marshall signed it without reservations, he must have agreed with its thrust. The commission listed four objections against the employment of married women. The first of these concerned complaints that married women competed unfairly with unmarried women, since their husbands' wages enable them to

work for lower rates than their unmarried female competitors. More relevant to Marshall's views on the impact of working married women on domestic duties, the commission reported considerable evidence that in this situation, 'homes are made comfortless, and children and husbands neglected'. This not only came from oral evidence presented by workmen, it was confirmed 'in some instances' from 'the personal inspection made by the Lady Assistant Commissioners'. Heavy labour for women at a time when they were close to childbirth was likewise condemned in the case of specific industries such as nail- and chain-making, as were the dangers of employment of married women in white-lead works and potteries because of the effects of absorbed poison and dust to both themselves and their children. Finally, the employment of mothers in factories was condemned as generally harmful to their children. In particular, medical evidence was cited to support a period of no-work for three months after childbirth in the interest of lowering infant mortality in specific factory districts. The commission did not see more legislation as the answer to most of these complaints. Two reasons were given: the presence of young children in the family often created an economic necessity for the woman to work; second, married women were said to prefer factory work to escape the monotony of a life exclusively devoted to domestic duties. Few other recommendations on the subject of women's labour were presented by the commission to ameliorate these distressing conditions, with the exception of suggestions for improvements in factory inspection (Royal Commission on Labour 1894b: 93–4, 107–9).[17]

Marshall's work on the Royal Commission on Labour only reinforced his views on the longer-term detrimental consequences of women's work in factories in 'unwomanly' occupations. After all, he had published such views with little variation from the first edition of the *Principles* in 1890. Much of the data on which these views had been formed were gathered during the tours of inspection of factories that the Marshalls tended to organise as part of their English summer vacations during the 1880s and after. These followed a pattern Marshall himself appears to have initiated when he first became interested in social questions during the late 1860s. An 1883 visit to the Worcestershire pottery industry produced notes (in Mary Paley's handwriting) commenting on the substantial employment it offered to women, 'largely in unskilled, mechanical tasks', while their 'apprenticed work' was confined to 'low grade painting and transferring'. The notes also indicated that women did most of the unsanitary work, such as 'scrubbing of the biscuit pottery' with its high risk of respiratory illness from inhaling the ensuing dust, and dipping pottery ware into glaze containing lead. Nevertheless, women continued in their place of employment in the potteries after marriage because they found the work on the whole pleasant and healthy, except from the dust and heat of the kilns.[18] More detailed notes have been preserved of a similar tour in the summer of 1885, taking in Cumbria and the Lake District. Its evidence was mixed on the issue at hand, reporting as it did on the suitability of women for factory work, but also on some of its consequences: 'dirty children' and women's tasks concentrated in 'dirty and disagreeable work'.

Barrow: rapid growth. Saw large steel works and beautiful factory girl. Is factory life or domestic service best (i) for the girl (ii) for the race? Wonderful floating dry dock. Saw varieties of ore. Bessemer process.

August 15. Lancaster. Charming, rather conservative looking old town but good deal of manufacture chiefly furniture. Beautiful park with wonderful air and view. Visited Gillows. Machines for cutting square furniture. Advantages of large production make it worthwhile to have excellent design. No women employed except for sewing upholstery. The most artistic woodcarvers are Irishmen. Deaf and dumb wood carvers.

August 25–27. Preston. Fine enterprising town. Most beautiful hotel we have seen.

Aug. 26. Visited Horrocks spinning and weaving mills. Went in trams and walked in working people's quarter. Children dirty. Excellent houses and furniture nearly universal. Favourite ornaments: large china dogs. Quiet and respectable appearances of factory women. August 27. Visited spinning and weaving mills. Were taken over works by head manager. He preferred women to men for all work except overlooking engineers. Said they were easier to manage and cleverer with fingers. Said that present strike in cotton trade might lead to employing women to mind self acting mules. Present objection to their doing so is the amount of exercise required equal to walking 20 or 30 miles. Probably machine can be modified. He said it was common for mothers of young children to work. Said the women grew very fond of the work. Not uncommon for a family to make £4 a week. Noticed high ratio of women to men in Preston especially when over 15 years. Many Irish …

[September 21st. Sheffield] … In afternoon saw Hutton's electroplate establishment. Were struck by inferiority of machinery. Women employed at scrubbery, electroplating, burnishing and packing. The scrubbing was very dirty and disagreeable work.

The next day the Marshalls inspected a file-making works 'and we saw all the process'. The advantages of file-cutting by machine were demonstrated by the fact that hand-cutting required no less than a seven-year apprenticeship, while after only three hours a girl with a machine 'could cut files' fairly well. 'Guide said that the handcutters were gradually put to machine and there earned higher wages'. In 1888, a trip which included Leicester brought the following observation from a factory making boots and shoes:

Machinery, very complex and interesting. One machine had a metre to record stitches and 5d. per 1000 had to be paid to owner of the *patent*, an agent coming round to inspect metre from time to time. Machines for bending the 'uppers' for button holes, for putting in eyes. The work requiring most attention was clicking, or cutting out the uppers from the hides. The manager spoke very highly of the *women*; they were employed in such work as putting eyes in, button holing and stitching, for which last

> work some earned £1 a week. He said the women were quick and clever and could become checkers – only the men would object – only he confessed that marriage would interfere with the training to such work, and he objected to employing married women unless in exceptional cases. The women employed were very high class looking, and looked very healthy and cheerful. He said that they used their money better than the young men; they earned a good deal. He said that boys often earned high wages and spent them badly. One lad of 14 earned 16/- a week; 6/- he gave to his parents for board and 10[/-] would be wasted in theatre, gambling, etc. That men only gave their wives half their wages and wasted the rest.

Evidence gathered by the Marshalls on the value of women as workers because of their special advantages and skills, had already been noted by Mill (1865: 179). It was, however, ignored by Marshall in the *Principles*, who likewise omitted any reference to hostile male reactions to such female workers' qualities in his account of labour and production. This reveals that Marshall was prone to a certain selectiveness in his use of evidence, and a tendency to reject factual material not congenial to him.

Given his first-hand experience with women's work in factories and the dangers to which this occasionally exposed them, it is not surprising that Marshall used such information to argue for confining women's employment to more genteel occupations. Nursing, teaching and social work, all derivative from and associated with what he saw as women's main function in life in domestic household duties of serving the family, were the type of work, preferably on a voluntary basis, in which he liked to see women involved. Marshall expressed this strong belief in the necessity of such a sexual division of labour on many occasions, particularly in the context of intellectual pursuits and education. By way of example, a conversation on the subject with Beatrice Webb may be quoted first.

> Interesting talk with Professor Marshall, first at dinner at the Creightons, and afterwards at lunch at his own house. It opened with chaff about men and women; he holding that woman was a subordinate being, and that, if she ceased to be subordinate, there would be no object for a man to marry. That marriage was a sacrifice of masculine freedom, and would only be tolerated by male creatures so long as it meant the devotion, body and soul, of the female to the male. Hence the woman must not develop her faculties in a way unpleasant to the man: that strength, courage, independence were not attractive in women; that rivalry in men's pursuits was positively unpleasant. Hence masculine strength and masculine ability in women must be firmly trampled on and boycotted by men. *Contrast* was the essence of the matrimonial relation; feminine weakness contrasted with masculine strength; masculine egotism with feminine self-devotion.
>
> 'If you compete with us we shan't marry you', he summed up with a laugh. I maintained the opposite argument; that there was an ideal of char-

acter in which strength, courage, sympathy, self-devotion, persistent purpose were united to a clear and far-seeing intellect; that the ideal was common to the man and to the woman; that these qualities might manifest themselves in different ways in the man's and woman's life; that what you needed was not different qualities and different defects, but the same virtues working in different directions, and dedicated to the service of the community in different ways.

At lunch at his house our discussion was more practical. He said that he had heard that I was about to undertake a history of Co-operation.

'Do you think I am equal to it?' I asked.

'Now, Miss Potter, I am going to be perfectly frank; of course I think you are equal to a history of Co-operation; but it is not what you can do best. There is one thing that *you* and only you can do – an inquiry into the unknown field of female labour. You have, unlike most women, a fairly trained intellect, and the courage and capacity for original work; and you have a woman's insight into a woman's life. There is no man in England who could undertake with any prospect of success an enquiry into female labour. There are any number of men who could write a history of Co-operation, and would bring to this study of a purely economic question far greater strength and knowledge than you possess. For instance, your views on the relative amount of profit in the different trades, and the reason of the success of Co-operation in cotton and its failure in the woollen industry might interest me; but I should read what you said with grave doubt as to whether you had really probed the matter. On the other hand, if you describe the factors enabling combinations of women in one trade and destroying all chance of it in the other, I should take what you said as the opinion of the best authority on the subject. I would think to myself, well, if Miss Potter has not succeeded in sifting these facts no one else will do so, so I may as well take her conclusion as the final one. To sum up with perfect frankness: if you devote yourself to the study of your own sex as an industrial factor, you name will be a household word two hundred years hence: if you write a history of Co-operation it will be superseded and ignored in a year or two. In the one case you will be using unique qualities which no one else possesses, and in the other you will be using faculties which are common to most men, and given to a great many among them in a much higher degree. A book by you on the Co-operative Movement I may get my wife to read to me in the evening to while away the time, but I shan't pay any attention to it', he added with shrill emphasis.

Of course I disputed the point, and tried to make him realise that I wanted this study in industrial administration as an education for economic science. The little professor, with bright eyes, shrugged his shoulders and became satirical on the subject of a woman dealing with scientific generalisation; not unkindly satirical, but chaffingly so. He stuck to his point and heaped on flattery to compensate for depreciation.

(Webb 1938: 398–9)[19]

Two fragments preserved in the Marshall Library, one dating from 1884 on technical education, and an undated one on the higher education of women, both filed with general notes on production and the division of labour, reiterate some of the views mentioned to Beatrice Webb and place them in a broader perspective. First, the brief fragment on women and technical education, containing little more than a few sentences in note form.

> What women can do.
>
> Of course they may work as man in some cases this is no doubt right.
>
> A washer woman ought certainly to have technical knowledge.
>
> That the great point is that they are trained. If they will teach their children to do whatever they do with all their might, we all soon become a skilled nation.[20]

Second, a longer fragment headed 'The higher education of women'.[21]

> This does not mean the opening to them new regions of thought. Their studies are, in name at least, ambitious as they are.
>
> It means educating and applying firstly, the power of sustained close attention to one difficult point after another, and secondly, the power of consecutive thought in a large number of difficult points taken together so as to be able to realise the mutual relations of the various positions of one whole body of knowledge, thought or active feeling.
>
> These powers do not constitute originality but they are absolutely indispensable conditions of it; provided the originality is to be of any service to the world. A one sided originality such as Rousseau's, great in its effects for good but often also great in its effects for evil, can be attained by long, continued brooding over one leading thought, emotion, desire, or artistic enthusiasm [Rousseau's life was one such long continued brooding] without systematic firm-willed thinking out of difficulties.
>
> There is every reason to believe that the reason why women had held the *first* place in so very few departments even of literature and art is that they have not, save in exceptional cases, had such a training.
>
> Whether five thousand years ago there was a distinction between the calibre of men's and women's minds, and whether there will be such a distinction five thousand years hence may be an open question. It is certain that such a distinction exists now; that women are quicker to perceive and more strengthful to feel than men; but that, on the average, they have less power of sustained concentration.

As Rita McWilliams-Tullberg (1991: 235) has shown, Marshall applied his doctrine of sexual division of labour also to economics studies. Fragments preserved in the Marshall Library indicate the nature of the division of labour he had in mind, partly generalised, it seems, from the advice he had given to Beatrice Webb some years before. Moreover, its specific implications for

women's potential to contribute significantly to advanced work in economics were made quite explicit, a perception which explains Mary Paley's delight in 1933 when, on the publication of Joan Robinson's *The Economics of Imperfect Competition*, she told people she would now be able to inform her late husband that this event invalidated his thesis that women were incapable of developing economic theory and analysis (cited in Harcourt 1982: 349). Marshall's musings on this aspect of female incapacity can be quoted in full: 'Economics is like a fine chest of tools, which will not turn out anything of value except in skilful hands. This indicates that economics is a subject generally unsuited for advance by women'. Women had comparative advantage in 'minor inquiries' enabling use of their specialised resource endowments, of which the following were important examples:

- abundance of leisure;
- interest in the concrete;
- interest in personal matters;
- sympathies;
- access to the Unimportant individually, but numerous and therefore important collectively;
- power of pursuing certain delicate inquiries relating to women and children in which a man would be out of his element.

(cited in Rita McWilliams-Tullberg 1991: 235)

of which the last could be called the Beatrice Webb case.

For Marshall therefore, his personal experience from observation and practice at the university had shown the need for a sexual division of labour from the 'self-evident' nature of things, at least in the foreseeable future.[22] Women's 'natural' role in the family as child nurturers, mothers, comforters and guardians of a wholesome environment barred them from 'unwomanly' activities in factories and workshops. Their different mental capacities implied a distinct position for them from men with respect to the higher occupations of the professions and the arts. Ergo, their widely accepted status as home makers in the service of the family, combined with associated, if not derivative, occupations of nursing, teaching and organised charity or social work, were the best possible outcome for the type of world and society which could be realistically envisaged. It also secured, as the scientific evidence showed to Marshall's satisfaction, the maximum benefit for the future of nation and race.

Evolution, eugenics, craniometry and sexual division of labour

The wider issues for the future which the perspectives of women's social and economic role raised for Marshall reflect his strong interest in evolutionary theory, 'social Darwinism', and its implications for heredity and eugenics. Although Marshall, like most of his intellectual contemporaries, had studied Darwin's *Origin of Species* during the 1860s and appreciated the importance of

the ideas on social and biological evolution as developed by Herbert Spencer for the greater part of his life (Whitaker 1977: esp. 459, 470–2, 477–8), such evolutionary views were not really interwoven with the fabric of his mature economic thought until he started writing the *Principles* from the early 1880s (Becattini 1975: xix). Its motto from the title page, *natura non facit saltum*, combined with the *Principles*' underlying theme of demonstrating the principle of continuity in economic and social life in its various manifestations, emphasised the importance of these evolutionary aspects to Marshall's foundations for the science of man in the ordinary business of life. His perspectives on the importance and role of the family in social progress are a striking, and not too well known, illustration of this tendency in the *Principles*. A particularly fine example in this context is the opening chapter on industrial organisation of the *Principles*, where this theme recurs again and again, and whose concluding section can be quoted to illustrate the features of his work to which this section draws attention:

> Herbert Spencer has insisted with much force on the rule that, if any physical or mental exercise gives pleasure and is therefore frequent, those physical or mental organs which are used in it are likely to grow rapidly. Among the lower animals indeed the action of this rule is so intimately interwoven with that of the survival of the fittest, that the distinction between the two need not often be emphasised. For as it might be guessed *a priori*, and as seems to be proved by observation, the struggle for survival tends to prevent animals from taking much pleasure in the exercise of functions which do not contribute to their well-being.
>
> But man, with his strong individuality, has greater freedom. He delights in the use of his faculties for their own sake; sometimes using them nobly, whether with the abandon of the great Greek burst of life, or under the control of a deliberate and steadfast striving towards important ends; sometimes ignobly, as in the case of a morbid development of the taste for drink. The religious, the moral, the intellectual and the artistic faculties on which the progress of industry depends, are not acquired solely for the sake of the things that may be got by them; but are developed by exercise for the sake of the pleasure and the happiness which they themselves bring: and, in the same way, that greater factor of economic prosperity, the organisation of a well-ordered state, in the product of an infinite variety of motives; many of which have no direct connection with the pursuit of national wealth.
>
> No doubt it is true that physical peculiarities acquired by the parents during their life-time are seldom if ever transmitted to their offspring. But no conclusive case seems to have been made out for the assertion that the children of those who have led healthy lives, physically and morally, will not be born with a firmer fibre than they would have been had the same parents grown up under unwholesome influences which had enfeebled the fibre of their minds and their bodies. And it is certain that in the former case the children are likely after birth to be better nourished, and better

trained; to acquire more wholesome instincts; and to have more of that regard for others and that self-respect, which are the mainsprings of human progress, than in the latter case.

