

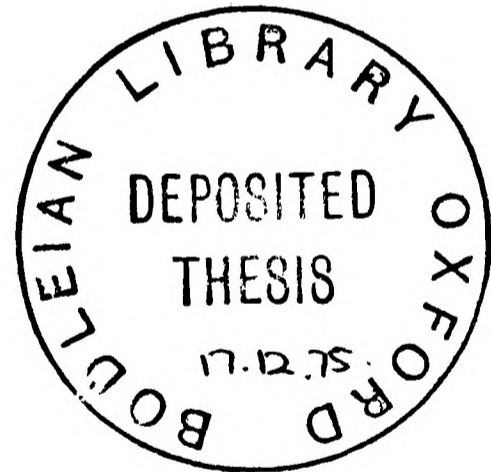
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'COMPETITION' in the HISTORY of ECONOMIC THOUGHT

A Thesis to Fulfil the Requirements for the Degree
of Doctor of Philosophy, Submitted to the
Faculty of Social Studies
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by

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PREFACE

My interest