It is needful then diligently to inquire whether the present industrial organisation might not with advantage be so modified as to increase the opportunities which the lower grades of industry have for using latent mental faculties, for deriving pleasure from their use, and for strengthening them by use; since the argument that if such a change had been beneficial, it would have been already brought about by the struggle for survival, must be rejected as invalid. Man's prerogative extends to a limited but effective control over natural development by forecasting the future and preparing the way for the next step.

Thus progress may be hastened by thought and work; by the application of the principles of Eugenics to the replenishment of the race from its higher rather than its lower strains, and by the appropriate education of the faculties of either sex: but however hastened it must be gradual and relatively slow. It must be slow relatively to man's growing command over technique and the forces of nature; a command which is making ever growing calls for courage and caution, for resource and steadfastness, for penetrating insight and for breadth of view. And it must be very much too slow to keep pace with the rapid inflow of proposals for the prompt reorganisation of society on a new basis. In fact our new command over nature, while opening the door to much larger schemes for industrial organisation than were physically possible even a short time ago, places greater responsibilities on those who would advocate new developments of social and industrial structure. For though institutions may be changed rapidly; yet if they are to endure they must be appropriate to man: they cannot retain their stability if they change very much faster than he does. Thus progress itself increases the urgency of the warning that in the economic world, *Natura non facit saltum*.

Progress must be slow; but even from the merely material point of view it is to be remembered that changes, which add only a little to the immediate efficiency of production, may be worth having if they make mankind ready and fit for an organisation, which will be more effective in the production of wealth and more equal in its distribution; and that every system, which allows for the higher faculties of the lower grades of industry to go to waste, is open to grave suspicion.

(Marshall 1920: 247–9)[23]

Marshall's fairly optimistic picture on the potential of humankind to control its destiny followed a more pessimistic prognosis on the future of the race. This was based on the weakening of natural, evolutionary forces as the means of preserving the 'vigour' of the population through a variety of causes. These included medical success in eliminating some infectious diseases, and the growing tendency of the better classes of society to limit the size of their

families, often for selfish economic reasons. Once again, these remarks highlight responsibility and duty of the family unit for Marshall, focusing particularly on the importance of the mother in ensuring the future quality of the population. Achieving this aim, in addition, required a steady rise in the standard of life ensured through the combination of increased wealth, the wisdom of government and the growth of knowledge:

> Thus there are increasing reasons for fearing, that while the progress of medical science and sanitation is saving from death a continually increasing number of the children of those who are feeble physically and mentally; many of those who are most thoughtful and best endowed with energy, enterprise and self-control are tending to defer their marriages and in other ways to limit the number of children whom they leave behind them. The motive is sometimes selfish, and perhaps it is best that hard and frivolous people should leave but few descendants of their own type. But more often it is a desire to secure a good social position for their children. This desire contains many elements that fall short of the highest ideals of human aims, and in some cases, a few that are distinctly base; but after all it has been one of the chief factors of progress, and those who are affected by it include many of those whose children would probably be among the best and strongest of the race.
>
> It must be remembered that the members of a large family educate one another, they are usually more genial and bright, often more vigorous in every way than the members of a small family. Partly, no doubt, this is because their parents were of unusual vigour; and for a like reason they in their turn are likely to have large and vigorous families. The progress of the race is due to a much greater extent than appears at first sight to the descendants of a few exceptionally large and vigorous families.
>
> But on the other hand there is no doubt that the parents can often do better in many ways for a small family than a large one. Other things being equal, an increase in the number of children who are born causes an increase of infantile mortality; and that is an unmixed evil. The birth of children who die early from want of care and adequate means is a useless strain to the mother and an injury to the rest of the family. It seems *prima facie* advisable that people should not bring children into the world till they can see their way to giving them at least as good an education both physical and mental as they themselves had; and that it is best to marry moderately early provided there is sufficient self-control to keep the family within the requisite bounds without transgressing moral laws. The general adoption of these principles of action, combined with an adequate provision of fresh air and of healthy play for our town populations, could hardly fail to cause the strength and vigour of the race to improve. And we shall presently find reasons for believing that if the strength and vigour of the race improves, the increase of numbers will not

for a long time to come cause a diminution of the average real income of the people.

Thus then the progress of knowledge, and in particular of medical science, the ever-growing activity and wisdom of Government in all matters relating to health, and the increase of material wealth, all tend to lessen mortality and to increase health and strength, and to lengthen life. On the other hand, vitality is lowered and the death-rate raised by the rapid increase of town life, and by the tendency of the higher strains of the population to marry later and to have fewer children than the lower. If the former set of causes were alone in action, but so regulated as to avoid the danger of over population, it is probable that man would quickly rise to a physical and mental excellence superior to any that the world has yet known; while if the latter set acted unchecked, he would speedily degenerate.

As it is, the two sets hold one another very nearly in balance, the former slightly preponderating. While the population of England is growing nearly as fast as ever, those who are out of health in body or mind are certainly not an increasing part of the whole: the rest are much better fed and clothed, and except in over-crowded industrial districts, are generally growing in strength. The average duration of life for men and women has been increasing steadily for many years.

(Marshall 1920: 201–3)[24]

The changes in detail in these lengthy passages as compared with earlier editions[25] reveal several interesting features about Marshall's thinking on these matters. They show that from 1890 to 1920 Marshall was not just a passive, academic observer, writing on the subject of race improvement only as an adjunct to questions of the theory of production, industrial organisation and quality of population in connection with labour supply. For Marshall, such discussion also involved the ends of economics, that is, the progressive improvement of all of humankind over time through raising the standard of life in the special sense in which he used that term (Marshall 1920: 689–90). Revisions in the detail recorded over these three decades reflect the passionate interest with which he followed advances in the 'science' of heredity and eugenics. Marshall's beliefs on these subjects cannot be discussed in detail, but his substantial involvement in eugenics and heredity needs to be emphasised to assist explaining some of his opinions on women.[26]

In the first place, Marshall became a foundation life member of the Cambridge Eugenics Society on its establishment, immediately sending a life membership subscription to its newly elected secretary, John Maynard Keynes.[27] Marshall also attended occasional lectures on heredity and eugenics at Cambridge University, an interest which sometimes led to correspondence with the lecturer to answer queries.[28] Marshall widely, and critically, followed the burgeoning literature on heredity, particularly books which placed the topic in its wider social context, and likewise discussed aspects of their contents in

correspondence with their authors.[29] In the summer of 1910, ably assisted by John Maynard Keynes, the topic induced him to enter public controversy with Karl Pearson on the issue of alcoholism in parents and heredity. This was a subject of long-standing interest to Marshall, as indirectly shown, for example, in the passages from the *Principles* quoted at the start of this section.[30] Marshall's published views tended to follow changes in scientific knowledge on heredity rather closely, and his desire to present, as far as possible, up-to-date opinions, induced the frequent changes in detail which can be noted on this subject in the successive editions of the *Principles*.[31]

The fears and anxieties about the prospects for the British 'race' expressed by Marshall in this material also reflected the times. Although never xenophobic,[32] Marshall was always the Englishman proud of his nation's achievements. His pride in being British made him all the more fearful about signs of its economic decline. Such decline he realistically saw as fairly imminent, and attributed to many factors.[33] A more skilled and vigorous labour force was clearly one way of counteracting British decline. Such considerations undoubtedly provide one of the reasons for Marshall's stress on heredity, eugenics and the standard of life in the context of production, and more specifically, that of the quality of future labour supply. The theory of heredity, as it was then understood, was a major input for his views on these matters, enabling linkages to the role of the family, and to the specific responsibilities of the parents therein.[34]

Marshall firmly believed that the evidence supported the view that the children of those who led a healthy life would themselves be healthy in the full sense of the word. He likewise believed, on the basis of evidence he had gathered, that such a healthy family environment was not easily provided in households where women worked in the unhealthy surroundings of factories and in 'sweated trades'. Both mother and sisters of a family were essential to the necessary quality of the family environment which secured the health of its present and future members. Race progress and national survival in this sense depended on the role Marshall assigned to the family, and the necessary role of women in the family environment. For him, this chain of reasoning did not rest on prejudice but on the empirical and scientific evidence gathered patiently by himself from the 'science' of heredity. The subjection of women to the needs of the family, and the limitation on their freedom which that implied, arose from his social Darwinist vision of race survival, race preservation and race progress. In that sense, as in others, Marshall reflected the spirit and the knowledge of his time (cf. Whitaker 1977: 480; Richards 1983: esp. 97–100).

Marshall gained more from evolutionary theory on the women's question. He gained the belief in the relative mental inferiority of women from the pioneers of evolutionary theory themselves, that is, from work by Darwin and Herbert Spencer. Both Darwin's *Descent of Man* (Darwin 1871) and Spencer's *First Principles* (Spencer 1862), the first largely basing himself on Galton's research on hereditary genius, explicitly argued women's mental inferiority to men as a justification for a sexual division of labour which, in particular, had important

implications for policies on women's education. (For example, Darwin 1871: 888, 911, 923–6, 944–6; Spencer 1862: 136–7 and n; and for a detailed discussion of this subject, Richards 1983.) For Marshall, such evolutionary 'evidence'[35] would have strengthened his willingness to accept the views of other social scientists whom he admired. An example is Le Play's basic 'law of inequality governing all the interesting issues concerning the two sexes', with its application to education reaching the conclusion that 'the truest form of education for girls was found at the domestic fireside' (Le Play 1887: vol. 2: 397–400, my translation).

Such 'truths' from the findings of social scientists supplemented Marshall's uncritical embrace of the crude applications made by eugenists of the lessons to be learned from what is now appropriately described as 'the mismeasurement of man' (Gould 1981). Marshall, the youthful collector of pictures of the famous in the hope they would lead to conclusions which, according to his wife (Mary Paley Marshall 1947: 15–16), they never did, would have placed considerable credence on contemporary findings in craniometry when applied to higher education for women:

> A desire to give them [women] the same education, and as a consequence, to propose the same goals for them, is a dangerous chimera. … The day when, misunderstanding the interior occupations which nature has given her, women leave the home and take part in our battles, on this day a social revolution will begin, and everything that maintains the sacred ties of the family will disappear.
>
> (Le Bon 1870, cited in Gould 1981: 105)

The science of evolution was crucial to the manner in which Marshall developed his views on women in the *Principles of Economics*, in which he assigned them the nurturing role to enhance the quality of future labour supply, rather than a direct role in production for the market.

Conclusion

The picture of Marshall's treatment of the women's issue presented here enables a different explanation of his views than if that presentation had concentrated on his involvement in the women's degree issue at Cambridge, or on the saga of his repudiation of *The Economics of Industry* when his own primer based on the *Principles* was ready to replace it (McWilliams-Tullberg 1975; 1992). His attitudes to women in the labour force, outmoded as they are in terms of current thinking and practice, can be defended partly on grounds of both the lofty motives in the context of which they were presented and the contemporary scientific and empirical backing on which that presentation appeared to rely. Such a viewpoint can be briefly elaborated.

The logic of Marshall's argument has considerable consistency, given what he took as his factual premises about the importance of the appropriate family atmosphere for securing a progressive improvement in the 'race'.[36] Substantial

evidence was available on the importance of female and family influence on the rearing of children, while the general improvement of the genetic stock promulgated by a widespread rise in nurturing standards, education and quality of family life followed for him from Galton's theory of natural inheritance (Galton 1889: esp. ch. 7). Marshall also assiduously collected evidence on the detrimental influence of women's factory work on households and children, both from his work on the Royal Commission on Labour, and earlier from his own factory inspections during the 1880s. As Edgeworth recalled after Marshall's death, the existing family structure was a crucial factor in Marshall's analysis of human progress to an eventual ideal state, since not only quality of labour supply but rises in the standard of life largely depended on it. Hence his hostility to the notion of 'modern women', which threatened established monogamous institutions of marriage on which the institution of the family rested; a hostility able to rise to ridiculous proportions when, as reported in John Neville Keynes' diaries,[37] Marshall 'refuses to meet Miss Clough because she is in favour of woman suffrage', despite the fact that as an employee at Newnham College, she was also his wife's close associate and friend.

On aspects of the women's question, Marshall can therefore be described as 'the scientist observing his contemporaries' behaviour and attitudes' (Whitaker 1977: 480), applying the latest lessons from published science to his findings. However, this unduly neglects his role as dogmatist and preacher in his stance on the subject, out of step with his scientific detachment. The rising relative wages of women and young persons, discussed briefly in the *Principles* and elsewhere in terms of technical and social progress, are in one of Marshall's more 'chivalrous' moments ascribed solely to the altruism of man (Marshall 1907b: 327). More importantly, the question of the rights of married women to choose whether they work or not, reflecting the opinion of some women as noted in the *Final Report* of the Royal Commission on Labour that housework was a monotonous drudgery to be escaped, never found a place in later editions of his *Principles*. Such choices were detrimental to his views on household work as part of the necessities required to obtain efficiency from the agricultural labourer or unskilled working man. Moreover, the labour commission's recognition that legislative reform and its enforcement could remove the worst effects of factory work on women was a lesson Marshall chose not to share with his readers. Nor was he willing to remove a necessity for married women to work by advocating a legal minimum wage designed to ensure adequate provision for the breadwinner's dependents.

Furthermore, much of Marshall's opinion on the economic and social role of woman was dictated by what he described as woman's natural mental abilities, which differed substantially from those of most men, and which prevented the vast majority of them from doing constructive theoretical work. Such ideas had been imbibed from his immersion in evolutionary thinking. When that picture started to crumble with the substantial academic successes women obtained at his own beloved Cambridge, and even in his more beloved economics and politics tripos (cf. Macgregor 1942: 313–14), that picture of woman's mental ability was never revised in the light of the new evidence. In short, there was much

unscientific prejudice, and perhaps even something 'selfish', in Marshall's support for the sexual division of labour and the arguments on which that rested. The interesting point is, however, that Marshall raised these types of issue and did not, as a latter-day Robbinsian, cast them out as non-economic. Progress is more than maximising utilities. Efficiency goes beyond the minimisation of excess burdens. Marshall's discussion of the humble housewife allocating her scanty budget, or exploring the choice of technique in knitting a vest, and his perspectives on 'domestic economy' which place it within both the theory of production and consumption (Marshall 1920: 118–19, 357 n1), betray a definition of scope which takes economic behaviour well beyond the market. Even though the answers Marshall gave to the questions he posed in the context of women's issues are wrong, and based on prejudice rather than scientific evidence, the questions he asked need asking, and the social and dynamic dimension he introduced with them is worth emulating when framing questions today. Marshall clearly internalised the role of women in his *Principles of Economics*, to a far greater extent than Sidgwick, Fawcett or even Mill had done, even though this discussion gave as little space to women's paid work as did his contemporaries. It nevertheless gave women as nurturers an explicitly crucial role in economic development, fundamental to the future quality of the labour force, the preservation of the family and the race. However, it thereby also restricted their freedom to choose, a form of restriction he less easily condoned in other spheres of economic life.

Notes

1 This paper is part of the research undertaken for my forthcoming biography of Alfred Marshall [published in 1995 as *A Soaring Eagle: Alfred Marshall, 1842–1924* (Groenewegen 1995)]. Support for this project from the Australian Research Council is gratefully acknowledged. The paper has benefited from comments given during the workshop on 'Feminism and Economics in Victorian England' organised by the University of Sydney's Centre for the Study of the History of Economic Thought, in particular those by Flora Gill, and subsequently from those by Rita McWilliams-Tullberg and Michael White, without implicating them in the final product.

2 *Reynolds Magazine*, 30 July 1890 (cutting in Marshall's scrapbook, Marshall Archive, University of Cambridge).

3 Mary Paley, one of his students who sat for the moral sciences tripos in 1874, and to whom he was married in 1877, continued her work as lecturer in political economy (begun at Newnham College in 1875) as a married woman while they lived in Bristol from 1878, in Oxford from 1883 to 1884, and in Cambridge from 1885 to 1909. They published *The Economics of Industry* jointly in 1879, the extensive paragraphs of which on women's wages are quoted below. During the 1880s, Marshall's papers 'Theories and Facts about Wages' (*Cooperative Wholesale Annual*, 1885: 379–88) and his 1887 'A Fair Rate of Wages' failed to mention women's issues in wage determination.

4 Marshall therefore gave little recognition to Mill's position on female comparative advantage in skill. See Mill 1865: 179.

5 This passage dates from Marshall 1910: 694.

6 This passage dates from the fifth edition (Marshall 1907a: 715, n1).

7 This passage closely resembles the discussion presented by Mill (1865: 242–3). In his second *Beehive* article, Marshall had drawn attention to closed shop practices in medicine applied particularly to women (Marshall 1874: 429–30) to which Marshall and Marshall (1879: 176) refer more obliquely.

8 The reference is probably to Francis Galton (1892: 319), which reprints the text of the 1869 first edition. Marshall's paraphrase of Galton's opinion is not completely correct, since Galton's remark on the mothers of great men in fact states

> There is a common opinion that great men have remarkable mothers. No doubt they are largely indebted to maternal influences, but the popular belief ascribes an undue and incredible share to them. I account for the belief, by the fact that great men have usually high moral natures, and are affectionate and reverential, inasmuch as mere brain without heart is insufficient to achieve eminence. Such men are naturally disposed to show extreme filial regard, and to publish the good quality of their mothers, with exaggerated praise.

But cf. Galton (1892: 189, 266–72) on the parental, especially maternal influence on men of science and on divines.

9 This passage dates from Marshall 1895: 594.

10 Cf. Marshall 1920: 718–20, esp. 720, for comments on the general role of women in the improvement of human nature; amending the slightly different, and shorter version of this passage in the first edition (Marshall 1890: 730–1).

11 Alfred Marshall, evidence to the Committee on Higher Education in Wales and Monmouthshire, Cmnd 3047–1, Parliamentary Papers vol. XXXIII, 1881: 767–79, answer to Question 18,276, p. 775, Question 18,304, p. 776.

12 *Ibid*.: answers to Questions 18,305–6, p. 776.

13 In her notes for Walter Scott, to assist his preparation of an obituary of Alfred Marshall for the British Academy, Mary Paley recorded that his greatest love was reserved for his mother, his Aunt Louisa and his sister Mabel Louisa; sister Agnes died in India while looking after the family of her older brother Charles William (preserved in Marshall Archive, Large Brown Box item 24).

14 Labour Commission, Minutes of Evidence, cited in T. G. Spyers, *The Labour Question: An Epitome of the Evidence and Report of the Royal Commission on Labour*, London: Swan Sonnenschein, 1894, 113, and see Nyland and Ramia (1994: 115–16).

15 The greater part of this and the following paragraph are based on this reference.

16 There is little useful secondary evidence on this subject which would have been available to Marshall. Wood (1903: 283–4) supports Marshall's contention that generally speaking since the 1860s women's wages rose relatively faster than wages as a whole. The subsequent study by Dorothea M. Barton (1919: 508–44), provides no data on women's wage growth relative to that of men, while in addition, much of her data is coloured by the abnormal influences of the First World War on women's relative pay (Groenewegen 1994: 9–11).

17 Royal Commission on Labour, *Fifth and Final Report*, Cmnd 7421, June 1894: 93–4, 107–9. Some of them were criticised by Clara Collet (1898b; and see below Chapter 23).

18 This, and the following three paragraphs devoted to factory visits, draws on Mary Paley Marshall's notes, 'Travels in England', preserved in the Marshall Library, Red Box 1(5).

19 Beatrice Webb's efforts on analysing women's work with her husband in later life are discussed in Nyland and Ramia (1994).

20 Alfred Marshall, 1884 (?) fragment, 'Women and Technical Education', Marshall Library, Box 8(1).

21 Alfred Marshall, 'The Higher Education of Women', Marshall Library, Box 8(2). An exceptional woman in literature in Marshall's scheme of things would have been George Eliot, who was one of Marshall's favourite novelists on the later recollections of Mary Paley Marshall (1947: 20).

22 As Edgeworth's reminiscences cited earlier suggest, in the analogy he drew between Marshall's views on women's degrees and on socialism, the foreseeable future was very long, perhaps the 5,000 years Marshall suggested in the last quoted fragment. Perhaps this is why a fragment (dated 23 February 1923) preserved among his papers devoted to 'Progress and Ideals' and proposing 'A Constitution of Public Well-Being', indicates both men and women drawn from medicine and business as the most desirable membership to constitute its governing body. Because these notes preserve Marshall's reflections on 'utopias', frequently from old age, they illustrate Edgeworth's analogy to perfection.
23 This material had been much changed with respect to its detail but not to its thrust. Cf. Marshall 1890: 307–9; 1898: 326–8.
24 The passage quoted changed substantially in detail but not in its thrust. Cf. Marshall 1890: 256–9; 1898: 280–3.
25 See notes 23 and 24 above, and more generally, Marshall 1961: II, 303–5, 326–7.
26 Details are included in my forthcoming biography of Alfred Marshall [i.e. *A Soaring Eagle: Alfred Marshall, 1842–1924* (Groenewegen 1995: 523–6)].
27 Marshall to Keynes, 18 May 1911, in Keynes Papers File L/M/41, King's College Archives, Cambridge.
28 Marshall to Bateson, 24 and 26 October 1908 (Marshall Archive 1/272–3). On 20 October 1908, Bateson had started a series of advanced lectures for the natural sciences tripos on the subject of genetics (*Cambridge University Reporter*, 10 October 1908, 98), and from the contents of the letters it appears that Marshall, then fresh in retirement, may have attended some of them. Bateson also gave occasional lectures to the Cambridge University community on what he called 'Practical Evolution'. Bateson is thanked in the preface of the third edition of the *Principles*, presumably for correcting some of Marshall's more extravagant remarks on evolution in the previous two editions.
29 There were a large number of such works in Marshall's library, including Galton's major works, often referred to in the *Principles*; Benjamin Kidd's *Social Evolution* and his *Principles of Civilisation*, on both of which Marshall corresponded with the author (Marshall to Kidd, 6 June 1894, 15 May 1895, 14 February 1898, 11 February and 27 May 1902, Cambridge University Library, Add. 8089/M251–6), and which he also quoted in the *Principles*; J. B. Haycroft, *Darwinism and Race Progress*, London: Swann Sonnenschein, 1895 (heavily annoted by Marshall and cited in the *Principles*); Simon N. Patten, *Heredity and Social Progress*, London: Macmillan, 1903; while his correspondence with Kidd refers to technical aspects of the theories on heredity of the German geneticist August Weismann. In addition, his interest in the subject is highlighted by the fact he was willing to give Bateson, a specialist, his personal copy of Richard Louis Dugdale's *'The Jukes': A Study in Crime, Pauperism, Disease and Heredity*, a case study of the influence of family on heredity which made a big impact on Marshall's thinking. See Marshall to Bateson, 24 October 1908 (Marshall Archive 1/272), where he described the book 'as holding as unique a position among family trees in relation to character as that which you showed us yesterday does in regard to height and blindness'.
30 See Marshall to *The Times*, 7 July, 4 and 19 August 1910; the episode is described in some detail by R. Skidelsky (1983: 223–7) and Moggridge (1992: 205–7) [and see Groenewegen 1995: 479–82].
31 Noted above, especially notes 23–5, 28.
32 Marshall's half-dozen letters to *The Times* during the First World War invariably urged moderation of national hatred for Germany. The unpatriotic reputation this gained Marshall with the 'average' Englishman is strikingly illustrated by a letter Bertrand Russell received from a 'John Bull', on 20 September 1915 (Russell 1978: 272).
33 These included the deleterious influence of some trade unions on work practice, productivity and hence British competitiveness; the rise of Germany and the United States and other countries in industrial strength, ineffective business education and so on. Marshall discussed these issues in correspondence (Pigou 1925: 398–402) and in *Industry and Trade* (Marshall 1919).

34 See J. B. Haycroft (1895: ch. VIII, 'Obligations in Parenthood') and cf. Marshall to Benjamin Kidd, 14 February 1898 (Cambridge University Library, Add. 8069/M154) in which, in the context of the future progress for society, he expressed the view that 'if the present drift to new Womanhood should go far, I think stable monogamy may be endangered, but I don't expect it will go far'.
35 Darwin (1871: 944–6) admitted these theories wanted 'scientific precision', a qualification his followers were less careful to recognise.
36 Cf. Galton (1892: 348), where the restoration of high honour to marriage is regarded as one of the essential features of a civilisation designed for 'the improvement of the race'. And cf. Matthews (1990: 29).
37 John Neville Keynes, *Diaries*, entry for 8 April 1890. Keynes heard the story from Henry Sidgwick, who had heard it from Mrs Frances Darwin, a very close friend and confidante of Mrs Mary Marshall, thereby indicating it was probably a source of discord at Balliol Croft, the Marshalls' residence (Cambridge University Library, Add. MSS 7827–7867).

References

Barton, D. M. (1919) 'The Course of Women's Wages', *Journal of the Royal Statistical Society*, 82(4) 508–44.

Becattini, G. (1975) *Invito a una Rilettura di Marshall*, Milan: Isedi.

Collet, Clara E. (1898) 'The Collection and Utilisation of Official Statistics Bearing on the Extent and Effects of the Industrial Employment of Women', *Journal of the Royal Statistical Society*, 62(2) 229–60.

Collette, Christine (1989) *For Labour and for Women: The Women's Labour League, 1906–1918*, Manchester: Manchester University Press.

Darwin, Charles (1871) *The Descent of Man*, 2nd edn, London: John Murray, 1906.

Edgeworth, F. Y. (1925) 'Reminiscences', in A. C. Pigou (ed.) *Memorials of Alfred Marshall*, London: Macmillan, 66–73.

Galton, Francis (1889) *Natural Inheritance*, London: Macmillan.

——(1892) *Hereditary Genius*, London: Macmillan.

Gould, Stephen Jay (1981) *The Mismeasurement of Man*, New York: W. W. Norton.

Groenewegen, P. D. (1994) 'Alfred Marshall and the Labour Commission', *European Journal of the History of Economic Thought*, 1(2) 273–96.

——(1995) *A Soaring Eagle: Alfred Marshall, 1842–1924*, Aldershot and Brookfield: Edward Elgar.

Harcourt, G. C. (1982) 'Joan Robinson', in Prue Kerr (ed.) *The Social Science Imperialists: Selected Essays*, London: Routledge & Kegan Paul.

Haycroft, J. B. (1895) *Darwinism and Race Progress*, London: Swann Sonnenschein.

Le Bon, G. (1870) 'Recherches anatomiques et mathématiques sur les lois des variations du volume du cerveau,' *Revue d'Anthrolpologie*, 2.

Le Play, M. F. (1887) *La Reforme Sociale en France*, 7th edn, Tours: Alfred Mamé.

McGregor, D. H. (1942) 'Marshall and his Book', *Economica*, n.s., 9, 313–24.

McWilliams-Tullberg, Rita (1975) *A Men's University – though of a Mixed Type: Women at Cambridge*, London: Gollancz.

——(1990) 'Alfred Marshall and the "Woman Question" at Cambridge', *Economie Appliquée*, 43(1) 209–30.

——(1991) 'Alfred Marshall and the Male Priesthood of Economics', *Quaderni di storia dell' economia politica*, 9(2–3) 235–68.

——(1992) 'Alfred Marshall's Attitude towards the Economics of Industry', *Journal of the History of Economic Thought*, 14(2) 257–70.

Marshall, Alfred (1873) 'The Future of the Working Classes', in A. C. Pigou (ed.) *Memorials of Alfred Marshall*, London: Macmillan, 1925, 101–18.
——(1874) 'The Province of Political Economy', *Beehive*, May; in R. Harrison, 'Two Early Articles by Alfred Marshall', *Economic Journal*, 1963, June, 422–30.
——(1890) *Principles of Economics*, 1st edn, London: Macmillan.
——(1895) *Principles of Economics*, 3rd edn, London: Macmillan.
——(1898) *Principles of Economics*, 4th edn, London: Macmillan.
——(1907a) *Principles of Economics*, 5th edn, London: Macmillan.
——(1907b) 'Social Possibilities of Economic Chivalry', in A. C. Pigou (ed.) *Memorials of Alfred Marshall*, London: Macmillan, 1925, 323–46.
——(1910) *Principles of Economics*, 6th edn, London; Macmillan.
——(1919) *Industry and Trade*, London: Macmillan.
——(1920) *Principles of Economics*, 8th edn, London: Macmillan.
——(1961) *Principles of Economics*, 9th variorum edn, ed. C. W. Guillebaud, London: Macmillan.
Marshall, Alfred and Marshall, Mary Paley (1879) *The Economics of Industry*, 2nd edn, London: Macmillan, 1881.
Marshall, Mary Paley (1947) *What I Remember*, Cambridge: Cambridge University Press.
Matthew, R. C. O. (1990) 'Marshall and the Labour Market', in J. K. Whitaker (ed.) *Centenary Essays on Alfred Marshall*, Cambridge: Cambridge University Press.
Mill, John Stuart (1865) *Principles of Political Economy*, People's Edition, London: Longmans Green & Co.
Pigou, A. C. (ed.) (1925) *Memorials of Alfred Marshall*, London: Macmillan.
Nyland, Chris and Ramia, Gaby (1994) 'The Webbs and The Rights of Women', in P. D. Groenewegen (ed.) *Feminism and Political Economy in Victorian England*, Aldershot: Edward Elgar, 110–46.
Pujol, Michèle A. (1984) 'Gender and Class in Marshall's Principles of Economics', *Cambridge Journal of Economics*, 8(3) 217–34.
Richards, Evelleen (1983) 'Darwin and the Descent of Women', in D. Ouldroop and I. Langham (eds) *The Wider Domain of Evolutionary Thought*, Dordrecht: Kluwer.
Royal Commission on Labour (1892) *Minutes of Evidence Group B*, vol. II, Cmnd. 6703-V, London: HMSO.
——(1893a) *Minutes of Evidence Group B*, vol III, Cmnd. 6894-VIII, London: HMSO.
——(1893b) *Fourth Report*, Cmnd. 7063, London: HMSO.
——(1894a) *Reports from Commissioners, Inspectors and Others*, XXV, London: HMSO.
——(1894b) *Fifth and Final Report*, Cmnd. 7421, London: HMSO.
Russell, Bertrand (1978) *Autobiography*, London: George Allen & Unwin.
Skidelsky, Robert (1983) *John Maynard Keynes: Hopes Betrayed 1883–1920*, London: Macmillan.
Webb (Potter), B. (1894) 'The Failure of the Labour Commission', *The Nineteenth Century*, 26, July.
——(1938) *My Apprenticeship*, Harmondsworth: Pelican.
Whitaker, John (1977) 'Some Neglected Aspects of Alfred Marshall's Economic and Social Thought', in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, I, 453–86.
Wood, G. H. (1903) 'The Course of Women's Wages during the Nineteenth Century', in B. L. Hutchins and A. Harrison (eds) *A History of Factory Legislation*, London: P. S. King, Appendix.
Wood, J. C. (1982) *Alfred Marshall: Critical Assessments*, London: Croom Helm.

15 The evolutionary economics of Alfred Marshall

An overview

Marshall's saying, 'the Mecca of the economist lies in economic biology', is well known, as is the fact that this gave an evolutionary slant to his economics. This is also captured in the Latin motto which graced the frontispiece of his *Principles* – *natura non facit saltum* – designed to draw attention to the principle of continuity as the underlying 'special character' of the book. Marshall may have derived his fondness for this saying from his youthful studies of the philosophy of Kant or, equally plausible, from the pages of Charles Darwin's *Origin of Species*, a book he likewise studied during this time (see Groenewegen 1995: 130, 411). The evolutionary thrust of Marshall's work is frequently explicit, especially in his *Principles of Economics*, the work for which he is now mainly remembered, and which spread his economic message of the wide-ranging benefits of progress over its eight editions from 1890 to 1920 and its subsequent frequent reprintings.

This chapter intends to trace the development of Marshall's evolutionary economics. It does so in the following way. Its first substantive section examines Marshall's interest in and acquaintance with evolutionary thought, largely acquired during the second half of the 1860s when he turned away from the study of mathematics to the moral sciences of philosophy and psychology and, eventually, economics. It also looks at the impact thereof on his early economics. Subsequent sections then review the evolutionary content of Marshall's economics in two further distinct stages: first, that in the various editions of the *Principles* and associated work; and second, in the work he described as his later volumes, particularly *Industry and Trade*. A final section offers some conclusions on the nature and growth of this important aspect of the Marshallian tradition.

In short, the emphasis of this chapter is on both the preparation for, and the practice of, Marshall's construction of his evolutionary economics. The former is essential because it enables a demonstration of the wide intellectual currents which shaped the mind of this economist during the 1860s and early 1870s and which included, in rich measure, philosophies of history, evolution and progress.

Evolution and Marshall's early economics

Despite Marshall's later claims about the relevance of biological knowledge for the student of economics, his own knowledge of biology was practically non-

existent. This is implicitly confessed in one of his youthful, philosophical papers 'Ye Machine' (Marshall 1869: 127) and in some remarks, recorded by John Neville Keynes after a dinner party in 1877, in which Marshall lamented the time he had wasted at school in learning classics because this could have been much better spent on the study of 'music, drawing, sculpture, a few modern languages, biology and general culture' (cited in Groenewegen 1995: 60). Such admissions notwithstanding, Marshall did spend considerable time studying aspects of evolutionary theory during the 1860s, though never in a formal manner.

It should be noted here, as in any case is widely recognised in the history of ideas, that the general notion of evolution was an exceedingly widely held scientific belief among the intellectual community during the 1860s, and that, in addition, a public acceptance of the principle of evolution was equally widespread. This was of course the decade of Marshall's formative intellectual period, during which he gradually moved to the study of economics after having taken the final examinations of the mathematical tripos (with their emphasis on the physical sciences), from 1865 switching to the moral sciences, including the various branches of philosophy, psychology, the theory of knowledge and associated inquiries.

The sources for evolutionary thinking available to Marshall at this time were manifold. By 1867, Marshall claimed he had worked through Darwin's *Origin of Species*; during this period he had also become fascinated with Herbert Spencer's work, especially his *First Principles* (Groenewegen 1995: 118–26). This not only dealt with certain problems in the theory of knowledge of the type in which Marshall was particularly interested in his formative period as a social scientist; it also presented a theory of evolution as applied to society, in the context of social progress and, something which may have intrigued Marshall even then, aspects of the division of labour and its cumulative effects on industrial organisation. In fact, Spencer's book offered a considerable amount on the importance of industrial organisation, the essentially evolutionary nature of its progress, location and growth, and the importance of that growth and progress for the wider development of society (Spencer 1900: e.g. 289–93, 312–8, 390–3).

There were other, more derivative sources on the importance of evolutionary thought of economic, social and political argument. One of these was the economic textbook *Plutology*, by the Australian academic W. E. Hearn (1864). This was probably one of the first texts to use Darwin's theories to elucidate economic principles (see e.g. La Nauze 1949: 192) and which, at an early stage, became a favoured book for Marshall (see Groenewegen 1988: 2–4, above Chapter 13). Another was the widely read *Physics and Politics* by Walter Bagehot, which likewise brought out important evolutionary relationships in the process by which contemporary societies progressed, and which was among the many books on such subjects that the young Marshall studied with considerable interest.[1]

The impact of these evolutionary writers on Marshall's early economics is not all that easy to detect. For example, there is little direct evidence of such

influence in the material Whitaker (1975) edited as the *Early Economic Writings of Alfred Marshall*. As Denis O'Brien indicates in his introduction to a reprint of *The Economics of Industry* (Marshall and Marshall 1879), the influence of Hearn's *Plutology* is evident in the book even if Hearne is not cited by name (O'Brien 1994: xvii). Parts of its methodological discussion also reveal shades of Spencer's perspectives (e.g. Marshall and Marshall 1879: 314), as do other parts of the book (e.g. page 9 on civilisation and the balance of mental and manual labour). Likewise the chapters on industrial organisation, with their treatment of localisation of industry, and on the division of labour, may have used something of Spencer's treatment of the subject,[2] given the breadth of their social inferences. An example is the manner in which the link is drawn between division of labour and manual dexterity (Marshall and Marshall 1879: 49, n1) and the localisation of industry (52–3).

The picture which is given from this overview of Marshall's acquaintance with biological, evolutionary thought, is that it was not particularly large in these years. This is despite the fact that during the second half of the 1860s, Marshall had worked quite solidly at Darwin's major works, and even more at the philosophy of Herbert Spencer, including the strong, evolutionary contents of his *First Principles* (Groenewegen 1995: 118–26). Knowledge gained from such study was probably reinforced by reading popular secondary sources, such as the books by Hearn, Bagehot and others. It is particularly striking that his knowledge is only marginally reflected in Marshall's early economic writings, an inference reinforced by the very few references to such subjects in his surviving correspondence, and in his complaint to John Neville Keynes about his lack of biological knowledge and its absence from the syllabus, given the over-emphasis on classical studies in his early education. The last is also revealed in his discussion with Benjamin Kidd[3] in correspondence in which, in an almost uncharacteristically candid manner, Marshall confessed an inability to grasp some arguments of Weismann, the eminent zoologist and evolutionary theorist (who first proposed the separation of germ and somatic plasm), in his quarrel with Herbert Spencer, even though Marshall had sought the assistance of William Bateson, a colleague at St John's College, Cambridge, and a pioneer in the study of heredity.

In a reminiscing paper, written in 1896 when he was already well at the top of the economics profession in the United Kingdom, 'The Old Generation of Economists and the New', presented to the members of the Cambridge Economic Club at their inaugural meeting, infatuation with Darwin's 'development of the laws of struggle and survival' was argued by Marshall to have perhaps given 'a greater impetus to the careful and exact study of facts than any other event that has ever occurred' (Marshall 1897: 532). This statement needs to be recalled in the context of the subsequent two sections of this chapter. A letter, almost a decade later, written to the editor of the *Daily Chronicle* in response to the paper's suggestion for a national memorial to Herbert Spencer, called attention to the enormous stimulus Spencer had given to younger Cambridge graduates of the 1860s and early 1870s, and averred that, on the

Continent, 'no one had exercised greater influence among English writers, with the exception of Darwin' (Whitaker 1996: III, 97). Complimentary though this appreciation was, its praise was limited to precisely two ways. Explicitly, the impact was confined to the late 1860s and early 1870s, coinciding with the time of Marshall's own philosophical and methodological investigations. Second, and implicitly, Marshall's own philosophical investigations had expressly criticised any application of evolutionism beyond 'its appropriate, but limited, area, that is, one in which the phenomena studied, are very homogeneous' (Marshall 1867; 1990: 53). In some ways it is therefore not surprising that Marshall used evolutionary doctrine and biological propositions in such a limited way in his early work.

Evolution and the *Principles*

As already indicated, the *Principles of Economics* is Marshall's major repository of biological and evolutionary material. Much of this, however, was confined to a few parts of the book: the preface, and some chapters in Book IV dealing with the organisation of industry (Chapter VIII) and with the correlation of tendencies to increasing and diminishing returns (Chapter XIII). A few references to such matters also occur in the opening three chapters of Book V, which introduce the subject of markets and provide the preliminary exposition of supply and demand. Generally speaking, the setting for this biological and evolutionary content is methodological. This makes it surprising that the explicitly methodological material of the first two books is completely free of biological and evolutionary analogies. It can also be noted by way of introduction that much of this material was included from the first edition of the *Principles*, and was only lightly revised over the seven subsequent editions, and then largely during the preparation of the sixth edition.

The preface makes a number of interesting links between economics and nature, biology and evolution. It does so in the first instance with respect to the problem of time, where nature is said 'to know no absolute partition of time into long periods and short', though such distinctions were claimed to be particularly instructive in economic study, such as, for example, the distinction between rent and interest, or the associated one between fixed and floating capital (Marshall 1961: vii, viii). In the context of the various meanings of continuity discussed at some length in the preface, biological influences (as represented by Spencer's work) are contrasted with the historical and philosophical influences (represented by Hegel's philosophy and history) and notions of mathematical continuity, represented by Augustin Cournot. The first of these, Marshall indicated, were major influences on the substance of his *Principles* (perhaps a bow in the direction of the importance for him of the contents of Book IV for the argument of the *Principles*), whereas Cournot's mathematical reasoning had influenced much of its form, with special reference to issues of mutual causation. However, in the context of the last, Marshall warned the reader that '[n]ature's action is complex: and nothing is gained, in

the long run, by pretending that it is simple and trying to describe it in a series of elementary propositions' (Marshall 1961: ix–x).

The above comes from the preface to the first edition (reproduced in varying degrees in every subsequent edition) – the problems associated with time to which attention was drawn being more fully appreciated and elaborated in an article in the *Economic Journal* (Marshall 1898) not long after revising the text of the fourth edition of the *Principles* for publication. This article provided Marshall's famous remark that 'the Mecca of the economist lies in economic biology rather than in economic dynamics' (Marshall 1961: xiv), which implicitly stressed both the desirability and necessity, as well as the difficulties, of satisfactorily incorporating time into economics, largely because 'biological conceptions' are so much 'more complex' than those borrowed from mechanics. This remark likewise allowed a subtle reintroduction of the distinction between form and substance in the contents of the *Principles*: its substance lay in the material devoted to 'the forces that cause movement', the dynamics described as the 'keynote', while the form was largely mechanical, and often statical, because such material was so much easier to handle. The remainder of the final (or eighth) edition's preface then played on instances of the static/dynamic ('or rather, biological') distinction, in which the actual issues for economic study of progress and improvement were to be handled largely, but not exclusively, by statical methods and assumptions because the book, after all, was only a volume of foundations.

Not surprisingly, therefore, those sections of the *Principles* most concerned with progress retained the greatest emphasis on biological analogies. These were particularly drawn from nature's operations in the practical organisation of higher animals, based on survival of the fittest in the universal struggle for existence, seen as particularly pertinent to the understanding of industrial organisation. This is the case, for example, with the introductory chapter to this subject (Book IV, Chapter VIII), which in its opening paragraphs draws attention to the mutual debts of biology and economics, and the immense role of subdivision in the development of organisms, both physical and social. Moreover, this chapter pays particular tribute to the insights of Darwin into natural selection (Marshall 1961: 240) and to Spencer's (Lamarckian) stress on the strengthening of organs and other faculties from being actively used and exercised, and illustrated with interesting biological examples discussed later. Survival and heredity were explicitly linked to progress in population quality, with special emphasis on the important role for families in this survival process, and for that of eugenics in improving quality and racial purity of the population (Marshall 1961: 242–3, 248–9). This chapter reveals Marshall the social Darwinist in perspectives which he shared with many of his social scientist contemporaries. Of more relevance to his economics, his observations reveal the stress he laid on the time-intensiveness of progress in both the economic and other worlds, and the urgency of his warning, drawn from nature via its interpreters, that *natura non facit saltum*.

Chapter XIII of Book IV presented Marshall's famous (infamous?) 'tree in the forest' analogy, which influenced crucial aspects of the theory of the firm

initially as developed by himself, and subsequently by some of his leading Cambridge followers, including Arthur Pigou and Dennis Robertson. As one of Marshall's most colourful biological analogies, it can be quoted in full:

> But here we may read a lesson from the young trees of the forest as they struggle upwards through the benumbing shade of their older rivals. Many succumb on the way, and a few only survive; those few become stronger with every year, they get a larger share of light and air with every increase of their height, and at last in their turn they tower above their neighbours, and seem as though they would grow on for ever, and for ever become stronger as they grow. But they do not. One tree will last longer in full vigour and attain a greater size than another; but sooner or later age tells on them all. Though the taller ones have a better access to light and air than their rivals, they gradually lose vitality; and one after another they give place to others, which, though of less material strength, have on their side the vigour of youth.
>
> And as with the growth of trees, so was it with the growth of business as a general rule before the great recent development of vast joint-stock companies, which often stagnate, but do not readily die. Now that rule is far from universal, but it still holds in many industries and trades.
>
> Nature still presses on the private business by limiting the length of the life of its original founders, and by limiting even more narrowly that part of their lives in which their faculties retain full vigour. And so, after a while, the guidance of the business falls into the hands of people with less energy and less creative genius, if not with less active interest in its prosperity. If it is turned into a joint-stock company, it may retain the advantages of division of labour, of specialised skills and machinery: it may even increase them by a further increase of its capital; and under favourable conditions it may secure a permanent and prominent place in the work of production. But it is likely to have lost so much of its elasticity and progressive force, that the advantages are no longer exclusively on its side in its competition with younger and smaller rivals.
>
> (Marshall 1961: 315–16)

In fact, Marshall liked the analogy so much, that it was repeated at the start of Book V (Marshall 1961: 323) and again (Marshall 1961: 367) in the context of substantiating the 'worth' of his notion of the 'representative firm'.

This one major biological flourish from Marshall's pen was designed, once again, to indicate the limitations of statical analysis for economists, particularly in the context of the theory of the firm and, more generally, for the theory of value as a whole. The implications of this methodological stance are particularly plain to see in the discussion of internal and external economies, which continually blends statical with dynamic considerations (much to the annoyance of Stigler [1941: esp. 71–2]). Biology, therefore, served Marshall as a reminder of important truths, essential to a realistic portrayal of economic

behaviour, and which could never be attained through the more simple, statical analysis. Such matters related to the importance of change, technological developments, evolution in behaviour and learning by doing, which for Marshall were all parts and essential ingredients in a realistic presentation of the economics of business enterprise.

A specific aspect of the need for such realism in the construction of diagrams illustrative of the theory of the firm can be found in Appendix H (Marshall 1961: 807–8). There Marshall drew attention to an illegitimate consequence of seeing supply and demand adjustments as perfectly reversible in time. The relevant material can be quoted:

> It must however be admitted that this theory is out of touch with real conditions of life, in so far as it assumes that, if the normal production of a commodity increases and afterwards again diminishes to its old amount, the demand price and the supply price will return to their old positions for that amount.

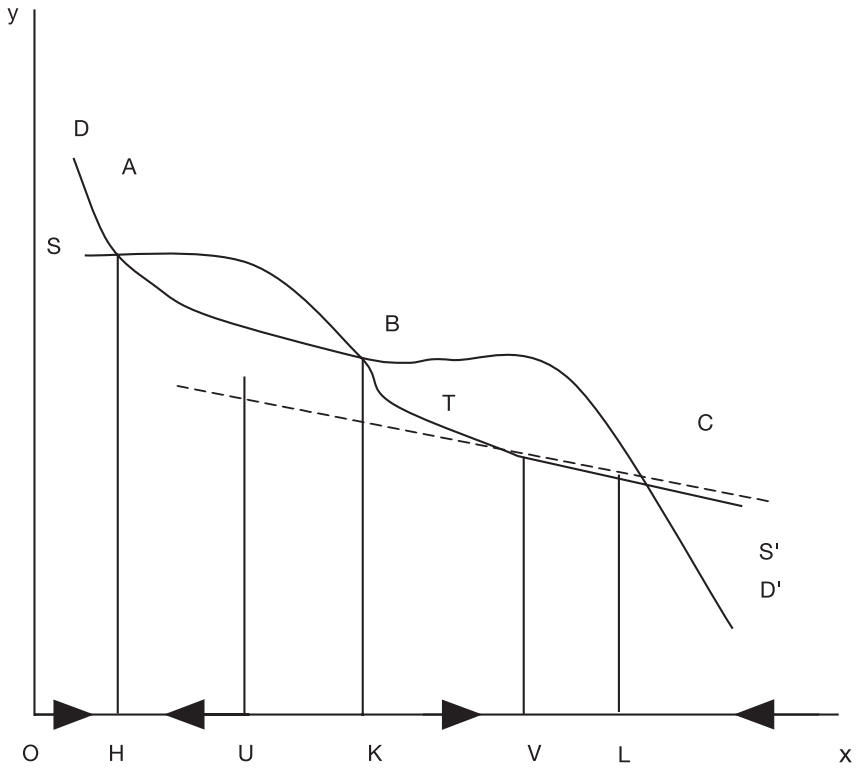

Figure 15.1

> Whether a commodity conforms to the law of diminishing or increasing return, the increase in consumption arising from a fall in price is gradual: and, further habits which have once grown up around the use of a commodity while its price is low, are not quickly abandoned when its price rises again. If therefore after the supply has gradually increased, some of the sources from which it is derived should be closed, or any other cause should occur to make the commodity scarce, many consumers will be reluctant to depart from their wonted ways. For instance, the price of cotton during the American war was higher than it would have been if the previous low price had not brought cotton into common use to meet wants, many of which had been created by the low price. Thus then the list of demand prices which holds for the forward movement of the production of a commodity will seldom hold for the return movement, but will in general require to be raised.[4]
>
> Again, the list of supply prices may have fairly represented the actual fall in the supply price of the thing that takes place when the supply is being increased; but if the demand should fall off, or if for any other reason, the supply should have to be diminished, the supply price would not move back by the course by which it had come, but would take a lower course. The list of supply prices which had held for the forward movement would not hold for the backward movement, but would have to be replaced by a lower schedule. This is true whether the production of the commodity obeys the law of diminishing or increasing return; but it is of special importance in the latter case, because the fact that the production does obey this law, proves that its increase leads to great improvements in organisation.
>
> For, when any casual disturbance has caused a great increase in the production of any commodity, and thereby has led to the introduction of extensive economies, these economies are not readily lost. Developments of mechanical appliances, of division of labour and of the means of transport, and improved organisation of all kinds, when they have been once obtained are not readily abandoned. Capital and labour, when they have once been devoted to any particular industry, may indeed become depreciated in value, if there is a falling off in the demand for the wares which they produce: but they cannot quickly be converted to other occupations; and their competition will for a time prevent a diminished demand from causing an increased price of the wares.[5]

The methodological import of this aspect of Appendix H was grasped particularly vigorously by Joan Robinson who, in her lecture delivered at Oxford by a Cambridge economist, emphasised the one-way nature of time, ever forward, never backward: 'in time, the distance between today and tomorrow is twenty-four hours forward, and the distance between today and yesterday is eternity backwards. There is a lot about this written in verse' (Robinson 1953: 12). In this context, Marshall is singled out for some praise: 'The one who understood it thoroughly well was Marshall. This is not a learned lecture. I will only refer

you to Appendix H in his *Principles*. Read it over again, and you will see how right I am' (Robinson 1953: 13).

Marshall, as has already been argued, was too wily to be caught by the assumption of reversible time which so often is implicitly assumed in 'mechanical economics'. He was all too well aware from his appreciation of nature that time was irreversible; the past can only be painfully undone, whereas everything in the future is still open. This aspect fills the *Principles of Economics*, guiding its theories of production, distribution and exchange, at many stages of the argument.

Evolution and the later works

Biological and evolutionary material is less frequently encountered in Marshall's second major book, *Industry and Trade*. Yet, in a manner quite similar to the *Principles*, evolutionary and biological perspectives guide the method of the work, as is made clear in much of the methodological material included in its opening sections. Section 2 of the opening chapter (Marshall 1919, 1920: 5–7) thus recalls the gist of the motto of the *Principles – natura non facit saltum*. A few pages later, the phrase 'economic evolution' is used to describe the gradual growth in capital intensity of production and its consequences in terms of the 'diminished … strain thrown on human muscles' (Marshall 1919, 1920: 19). 'Economic evolution' is in fact the term used on other occasions in the book to describe the development theme underlying the industrial economic history which features so strongly in much of its contents.

In this context, and also at a later stage, Marshall drew attention to the relevant findings of biology. For example, when discussing the growth of the 'business point of view' (Marshall 1919, 1920: 163), Marshall reminded his readers that biology had been

> discovering numerous ways in which inheritance and natural selection – supplemented by the imitation of successful actions of parents and other older individuals – have enabled even low grade animals so to adjust their structure and their operations to their environment that they may be able to utilise it for their own benefit with ever increasing ease, efficiency and certainty.[6]

However, in the methodological appendix, Marshall indicated that in the biological sciences, 'the area over which certainty extends is relatively very small', even though in the social sciences, including economics, it is even smaller (Marshall 1919, 1920: 673).

Overall, the tone of Marshall's application of biology and evolutionary doctrine to economics seems somewhat more cautious in *Industry and Trade* than in the *Principles*. Yet such analogies were still clearly seen as relevant, as can be illustrated by a rather long set of remarks in which Marshall was critical of socialist doctrines and particularly of the view of human nature espoused

therein (notwithstanding some sympathy with these doctrines in earlier writings). These can be quoted extensively, again because they demonstrate this rather cautious tone, which, with respect to the conclusions, is explicitly seen in the final sentences.

> Darwin's 'law of the survival of the fittest' is often misunderstood; nature being supposed to secure, through competition, that those shall survive who are fittest to benefit the world. But the law really is that those races are most likely to survive, who are best fitted to thrive in their environment: that is, to turn to their own account those opportunities which the world offers to them. A race of wolves that has well organised plans for hunting in packs is likely to survive and spread; because those plans enable it to catch its prey, not because they could confer a benefit on the world.
>
> The common opinion is, however, not as wholly false in substance as it is in form. For almost every increase in power, which any race of men has acquired, can be traced to some social qualities which have enabled that race to overcome the difficulties that lie in the way of obtaining the necessaries and comforts of life; or to overcome its human enemies, or both. Success in war may indeed be partly due to ferocity of character. But, though it could perhaps not have been predicted *a priori*, the social qualities, habits and institutions of a conquering race have in the past generally been of a stronger fibre than those of the conquered. The temper which enables wolves to maintain the discipline of the pack, has in it something that is noble; and the world has in fact gained a good deal from those qualities which have enabled the dog, a domesticated wolf, to take a high rank among living creatures. But man is not bound to follow the slow steps by which the race of wolves has passed through disciplined ferocity to higher things.
>
> Again, by aid of 'natural selection' certain insects, and flowers from which they gather honey, mutually modify one another, till the insects ensure themselves an abundance of food by the untiring efficiency with which they fertilise the flowers. And in like manner, while it is true that those institutions tend to survive which have the greatest faculty for utilising the environment in developing their own strength; it is also true that, in so far as they in return benefit the environment, they strengthen the foundations of their own strength, and thereby increase their chance of surviving and prospering. On this account then we may admit that the mere existence of broad tendencies towards combinations of semi-monopolistic scope, affords some reason for thinking that these tendencies make for the public good. But it is only a *prima facie* reason, and not a very strong one.
>
> (Marshall 1919, 1920: 175–6)

Given the acknowledgement of the relevance of *natura non facit saltum* in matters relating to industry and trade, it is perhaps interesting to draw attention to a seeming negation of this 'law of nature' in the context of railway technology,

with respect to capacity increases, by adding to the number of lines. If it is decided, Marshall says, 'to have two lines instead of one, or three or four instead of two … the increase in expenses *makes some great jumps*' (Marshall 1919, 1920: 458). However, the reader is not explicitly alerted to the fact that this aspect of lumpiness in investment somewhat contradicts the maxim mentioned in the opening pages as 'especially applicable to economic developments'.

Although lip service to the motto of the *Principles* – 'economic evolution is gradual and continuous on each of its numberless routes' – is paid in the preface to Marshall's final volume, *Money, Credit and Commerce* (Marshall 1923: v), that book is otherwise not replete with biological or evolutionary content. The opposite is in fact the case. Apart from a reference to Smith's inadequate allowance for 'natural selection' in his discussion of wage equalisation (Marshall 1923: 5) and a reference (Marshall 1923: 107) to the relevance to economics of the methods of Darwin, as well as those of Bacon and Newton, biology and evolution are absent from the text of this final volume. Perhaps its relevance was less to the world of banking and trade, or, perhaps more pertinent, the manner in which this book was written relied far less on its author's skills of constant revision.

Time, change and the biological analogy

Biology, and evolutionary theory, as was pointed out at the end of the material on the *Principles* in the third section above, served Marshall as a reminder of a number of important truths, which clearly constrained, though did not totally destroy, the value to be attached to more mechanical, statical analysis. A crucial matter here was the notion of time, a strictly one-way phenomenon for realistic economics, and one which entered nearly every feature of economic life, since virtually all economic activity, from the most trivial act of consumption upwards, involved the passage of time. Awareness of this elementary fact, and a willingness to act on it in his economic analysis, is one of the great services Marshall rendered to economic analysis. It was one, as already indicated, which Joan Robinson increasingly appreciated after her initial wrong turning in her *Economics of Imperfect Competition* of 1933.

Time is not only associated with difficulties. With time also come opportunities for change, and with change the possibilities for progress and improvement. Hence evolutionary theory which, for Marshall, imparting to animals the actualities of change and adaptation over the long course of their history in the form of modification of some of their organs through use, emphasised one such avenue for improvement which greatly impressed him. An example he used in the early editions of the *Principles* included the Lamarckian story of the long neck of the giraffe. Subsequent editions used the biologically safer examples of the development of webbed feet in water birds. The relevant passages are as follows, and are quoted in full to illustrate the pitfalls in the use of such illustrations for persons not adept in the mysteries of biological science:

If members of any species of bird begin to adopt aquatic habits, every increase in the webs between the toes – whether coming about gradually by the operation of natural selection, or suddenly as a sport, – will cause them to find their advantage more in aquatic life, and will make their chance of leaving offspring depend more on the increase of the web. So that, if $f(t)$ be the average area of the web at time t, then the rate of increase of the web increases (within certain limits) with every increase in the web, and therefore $f''(t)$ is positive. Now we know by Taylor's Theorem that

$$f(t+h) = f(t) + hf'(t) + \frac{h^2}{1.2} f''(t+\theta h);$$

and if h be large, so that h^2 is very large, then $f(t+h)$ will be much greater than $f(t)$ even though $f'(t)$ be small and $f''(t)$ is never large. There is more than a superficial connection between the advance made by the applications of the differential calculus to physics at the end of the eighteenth century and the beginning of the nineteenth, and the rise of the theory of evolution. In sociology as well as in biology we are learning to watch the accumulated effects of forces which, though weak at first, get greater strength from the growth of their own effects; and the universal form, of which every such fact is a special embodiment, is Taylor's Theorem; or, if the action of more than one cause at a time is to be taken account of, the corresponding expression of a function of several variables. This conclusion will remain valid even if further investigation confirms the suggestion, made by some Mendelians, that gradual changes in the race are originated by large divergences of individuals from the prevailing type. For economics is a study of mankind, of particular nations, of particular social strata; and it is only indirectly concerned with the lives of men of exceptional genius or exceptional wickedness and violence.

(Marshall 1961: I, 843–4)

The giraffe whose long neck enables it to survive by feeding on the shoots of trees when the grass is dried up, may possibly lengthen its neck further by constantly stretching it, and thus further increase its power of surviving; but this effect is not purposely sought. Again, the tendency for all peculiarities of this sort to increase their rate of growth as time goes on, within certain limits, is allowed to work itself out unopposed (unless by sexual selection) in the animal kingdom. The longer, within certain limits, a giraffe's neck is, and the more exclusively he feed on the shoots of trees, the more will his chance of survival depend on the length of his neck; and the greater will be the force which the struggle for survival will exert in tending to accelerate that growth (see Note XI in the Mathematical Appendix).

(Marshall 1961: II, 326)

Nature, for Marshall, and hence 'fact' revealed by biological and evolutionary study, had a further important role to play in the aid it gave to the elucidation of sound economic methods. In the first place, the complexity of nature is fully reflected in the complexity of the details in most actions in human life, therefore including economic actions. Hence economics cannot be an easy subject, and those resolved to make it easy need to be characterised as fools. This was particularly the case in what Marshall identified with the substance of economics, much of which he presented in the rich material on production and development in Book IV of the *Principles*, and from where, as shown previously, most of the important biological material originates.

Unfortunately, the Mecca which defined the relationship, so strikingly necessary for Alfred Marshall, between the economist and economic biology – as identifiable from its appearances in Marshall's writings – remains a somewhat wide and ill defined entity. The usefulness of that relationship needs continual testing in the practice of the economist in trying to understand economic reality. The extent to which this was caused by Marshall's own lack of biological knowledge, as illustrated here in various ways, is by no means clear.

Notes

1 Other books of this genre which Marshall appears to have studied and which in any case formed part of his library, together with various titles by Herbert Spencer, were Haycroft (1895) and Kidd (1898).

2 See Spencer (1900: 289–93, 312–8, and, on homogeneity in evolution, 308–12). Passages such as these may have influenced the nature of Marshall's inductions in the 1870s, and the search for specific types of phenomena during these fact-finding tours in Great Britain and Europe. The last are examined in some detail in Groenewegen (1995: ch. 7, esp. 208–14).

3 Alfred Marshall to Benjamin Kidd, 6 June 1894 (in Whitaker 1996: II, 114–15) and see Groenewegen (1995: 482–4), which summarises Marshall's correspondence with Bateson (not included in Whitaker 1996). It mentions his Freudian slip therein, revelatory of Marshall's inferiority complex with respect to eminent biologists such as Bateson.

4 That is, for any backward movement of the amount offered for sale, the left end of the demand curve would probably need to be raised in order to make it represent the new conditions of demand.

5 For instance, the shape of the supply curve in the diagram above implies that if the ware in question were produced on the scale *OV* annually, the economies introduced into its production would be so extensive as to enable it to be sold as a price *TV*. If these economies were once effected, the shape of the curve *SS'* would probably cease to represent accurately the circumstances of supply. The expenses of production, for instance, of an amount *OU* would no longer be much greater proportionately than those of an amount OV. Thus in order that the curve might again represent the circumstances of supply it would be necessary to draw it lower down, as the dotted curve in the figure.

6 A long footnote warns of the difficulties in this context of distinguishing between inherited characteristics and those acquired from their environment. It can be reproduced in full since it provides a relatively concise example of Marshall's use of this sort of material:

> This remark does not assume that acquired faculties are inherited from parents by children at their birth: it is sufficient for the argument that children automatically imitate the actions of those by whom they are surrounded, and are especially sensitive to suggestions from the examples of mother and father: while acquired skill and faculty in small matters, as well as in large, pass from parents to children by definite instruction. But a protest may be permissible against the pretensions of some exponents of Mendelian doctrine that arithmetical averages of observations of inheritance of mice and vegetables afford conclusive proof that the characters which children bring into the world with them, are incapable of being affected by the past mode of life of their parents. Mendelians do not claim to know what causes originate differences between elementary germs: it seems to be certain that changes in the mental and moral habits of a human being are reflected in his face: and Mendelian arithmetic has little direct bearing on the question whether the nutrition supplied to germs in the body of a person excessively addicted to drink or other sensual indulgences may not result in the birth of a child with less firm character than it would have had, if the parent had lived soberly and chastely. Some Mendelians concede that it does: and the gradual development of trustworthy statistics of inherited mental and moral characters may ultimately lead to further admissions in the same direction.
>
> (Marshall 1919, 1920: 163–4, n1).

References

Groenewegen, P. D. (1988) 'Alfred Marshall and Australian Economics', *HETSA Bulletin no. 9*, winter, 1–15 [above, Chapter 13].

——(1995) *A Soaring Eagle: Alfred Marshall, 1842–1924*, Aldershot and Brookfield: Edward Elgar.

Haycroft, J. B. (1895) *Darwinism and Race Progress*, London: C. Kegan Paul.

Kidd, B. (1898) *Social Evolution*, London: Macmillan.

La Nauze, J. A. (1972) 'Hearn, William Edward (1826–1888)', *Australian Dictionary of Biography*, vol. 4, 1851–1890 (D–J) Melbourne: Melbourne University Press, 370–2.

Marshall, A. (1867) 'The Law of Parcimony', in T. Raffaelli (ed.) *The Early Philosophical Writings of Alfred Marshall*, Firenze Marshallian Studies no. 6, Florence: Università Degli Studi di Firenze (1990) 47–56.

——(1898) 'Distribution and exchange', *Economic Journal*, 8(1) 37–59.

——(1919, 1920) *Industry and Trade*, 3rd edn, London: Macmillan.

——(1923) *Money, Credit and Commerce*, London: Macmillan.

——(1961) *Principles of Economics*, variorum edition edited by C. W. Guillebaud, London: Macmillan for the Royal Economic Society.

——(1997) *Collected Essays, 1872–1916*, ed. P. D. Groenewegen, Tokyo: Kyokuto Shoten Limited and Bristol: Overstone Press.

Marshall, A. and Marshall, M. P. (1879) *The Economics of Industry*, London: Macmillan.

O'Brien, D. (1994) *Introduction to Marshall, Alfred and M. P. (1879)*, London: Thoemmes Press.

Robinson, J. (1953) *On Re-reading Marx*, Cambridge: Students Bookshop.

Spencer, H. (1900) *First Principles*, 6th edn, London: Williams and Norgate.

Stigler, G. J. (1941) *Production and Distribution Theories: The Formative Period*, New York: Macmillan.

Whitaker, J. K. (1975) *Early Writings of Alfred Marshall*, London: Macmillan.

——(1996) *The Correspondence of Alfred Marshall*, London: Macmillan for the Royal Economic Society.

16 Marshall on taxation

Taxation was a subject which occupied Marshall throughout his active life as an economist, though he never wrote a general treatise on taxation, and failed to complete the segment on tax foreshadowed for Book X of Volume 2 of the *Principles*. The importance he attached to taxation is reflected in his teaching at Cambridge, Bristol and Oxford, which invariably devoted lectures to this subject. Unfortunately, few of these lecture notes are extant, and much of the 'oral tradition' on Marshall's tax views has been lost for posterity (an exception is reproduced in Whitaker 1975: vol. 2, 379–85).

However, some of that 'oral tradition' did get into Marshall's published work. Interesting fragments on taxation dating back to the first five years of his economic studies are preserved among the Marshall papers and collected in his early writings (*ibid*.: 279–80, 285–302). Some of these fragments were used in the preparation of the *Principles*. Marshall published two specific pieces on taxation. His 'Memorandum on the Classification and Incidence of Imperial and Local Taxation', delivered in 1897, was subsequently published in 1899 as part of the Royal Commission on Local Taxation's *Report*, and reprinted in Marshall's *Official Papers* (Marshall 1926). Much of this went into the *Principles* from the fifth edition onwards. Marshall's views on national taxation for post-war reconstruction were published during World War I (Marshall 1917, reprinted in part in Pigou 1925: 347–52). Marshall's *Principles* includes additional material on taxation to that already mentioned, as does, to a lesser extent, the subsequent *Industry and Trade* (Marshall 1923b [1919]). Finally, some interesting tax views are preserved in Marshall's correspondence as edited by Pigou (1925).

In contrast to much of Marshall's economics, his views on taxation have received little attention by way of systematic treatment. The four volumes of critical assessments of Marshall (Wood 1982) do not contain a single paper devoted to his taxation economics. Reisman's book (1987: 170–82) is a useful exception; Whitaker (1987: 354, 359) contains brief observations on Marshall's analytical contributions to tax theory as does Musgrave's famous text and brief, doctrinal public finance history (1959: esp. 137, 141, 162, 287; 1987: 26, 39). During the 'age of Marshall' from 1890 to 1920, the journal literature took his views on taxation into account (examples include Cassel 1901: 485; Sanger

1901: 327, 331; Bickerdicke 1902; Wedgewood 1912: 394), though to a lesser extent than would have been expected. His cautious support for taxing decreasing returns industries in order to subsidise industries subject to increasing returns assisted in sparking the famous cost controversies of the 1920s. Ultimately, much of Marshall's taxation economics was transmitted to a wider audience via its elaboration by Pigou (1912: part IV); and subsequently Pigou (1928) in a manner Marshall himself did not always favour.

This paper examines Marshall's taxation economics, by placing the tax views of his *Principles* in the context of his other available tax writings. This seems the best way to link Marshall on taxation with the publication centenary of his *Principles* commemorated by this collection of essays. In addition, it gives recognition to what is an undeservedly neglected aspect of his work.

The argument is divided as follows. First, Marshall's general views on tax principles are examined, including those on optimal taxation. Second, Marshall's views on the relative merits of particular forms of taxes are discussed. Third, his theory of tax incidence is reviewed. By way of background, the British tax system for 1870–1920 is first briefly surveyed. The paper ignores Marshall's detailed analysis of taxes on imports and exports, a topic to which he devoted much space in later books (Marshall 1917: 329–45; 1923: Book III, chs VIII–XI) and in earlier defences of free trade (Marshall 1926 [1903], cf. the manuscript on foreign trade in Whitaker 1975: vol. 2, especially ch. III, §§3.3, 5.2). A final section draws some conclusions.

I

During the greater part of Marshall's lifetime, the British tax system consisted of relatively few taxes and stayed fairly stable until the problem of World War I finance induced significant changes. Broad details of the British revenue system from 1870 to 1920 are summarised in Table 16.1. The first and most important taxes were customs and excise duties, but their relative revenue importance gradually declined from 1870 onwards. The exigencies of World War I finance speeded this gradual process, and by 1920 they raised less revenue than income tax. Even by 1870, customs and excise duties had already been effectively reduced to the function of raising revenue from a number of important consumption goods. Apart from alcoholic beverages and tobacco products, these included coffee, tea, sugar, cocoa, dried fruit, playing cards and, from 1909–19, motor spirits. At the start of the twentieth century, demands for increasing their protective use became more fervent, particularly with Chamberlain's 1903 pronouncements which Marshall (1903) strongly criticised.

Next in importance as tax revenue sources, and rising to dominance during the final years (from 1917) of World War I, were property and income tax. Initially imposed in England from 1798 to 1816 as a special war tax, income tax was reintroduced as a peace tax (to finance fiscal reforms in commodity taxation) from 1842. Rates rarely exceeded 5 per cent, and averaged 2.5 per cent for much of the nineteenth century. Generous tax thresholds excluded

Table 16.1 United Kingdom: principal government revenue items 1870–1920, including local rates

	Customs and excise		*Stamp duties*		*Land and assessed taxes*		*Property and income tax*		*Death duties*		*Local rates*[a]	
	£m	%	£m	%	£m	%	£m	%	£m	%	£m	%
1870	43.3	58.8	4.0	5.4	4.5	6.1	10.0	13.6	4.8	6.5	17.0[b]	23.1
1880	44.6	60.8	4.2	5.7	2.7	3.7	9.2	12.6	6.2	8.5	22.5	30.1
1890	47.6	50.3	5.0	5.3	3.0	3.2	12.8	13.5	9.1	9.6	27.7	29.3
1900	61.4	47.3	8.5	6.5	2.5	1.9	18.8	14.5	18.5	14.3	40.7	31.3
1910	61.3	46.5	8.1	6.1	0.7	0.5	13.3	10.1	21.8	16.6	63.3	48.1
1920	283.1	21.1	22.6	1.7	2.6	0.2	316.9[c]	23.7	40.9	3.1	105.6	7.9

Source: Calculated from B. R. Mitchell, *Abstract of British Historical Statistics*, Cambridge: Cambridge University Press, 1962, 393–5, local rates 414–15.

Notes:

[a] Local rates, a tax levied by local government, were recorded separately from central government revenue. The percentage column indicates the relative size of rate revenue in terms of current imperial (national) revenue. It should also be noted that these local rate data cover England and Wales only.

[b] Not given in source, because unavailable – recorded here as mid-point between 1868 and 1871 collections.

[c] Surtax in 1920 contributed a further £42.2 million making a total percentage contribution of 26.8 to gross income of the government.

most ordinary wage and salary earners from income tax liability. Its sub-classification of income into five schedules covered owners of land, including houses (schedule A), farmers, including owners in occupation (schedule B), fund holders in the domestic debt (schedule C), profits and professional and other gains, including interest on overseas government debt and company income (schedule D) and income from public office including state and municipal enterprises (schedule E). This explains why it was known as income and property tax. Progressive income tax rates were not introduced until 1909 with Lloyd George's 'People's Budget'. This imposed a sur- or super-tax on what were considered to be very high incomes, something of which Marshall later strongly approved (Marshall 1917: 519–21).

Death duties were the third most important group of taxes. Prior to 1870, these were classified as stamp duties; subsequent reforms enabled their separate listing. In 1894, Britain's first application of the principle of graduation was in estate duty: initial rates rose in smooth steps from 1 per cent (for estates between £100 and £500) to a maximum of 8 per cent on estates in excess of £1 million. Up until World War I, death duties contributed a significant proportion of tax revenue, occasionally exceeding income tax collections in importance. However, after the war, their importance gradually declined.

Stamp duties were also a significant source of revenue during Marshall's lifetime. Most stamp revenue was raised from duties on deeds and other instruments of property transfer, receipts, and bills of exchange and promissory notes. Financing the war reduced the importance of these taxes for revenue purposes, whose use in any case was strongly condemned (cf. Bastable 1895: 541). The traditional land tax introduced at the end of the seventeenth century had largely been redeemed during Marshall's lifetime (for details see Hook 1905). Land value was taxed under schedule A of the income tax by way of rent. It was likewise taxed on transfer at death, and, particularly important in the context of Marshall's view on taxation, it was taxed together with improvements, by the local rate. A land development tax was introduced in 1909, and accounts for most of the revenue listed under land tax after that date. Although included in Table 16.1, local rates were generally listed separately from imperial (or national) taxation. Table 16.1 shows their rising importance as a tax from the 1890s.

This growth was particularly strong during the first decade of the twentieth century, and may explain why Marshall incorporated the lengthy treatment he had devoted to the subject in his submission to the Royal Commission on Local Taxation (Marshall 1926 [1897]) with the pages of the 1907 fifth edition of the *Principles* (Marshall 1961: vol. 2, 798). Varying from a third to a half of central government revenue, the incidence of rates had become a pressing problem, deserving detailed treatment in a text on economics. The local rate base was the annual rental value of the real property, levied on the occupier. This made its base similar to the inhabited house duty insofar as domestic residential rates were concerned. This latter tax, in its modern form (as compared to seventeenth-century usage), dated back to 1851, and climbed from £1.5 million to £3 million over the half-century ending 1920.

In spite of the general stability of British taxation during the greater part of Marshall's lifetime, some substantial change did occur. The adoption of graduated rate scales for estate duty in 1894, and subsequently for income tax, was one such change; the growing burden of property taxation in the form of local rates and estate duties was another. The predominance of commodity taxation ended during World War I, to be replaced by that of income tax. The potential for growth in tax revenue which an emergency such as war could generate was also demonstrated, thereby shattering traditional beliefs in normal tax burdens in terms of national output. Marshall's writings on taxation comment on many of these changes.

II

In his lectures (see Whitaker 1975: vol. 2, 382), Marshall invariably referred favourably to Smith's famous four canons of taxation, as he did indeed elsewhere in his early writings (*ibid.*: 71–2, 82). He was also familiar with these Smithian principles as elaborated by McCulloch (1852: 16–39) and John Stuart Mill (1848: Book V, ch. II), the latter used as text for his public finance lectures until the availability in the 1890s of more specialised texts (Bastable 1892; Plehn 1896). More modern expressions of tax criteria in terms of equity, efficiency and simplicity, were also known to Marshall. He explicitly discussed the first, and was clearly fully aware of the importance of the other two. In particular, Marshall recognised the interdependence of such tax criteria. For example, Marshall argued that *equity* in taxation was most advanced where

> taxes favoured the development of the energies and inventiveness of the people; which have hindered them the least in the selection of those routes for the satisfaction of their wants; which … have given a preference to taxes which were productive and elastic, in proportion to the army of officials needed to levy them; which have avoided vexatious meddlings, and which have been most definite and certain, and free from surprises and opportunities of corruption.
>
> (Marshall 1926 [1897]: 339)

The one explicit reference to tax equity in the *Principles* (Marshall 1920: 799–800) derived from the fuller treatment of the subject in his 'Memorandum' for the Royal Commission on Local Taxation (Marshall 1926 [1897]: 336–9). This defined equity in terms of the now generally accepted views on vertical equity, but modified them by reference to what Marshall called 'obligations of duty'. This qualification was particularly important in connection with taxes which Marshall described as 'remunerative' or 'beneficial'. These were taxes where benefiting property owners should pay according to the benefit received, for example, a tax to defray the expenses of drainage. Benefiting property owners could then be simply assessed on the joint-stock principle of tax distribution, that is, 'on their proportional share in the common venture'. By

contrast, 'onerous' taxes, or those imposed to finance more general public responsibilities, required different rules for an equitable distribution. They were to be apportioned, not in proportion to net income, but in such a way 'that the poorer classes should contribute a smaller percentage of their revenues than the middle classes; and these, again, a smaller percentage than the richer classes' (*ibid.*: 337). Where more than one onerous tax was used, their burden should be assessed on aggregate to see that it conformed to this rule; separate examination of the distribution of tax burden was not appropriate. Marshall concluded that net income was therefore the best tax base from the equity point of view. However, this conclusion applied only to 'onerous' taxation, and was modified by the efficiency losses generated from net income taxation which Marshall ascribed to its detrimental treatment of savings. Marshall saw fully equitable taxation as unattainable.

The notion of graduated taxation as a means of enhancing public well-being had been defended in the *Principles* from the fifth edition (Marshall 1961: vol. 1, 719), but as a principle of taxation it had been recognised from the third edition of the *Principles* in a note on Bernoulli's law of declining marginal utility of money income (*ibid.*: vol. 1, 135fn; vol. 2, 266). Marshall's earlier lecture notes defended non-proportional taxation on strict Millian-Benthamite lines. These emphasised a need to exempt 'necessary income' and supported the proposition that temporary income from personal exertion should be taxed less heavily than more permanent property income[1] (in Whitaker 1975: vol. 2, 383–4). Marshall's strongest support for graduated taxation was given in his contribution on post-war tax policy. There he argued, that after exemptions of 'necessary income', income tax shares 'must be graduated very steeply' (Marshall 1917: 319).[2] In that context, he confirmed his 1897 opinion that only income and property taxes could be graduated. This conformed to the by then prevailing Treasury practice, on which he commented favourably in 1907 (in Pigou 1925: 327–8). In private he appears to have been more pessimistic about the likely effects of taxation on income distribution, as he wrote on 24 January 1900 to Bishop Westcott (*ibid.*: 386).

A final practical comment by Marshall on equity concerned inequitable consequences from using specific instead of *ad valorem* rates in excise duties. This induced inverse graduation in commodity taxation, not only because expenditure on excisable commodities was a larger proportion of income for the poorer classes in the community, but because 'the finer and costlier sorts are … taxed at nearly the same rate per pound or gallon as the cheaper sorts' (Marshall 1917: 327–8). Wine, tea, coffee and tobacco products like cigars were commodities to which this applied. Post-war tax reform was an opportunity for redressing this inequity, Marshall suggested (*ibid.*: 328), but entailed a cost in 'opening the door to fraud and contention'. Equity objectives were constrained by efficiency, administrative and compliance costs,[3] a further example of Marshall's stress on the interdependence of tax criteria.

Marshall's discussions of efficiency considerations in taxation rank among his major contributions to economics, but are still inadequately acknowledged in

the literature.[4] An early mathematical note on the influence of taxation includes quite explicit reference to measuring the dead-weight welfare loss from an indirect tax by the area of the familiar triangle of lost consumer surplus (in Whitaker 1975: vol. 2, 179–80). In his comments on this paper, Whitaker (*ibid.*: vol. 1, 39; vol. 2, 281), draws attention to the fact that it was written before Dupuit's work had become known in England and that Marshall himself in this context only acknowledged Cournot, von Thünen and Bentham (Marshall 1961: vol. 2, 263).

Marshall subsequently elaborated his argument on the excess burden of commodity taxation. A draft document presenting an 'abstract theory of a General Uniform Tax', dated by Whitaker at 1873 or 1874, not only presents the familiar diagram, but also the condition for minimum excess burden in terms of tax rates and elasticity of demand (Whitaker 1975: vol. 2, 297–9). From this, it was an easy step to argue that 'the fittest subjects for taxation are those luxuries which are almost necessaries. Whatever share of taxation the poor man is to bear is as well levied on his tobacco, alcohol and sugar as on anything else'. Welfare losses from taxation were next raised in his *Pure Theory of Domestic Values* (Marshall 1930 [1879]: 25–32; see also Whitaker 1975: vol. 2, 77–8) and finally in the *Principles of Economics* (Marshall 1961: vol. 1, 467–70) from the first edition onwards. Remarks in the *Principles* (*ibid.*: 467, n1) repeat the view that minimum excess burden depends on elasticity of demand, hence suggesting a rule of taxing necessaries rather than 'comforts'. This conclusion is qualified by a need to take other considerations, particularly ability to pay, into account.[5] The use of the excess burden analysis to establish the superiority of income tax over excise of the 1870s, foreign trade manuscript (Whitaker 1975: vol. 2, 71–2), is not repeated in the *Principles*, perhaps reflecting that Marshall changed his mind on this subject.

In an appended note to the 1873–4 manuscript on the theory of a general uniform tax, Marshall hinted at more substantial difficulties for analysis when it was conducted in terms of variable labour supply. This hint was never developed further. Marshall (1917: 322) argued that 'excessive taxes on large incomes may check energy and enterprise', and that in this way 'the problems of a steeply-graduated income tax run into those of graduated taxes on capital'. More importantly, a tax on income, whether graduated or not, is inimical to saving, because it involves the double taxation of that saving: first as income; second, and fully in the long run, as tax paid on the yield from the assets in which the savings are invested.[6]

Marshall also believed that 'heavy taxes on capital … tend to check its growth and to accelerate its emigration' (*ibid.*: 322). He changed his mind, however, about the extent of this effect, perhaps in response to the growth in capital taxation after Harcourt's graduated estate duty of 1894. Detrimental accumulation effects from all capital taxation had been confidently asserted in lectures of the early 1880s (Whitaker 1975: vol. 2, 381–2), and this assertion was repeated in 1897 where Marshall ascribed the same results to 'all taxes on profits' (Marshall 1926 [1897]: 356–7). An addition to the fifth edition

(Marshall 1961: vol. 1, 713–14; vol. 2, 717) qualified this view. It suggested that diminishing the 'evil of great inequality of wealth' which did 'not sap the springs of free initiative and strength of character, and would not therefore materially check the growth of the national dividend', would be a 'clear social gain'. Perhaps the estate duties England had by then been levying for over a decade were assisting the achievement of this goal. Finally, in response to a request from Lord Reay on his reactions to the 1909 People's Budget, Marshall wrote (12 November 1909) that he had changed his mind on the detrimental effects of death duties:

> Now I think they are on the whole a good method of raising a rather large part of the national revenue; because they do not check accumulation as much as had been expected, and a small check does not seem to me now as great an evil as it did then [i.e. fifteen years ago].
>
> (in Pigou 1925: 463)

By 1917, Marshall was therefore willing to advocate further 'moderate increase' of estate duties as a useful contribution to additional post-war tax revenue requirements, but nevertheless continued to warn that all 'taxes on capital must be handled with caution' (Marshall 1917: 322–3).

Only brief reference needs to be made to Marshall's famous policy of taxing diminishing returns industries and subsidising the output of increasing returns industries with the proceeds. The consequences in theory were increased welfare from enhanced consumer and producer surpluses. However, Marshall was careful to describe this as a 'simple plan' fraught with practical difficulties, to which he generally drew attention (Marshall 1961: vol. 1: 472–3, but cf. Marshall 1923b [1919]: 405, n1, which did not). Given its development in the 1870s, (Marshall 1930 [1879]: ch. II, esp. 32–4), this material was included in the *Principles* from the first edition.

It has already been mentioned that Marshall was well aware of the importance of administrative considerations in taxation. His frequent warnings that theoretical tax principles are difficult to apply is one manifestation of this. Application of proposals like the one mentioned in the previous paragraph, which in theory conferred great economic benefit on the nation even when all administrative costs were fully considered, assumed a great deal about the quality of government. Detailed knowledge of the operation of markets, plus an ability to predict accurately cost changes from changes in output, were crucial pre-conditions to successful implementation; probity of officials in implementing the measure was another (*ibid.*: 33–4). Marshall was always very conscious of the need to minimise collection costs, an objective he argued was more easily realised by direct taxation. He likewise worried about excessive compliance costs imposed on taxpayers by any particular tax regime (Marshall 1917: 326). Generally speaking, Marshall did not deal in much detail with these issues, but as implied in earlier references to Marshall's emphasis on the interdependence of tax criteria, he appears to have been fully cognisant of the

limitations which tax administration could place on tax reform. Furthermore, as a firm supporter of Smith's canons, convenience combined with the avoidance of complexity and uncertainty in tax regulation were principles which Marshall would not have ignored when suggesting tax proposals, as his most detailed discussion of this in the 1870s trade manuscript in fact suggests (in Whitaker 1975: vol. 2, 71–84).

III

Aspects of Marshall's views on the tax criteria are further illuminated by his preference ordering of tax instruments. This was explicitly included in his 'Memorandum' to the Royal Commission on Local Taxation, and repeated in his perspective on post-war tax policy twenty years later.

Despite its many deficiencies, Marshall expressed a clear preference for the taxation of net income from the early 1870s (*ibid*.: vol. 2, 81–2, 86), largely for reasons of equity. At one stage in the 1870s, he also defended this preference on excess burden grounds (*ibid*.: vol. 2, 72–3). A reason he initially advanced against income tax was the fact that concern over privacy made it difficult to implement equitably, particularly for the 'trading classes'. The major problem with income taxation arose from the difficulty of exempting saving systematically in order to tax only direct consumption expenditure. This was the tax system most economists preferred, if only it were practical[7] (*ibid*.: vol. 2, 233–4). Ignoring small variations in presentation, Marshall remained faithful to this proposition (Marshall 1926 [1897]: 338; 1961: vol. 1, 802; 1917: 318–23). A graduated income tax was best, but this judgement needed qualification because of the inefficiency consequences of its double taxation of saving and, to a lesser degree, disincentive effects on effort from very steep graduation. Equity gains could be further reduced by administrative problems.

Marshall expressed a strong second preference for property taxation, particularly in the form of estate duties. As he explicitly recognised later in his life, its detrimental effects on accumulation had been overstated. Equity was the major consideration and, as already mentioned, Marshall regarded inequality in the ownership of wealth as more socially harmful than that of income. Following a more muted presentation in 1897 and in the *Principles* derived therefrom (Marshall 1926 [1897]: 362–4; 1961: vol. 1, 136–7), his 1917 paper suggested specific taxes on property which was used for 'extravagant display' and which, furthermore, could act as a proxy for unnecessary consumption expenditure. These suggestions included a steeply graduated tax on housing. Marshall saw housing as a particularly good index of ability to pay, and one which, in addition, did not bear excessively on saving as compared with a graduated income tax. Graduated taxes could likewise be levied on hotels and restaurants, domestic servants, and, an indication of Marshall's awareness of current developments, on motor car ownership. A tax on cars was useful as a tax on wealth from which pleasure of display derived, something he identified as a generally useful source of revenue,[8] and also because car travel imposed

great discomfort on other people when it took place on 'a dusty road at thirty miles per hour'.

Marshall strongly condemned taxes on transfers, like stamp duties. They lowered mobility of goods and factors of production, the items on which they were invariably levied. Marshall's views on this subject echoed contemporary opinion (Marshall 1926 [1897]: 355–6; cf. Bastable 1895: 541).[9] Likewise, Marshall condemned taxes on particular expenditure forms as generally inferior, despite the exceptions noted in the previous paragraph, and the major exception of taxes on 'stimulants'. The last, together with taxes on housing, were regarded as particularly useful because even if levied at high rates, they caused minimal excess burdens, as Marshall had attempted to show in the early 1870s (Whitaker 1975: vol. 2, 299–301; Marshall 1926 [1897]: 338–9).

Local rates were regarded as more useful by Marshall, and ranked after 'the alcohol taxes, the death duties and the income tax' (*ibid.*: 363). Like all taxes, they had their faults, particularly because they sometimes induced detrimental effects on building and population movements. As shown subsequently, Marshall argued such effects to be slight. He also saw local rates as an eminently suitable local tax, not because of its immobile tax base, but, because as 'beneficial' taxes (which made up the greater part of rate revenue) they benefited local property owners directly.

In this context it may be noted that Marshall's 'Memorandum' for the Commission on Local Taxation comes closest to treating fiscal federalism issues, so prominent in current public finance analysis. Its final paragraphs (*ibid.*: 363–4) raise issues of local tax assignment and intergovernmental grants, and develop additional government structures designed to enhance the efficiency of service delivery. These show Marshall's support for an extension of local government responsibilities, facilitated by inserting a provincial tier between the imperial (central) and 'local' levels, which yields a more even distribution of rich and poor in sub-national jurisdictions. In tax assignment, Marshall opposed 'the allocation of central [i.e. 'onerous'] taxes to local purposes', but recognised in this context that 'poor relief, asylums, police and education' had national as well as local objectives (*ibid.*: 389). However, Marshall admitted local government's right to 'experiment' with methods of revenue raising, including local access (subject to central government control) to licence fees from the sale of alcohol, and taxes on vehicles including motor vehicles (*ibid.*: 359, 363–4; but cf. Marshall 1917: 324–5, which assigned some of these taxes nationally as useful ability-to-pay taxes based on the 'display of wealth'). Although Marshall also supported more extensive use of rates, possibly assisted by central withdrawal from the inhabited house duty to make room for rate increases, he generally preferred to finance the greater part of expanded local and provincial government activities from central government grants. Central grants were particularly useful to ensure that local government performed its more national duties with 'vigour and intelligence' (Marshall 1926 [1897]: 359, 363; cf. Sanger 1901: 327).

Marshall's tax preferences reflected the bias of his times. Over his lifetime, he revealed increasing support for the use of steeply graduated taxes on income

and property (especially estate duties) in line with the actual developments which were taking place in the British tax system. His support for the direct consumption expenditure tax reflected contemporary views, especially that of Mill (1848: 814–17). Marshall showed little sympathy for indirect commodity taxes and taxes on transactions like stamp duties, excepting taxes on alcohol for social, moral and efficiency reasons.[10] Marshall also regarded local rates and other land taxes quite highly, with improvements to be taxed with the land itself. Despite public opposition to Henry George's general views (Marshall 1969 [1883], where a policy of increased land taxation is defended on pages 205–7), Marshall on various other occasions fully supported land tax on 'the public value of land … which arises from position, extension, its yearly income of sunlight and heat and rain and air' (Marshall 1926 [1897]: 341; cf. 1961: vol. 1, 433; vol. 2, 437, inserted from the fifth edition and incorporating large parts of the former source).

IV

Marshall's frequent references to taxation issues in the *Principles* had a specific pedagogical purpose. This was explicitly stated in his 'Memorandum' for the Royal Commission on Local Taxation (Marshall 1926 [1897]: 340) in a passage reproduced in the *Principles* from the fifth edition onwards (Marshall 1961: vol. 1, 413; vol. 2, 432), which can be quoted in full:

> For indeed a great part of economic science is occupied with the diffusion throughout the community of economic changes which primarily affect some particular branch of production or consumption; and there is scarcely any economic principle which cannot be aptly illustrated by a discussion of the shifting of some tax 'forwards', i.e. towards the ultimate consumer, and away from the producer of raw material and implements of production; or else in the opposite direction, 'backwards'.

This statement reveals Marshall as a true follower of Ricardo, who had also used tax incidence analysis as a major application of his theory of value and distribution. In fact, many of Marshall's illustrations of the theory of value drawn from the incidence of taxation were initially inspired by his close study of Ricardo and Mill on the subject.[11] However, the more Marshall departed from their theories by developing his own theory of distribution, the more he questioned their traditional incidence results. A fragment on profits tax, dated 28 May 1884, clearly shows this. Its objective was identifying problems to be solved when explaining the demand for factors of production, an important step in his development of the distribution theory for the *Principles* (Whitaker 1975: vol. 2, 335).

The intensity of Marshall's initial study of tax incidence is visible in his foreign trade manuscript of the early 1870s (esp. *ibid.*: 85). The page cited refers to the important but 'incomplete' work on the subject 'by the two great schools

of abstract economics: that founded in France by Quesnay and that founded in England by Ricardo', but Smith's 'more careful work … directed towards the discovery of the difficulties which still surround these doctrines', was by then already preferred by Marshall. When combined with Malthus' work (for an explanation see Marshall 1961: vol. 1, 475fn) their views contained two important results on tax incidence:

> The first is that a tax on wages or on necessaries tends to check the growth of the labouring population; to increase the competition of capitalists for workmen and diminish the competition of workmen for hire. So that the taxes, which have for many generations been levied on the working classes have had the effect of rendering less than they would otherwise have been the benefits which the rich and in particular the landowners derive from their property. The second result is that whatever diminishes the rate of profits tends to check to some, though not necessarily to a great extent, the accumulation of capital; and therefore of the means of supporting labour. Taxes on the rich fall to some extent on profits, so that the taxes which have for many generations been levied on the rich, have had the effect of making the position of the working classes less desirable than it otherwise would have been.
>
> (in Whitaker 1975: vol. 2, 85)[12]

Marshall's treatment of tax incidence is most succinctly set out in his 'Memorandum' for the Royal Commission on Local Taxation (Marshall 1926 [1897]: 340–4, 352–7).[13] Shifting of tax burdens is implicitly analysed in terms of elasticities of supply and demand. Only a tax assessed on the pure monopoly as a unit or on its net profits cannot be shifted (cf. Marshall 1961: vol. 1, 481–4; vol. 2, 534, material dating substantially from the first edition). Other taxes on monopolies can be shifted.[14] The incidence of taxes on profits is in general much more complex. Marshall explains this by the fact that profits are a composite form of income comprising 'some interest on capital, some earnings of ability and work, and, often, some insurance against risk', components which vary considerably in relative importance between industries and, within an industry, between firms of different size and different location (Marshall 1926 [1897]: 356–7). Despite this complexity, the classical proposition that taxes on profits fall on capital, and are therefore widely diffused throughout the community, remains valid.

The importance of elasticity of supply and demand (and hence time period) to tax incidence analysis is illustrated by Marshall in a famous example of a sudden and heavy tax on printing (*ibid*.: 341–2; much of which reproduced in the *Principles* from the fifth edition onwards; Marshall 1961: vol. 1, 414–15; vol. 2, 432). Elasticity of demand and supply considerations cause the tax to fall initially on those working in the industry whose skills tend to be specific to the activity taxed. Only if the tax is local can such employees escape its impact through emigration. The longer run enables some forward shifting of the tax. If

instead the tax is imposed on printing presses, tax effects on price and output are delayed until old presses have to be replaced. If applied to the use of presses, tax on old presses is paid from quasi-rents and not shifted. When applied to new presses, tax raises marginal costs, lowering the supply of printing and raising its price until the use of the new presses at the margin pays the tax in order to return the customary net profit for the industry. In conformity to Marshall's views on the pedagogic value of tax incidence examples, this particular case illustrated the qualities of the concept of quasi-rent, including the considerations of time it introduced to the analysis of marginal cost in relation to value.

The analysis of monopoly tax incidence (Marshall 1926 [1897]: 240–1) was likewise intended to illustrate intricate aspects of marginal cost in relation to value; this time from the side of rent and effects thereon from taxes on land (cf. Marshall 1923b [1919]: 824–7). A tax on pure economic rent or its 'original' and 'inherent' value, like a tax on the net profit of monopoly, cannot be shifted. However, the shifting of a tax levied on land or its produce is possible when designed to discourage cultivation or investment in improvements like farm buildings. The former case is complex and depends on whether the analysis is conducted in terms of agricultural produce as a whole (the classical economists' generic 'corn') or a specific product of the land. In the first instance, the extent to which the tax can be shifted depends on the relative supply of 'corn' grown at the margin of cultivation; the lesser (greater) the quantity grown in this circumstance, the more (less) of the tax falls on the farmer (and, ultimately, the landlord) and the less (more) on the consumers of corn. The slope of the supply curve over the relevant range determines this result, *ceteris paribus*. A tax on a specific commodity like hops is shifted to consumers, depending on its elasticity of supply and demand. Inelastic demand and elastic supply, for example, may induce a price rise approximating the tax and hence its substantial shift to consumers. Similar results are derived for the short period to explain the incidence of taxes affecting returns to farm buildings, and quasi-rents in general (Marshall 1961: vol. 1, 432–8).

Marshall's analysis of the incidence of local rates reflects many of these issues. An example is his distinction between the effects of a local and a national tax, the former potentially leading to population movements. If rates are 'beneficial', the net benefit of the tax exceeds its burden and population shifts (or other detrimental consequences) are unlikely. Similar reasoning is relevant for explaining the incidence of rates on building values. Incidence of domestic rates between owner and occupier depends on progress of the district: in a declining locality, incidence is likely to be on the owner rather than the occupier; *vice versa* for a progressing district. Rates on business premises are passed forward to customers depending on supply and demand elasticities. A degree of spatial monopoly (dealing 'in things which cannot be easily got from a distance') facilitates forward shifting. Long- and short-run consequences are also carefully distinguished. Switching the rate base from improved capital values to site values initially raises the value of expensive buildings in districts where rates are heavy, and lowers the value of obsolete buildings on large sites. After a

time, buildings reflect site values and rate burdens: hence new building shifts to the suburbs where vacant building land is now paying higher rates. Marshall warns at the outset that this incidence analysis of rates embodies only 'general tendencies'; precise consequences of a rate change depend on the specific features of each particular case (*ibid.*: app. G, esp. 795–9).

Marshall's incidence analysis made a number of important contributions, of which the distinction he made between long- and short-run effects was the most important, as Musgrave (1987: 39) has argued. Furthermore, his use of demand and supply elasticity in tax incidence analysis enabled more precise results about shifting of specific taxes to be obtained. Both these contributions rely on innovative features of his theory of 'value', explaining why he thought tax incidence analysis particularly useful for illustrating such concepts in the *Principles*.

V

Marshall's analysis of taxation is instructive on several counts. First, his theoretical discussion, particularly with respect to tax incidence, sheds light on the more innovative aspects of his theory of value. Examples are his notions of supply and demand elasticity, so crucial to more precise determination of where tax burdens will eventually be placed. Given the time dependence of elasticity, short-period effects must be separated from longer-period effects. Tax incidence examples were therefore also very useful to illuminate the concept of quasi-rent.

Second, Marshall's opinions on tax policy were invariably extremely cautious. One manifestation of this is that they tended to follow rather than lead public opinion. His growing support for the principle of graduation is an example, reflecting as it did contemporary estate duty and income tax practice. Another example of that caution is his explicit reluctance to move from theoretical principles to practice. His warnings about the difficulties in attempting to reap the welfare benefits from taxing a decreasing costs industry to subsidise increasing returns industries from the revenue so raised illustrate this clearly. Marshall's doubts about availability of the essential information to implement the measure effectively absolve him from Clapham's criticism (1922) of using 'empty economic boxes'. His failure to publish his findings on excess burden and optimal taxation point in a similar direction, as do his many warnings against simplistic assessment of taxes in terms of single criteria like equity.

Marshall's taxation writings also provide interesting perspectives on the history of economic thought. His strong preference for Smithian incidence analysis, incomplete and imprecise though this analysis was relative to the more precise but abstract findings from the schools of Quesnay and Ricardo, is a further pointer to the high esteem in which he held the author of the *Wealth of Nations*. As noted, Marshall's interest in taxation also demonstrates his acquaintance with Whewell's work at an early stage of his career.

Finally, the taxation material provides further reasons for regretting the fact that Marshall never completed his second volume of the *Principles* in which tax

principles and their application would have been fully elucidated. Fortunately, enough is available to indicate the lines on which Marshall would have developed these views. In addition, his incorporation of much tax material with the later editions of the *Principles* which explicitly abandoned reference to a second volume, enabled diffusion of this tax material to a wider audience. That audience in connection with taxation, was, however, surprisingly small.[15] Many of Marshall's insights into tax theory, like his important work on monetary theory and policy, had therefore to be retrieved long after they were initially made.

Notes

1 After noting the evasion possibilities from income splitting inherent in a linear income tax of the type discussed, Marshall illustrated this proposition by giving the following formula for a graduated income tax

$$c.3\sqrt{\frac{n-a}{100}}.\frac{n}{100}$$

where c is an appropriate constant, n is income and a is 'necessary income', which, for illustrative purposes, Marshall took to be 100 (in Whitaker 1975: vol. 2, 383). The Mill-Benthamite origins of his approach to non-proportional income tax can be seen in Mill (1848: 809, 813). Marshall's early concern with income tax evasion is illustrated by a quotation from the Inland Commissioners for 1869 given in Palgrave's *Local Taxation* (1871: 78), which he copied into his copy of Mill's *Principles* (Book V, ch. III, §5, 500). This read as follows: '40 per cent of persons assessed had understated their incomes to such an extent that a true return would give an addition of 130 per cent'. Marshall's copy of Mill's *Principles* (the 'people's' edition of 1865) is preserved in Cambridge University Library (manuscript collection, Marshall, d.61).

2 Marshall (1917: 318) described this plea for steeply graduated income and property taxation as a product of 'constructive ethics', a position he identified as being 'in full swing' before the start of World War I, perhaps an oblique reference to the 1909 budget proposals and the support these generated in the country.

3 This matter had earlier been broached in the unfinished manuscripts of the early 1870s relating to the theory of foreign trade (Whitaker 1975: vol. 2, 83–4) in which Marshall particularly dwelt on the administrative problems associated with *ad valorem* taxes on commodities like wine and cigars.

4 See, for example, Musgrave (1987: 26) who is not aware of Marshall's early work on the subject, and Auerbach (1987: 61) who omits any mention of Marshall in this context.

5 As Whitaker (1975: vol. 2, 188) points out, the 'factual' accuracy of this proposition is flawed by its misleading welfare implication arising from the assumptions required to aggregate losses of consumer surplus across all the separate commodities. Constancy of marginal utility of money income in the measurement of consumer surplus for a particular commodity is a major obstacle to such aggregation, but there are others as well, as Marshall himself fully realised (see Marshall 1961: vol. 1, 131–2, 842). Both of these references date substantially from the third edition, perhaps explaining why Marshall did not qualify his taxation rule, which did not appear until over 300 pages later and had originated from the first edition. Marshall may have seen such a qualification as unnecessary in any case, because practical

applicability of the tax proposition in question was denied in later sentences in the footnote in which it appeared.

6 See Marshall (1917: 213). A note gives an arithmetical illustration:

> Suppose a tax of, say, a shilling in the pound [5 per cent] is levied permanently on all income, and £1000 saved yields, say, 4 per cent permanently: then that £40 of annual income will yield permanently £2 as tax; and the present value of that permanent yield will be £50 – the exact amount of the original tax.

7 Marshall (1926 [1897]: 338) suggests partial exemption of savings for a limited period of years as an experimental remedy to the double income tax on savings which might be usefully tried on a small scale. His discomfort with this suggestion is indicated by the typical Marshallian qualification: 'Any such plan must necessarily proceed on broad lines, and ignore the lighter considerations of equity when seeking to adjust the weightier; and it would need to be introduced gradually and tentatively'. The 1917 discussion of tax policy did not develop the notion of an income tax experiment of this kind.

8 The last enables Marshall to plead likewise for a tax on the ownership of jewellery, which would extract revenue from the pleasure of owning such pieces of property. He may therefore have had some sympathy with the notion of regular wealth ownership taxes, as currently levied in various OECD countries. A tax on such an item of display would have reduced the attractiveness of holding such sterile forms of investment, but Marshall did not develop this aspect of the matter (Marshall 1917: 325). Marshall likewise supported the introduction of a tax on advertising on social grounds, partly for the public good of diminishing the growing influence of advertising managers on the editorial policy of the periodical literature (*ibid*.: 325, cf. 1926 [1897]: 364). Marshall's rationale for a tax on advertising was therefore different from that of Kaldor and Neild (1962) which was designed to reverse the drift towards concentration of ownership in the media.

9 Marshall's criticism of stamp duties sits uneasily with his remarks (1926 [1897]: 358–9) that England is a country 'which has rid herself … of all taxes which are in themselves mischievous'.

10 Minimisation of excess burden had been the justification of alcohol taxation in the early 1870s (Whitaker 1975: vol. 2, 299), but Marshall's judgement thereon is not confirmed by more recent estimates of the dead-weight welfare loss of this type of tax. R. A. and P. B. Musgrave (1984: 307) report the excess burden of excises on liquor as 28 per cent of revenue, far greater in relative terms than that imposed by the work-leisure, or saving-consumption choices induced by the income tax.

11 Marshall 1961: vol. 1, 413; vol. 2, 432, cf. Musgrave 1987: 39. Marshall's Appendix L, 'Ricardo's Doctrine as to Taxes on Improvements in Agriculture' (Marshall 1961: vol. 1, 833) is a good example. This had originally appeared in the first edition as a lengthy textual note to Book VII, Chapter 10 (see Marshall 1961: vol. 2, 829). The issue of taxes on improvements in agriculture had been intensively studied by the young Marshall as some detailed annotations in his copy of Mill's *Principles* demonstrate. One of these comments, incidentally (on the blank page facing 507) refers to Whewell's work in the *Transactions*, 1829: 108 (Whewell 1971: 17–18), thereby providing proof that at an early stage of his studies, Marshall had been familiar with Whewell's mathematical economics, contrary to what Whitaker (1975: vol. 1, 45, fn26) seems to imply.

12 Cf. Marshall's notes on Turgot and Ricardo on the subject (in Whitaker 1975 vol. 2, 252–3, 257–9). Turgot's work appears to have been the only writing by a member of Quesnay's school with which Marshall was familiar. It may also be noted that results like those quoted in the text featured in Marshall's surviving lecture notes on taxation (*ibid*.: 381–5).

13 Much of the incidence material of this memoir was incorporated in the *Principles* from the fifth edition onwards, in part in Book V, Chapters IX–XI, in part in Appendix G. Not all of Marshall's tax incidence theory in the *Principles* derived from this source. Examples include the incidence analysis of a tax on monopoly (as shown below) and that on the improvement of land in Appendix L. Tax incidence material was also included in Marshall (1919): for example, on incidence in general, pages 410–11; on monopoly tax shifting, 411–12, 824–7 (the last of which leads into land taxation); incidence of local rates, 818–19. In the context of monopoly tax incidence, Marshall briefly discussed incidence of a tax on 'joint products': lessening of sale of the first of these products induced by the tax would lower the supply of the second automatically (414, fn1).
14 Because they affect price or output decision; Marshall (1961: vol. 1, 856) presented a mathematical proof of this, whose final form comes from the second edition. It is as elegant as that offered a few years later by Wicksell (1896).
15 This was implied in the first section of this chapter by the relatively small number of tax papers in the *Economic Journal* in which his work was directly cited. Even some of his more favoured students failed to cite him on the subject. A good example is Chapman (1912; 1913), though the latter paper, on pages 34–5, almost paraphrases Marshall's original support for progressive taxation in terms of a 'hierarchy of wants'-type argument (Marshall 1961: vol. 1, 134–7).

References

Auerbach, A. K. (1987) 'The Theory of Excess Burden and Optimal Taxation', in A. J. Auerbach and M. Feldstein (eds) *Handbook of Public Economics*, vol. 1, Amsterdam and New York: North Holland, ch. 2.

Bastable, C. F. (1892) *Public Finance*, 2nd edn, London: Macmillan, 1895.

Bickerdicke, G. F. (1902) 'Taxation of Site Value', *Economic Journal*, 12(4) 472–84.

Cassel, G. (1901) 'The Theory of Progressive Taxation', *Economic Journal*, 11(4) 481–91.

Chapman, S. J. (1912) 'The Incidence of Some Land Taxes and the Dispersion of Differential Advantage', *Economic Journal*, 22(3) 489–92.

——(1913) 'The Utility of Income and Progressive Taxation', *Economic Journal*, 23(1) 25–35.

Clapham, J. H. (1922) 'Of Empty Economic Boxes', *Economic Journal*, 32(3) 305–14.

Colwyn Committee (1927) *Report of the Committee on the National Debt and Taxation*, Cmnd 2800, London: HMSO.

Hook, A. (1905) 'The Present Position of the Land Tax', *Economic Journal*, 15(3) 374–80.

Kaldor, N. and Neild, R. R. (1962) 'A Proposal for a Levy on the Advertising Revenue of Newspapers', in N. Kaldor (ed.) *Reports on Taxation*, London: Duckworth, 1980, 115–23.

Marshall, A. (1897) 'Memorandum to the Royal Commission on Local Taxation on the Classification and Incidence of Imperial and Local Taxes', published in the Commission's *Report*, Cmnd 9528 of 1899 and reprinted in Marshall (1926) *Official Papers by Alfred Marshall*, ed. J. M. Keynes, London: Macmillan for the Royal Economic Society, 327–64.

——(1903) 'Memorandum on the Fiscal Policy of International Trade', published 1908 as House of Commons Paper no. 321. Reprinted in Marshall (1926) *Official Papers by Alfred Marshall*, ed. J. M. Keynes, London: Macmillan for the Royal Economic Society, 365–420.

——(1917) 'National Taxation after the War', in W. H. Dawson (ed.) *After-War Problems*, London: George Allen & Unwin.
——(1923a) *Money, Credit and Commerce*, London: Macmillan.
——(1923b) [1919] *Industry and Trade*, 5th edn, London: Macmillan.
——(1926) *Official Papers by Alfred Marshall*, ed. J. M. Keynes, London: Macmillan for the Royal Economic Society.
——(1930) [1879] *The Pure Theory of Foreign Trade: The Pure Theory of Domestic Values*, no. 1 in a series of Reprints of Scarce Tracts in Economic and Political Science, London: London School of Economics. Originally printed for private circulation by H. Sidgwick, Cambridge, 1879, and more recently reprinted, Clifton NJ: Augustus Kelley, 1974.
——(1961) *Principles of Economics*, 9th variorum edn, 2 vols, ed. C. W. Guillebaud, London: Macmillan for the Royal Economic Society.
——(1969) [1883] 'Three Lectures on Progress and Poverty', edited with an introduction by G. J. Stigler, *Journal of Law and Economics*, 12(1) 181–226. Reprinted in J. C. Wood (ed.) *Alfred Marshall: Critical Assessments*, London: Croom Helm, 1982, IV, 109.
McCulloch, J. R. (1852) [1845] *A Treatise on the Principles and Practical Influence of Taxation and the Funding System*, 2nd edn, London: Longman, Brown, Green and Longmans.
Mill, J. S. (1965) [1848] *Principles of Political Economy, with some of Their Applications to Social Philosophy*, in *Collected Works of John Stuart Mill*, Toronto: Toronto University Press, vol. 3.
Musgrave, R. A. (1959) *The Theory of Public Finance*, New York: McGraw-Hill.
——(1987) 'A Brief History of Fiscal Doctrine', in A. J. Auerbach and M. Feldstein (eds) *Handbook of Public Economics*, Amsterdam and New York: North Holland, vol. 1, ch. 1.
Musgrave, R. A. and Musgrave, P. B. (1984) *Public Finance in Theory and Practice*, 4th edn, New York: McGraw Hill.
Palgrave, R. H. Inglis (1871) *The Local Taxation of Great Britain and Ireland*, London: Statistical Society of London.
Pigou, A. C. (1912) *Wealth and Welfare*, London: Macmillan.
——(1928) *A Study in Public Finance*, London: Macmillan.
Pigou, A. C. (ed.) (1925) *Memorials of Alfred Marshall*, London: Macmillan.
Plehn, C. C. (1911) [1896] *Introduction to Public Finance*, 3rd edn, New York: Macmillan.
Reisman, D. (1987) *Alfred Marshall: Progress and Politics*, London: Macmillan.
Sanger, C. P. (1901) 'The Report of the Local Government Commission', *Economic Journal*, 11(3) 321–33.
Wedgewood, J. C. (1912) 'The Principle of Land Value Taxation', *Economic Journal*, 22(3) September, 388–97.
Whewell, W. (1971) [1829] 'Mathematical Exposition of some Doctrines of Political Economy', from the *Transactions* of the Cambridge Philosophical Society, Cambridge, reprinted New York: Augustus M. Kelley.
Whitaker, J. K. (1987) 'Alfred Marshall, 1842–1924', in J. Eatwell, M. Milgate and P. Newman (eds) *The New Palgrave: A Dictionary of Economics*, London: Macmillan, vol. 3, 350–63.
Whitaker, J. K. (ed.) (1975) *The Early Economic Writings of Alfred Marshall, 1867–1890*, 2 vols, London: Macmillan for the Royal Economic Society.

Wicksell, K. (1896) 'Taxation in the Monopoly Case', in *Finanztheoretische Untersuchungen*, Jena: Gustav Fisher, ch. 2, appendix. Reprinted in R. A. Musgrave and C. S. Shoup (eds) *Readings in the Economics of Taxation*, London: Allen & Unwin, 1959, Reading 16, 256–57.

Wood, J. C. (ed.) (1982) *Alfred Marshall: Critical Assessments*, 4 vols, London: Croom Helm.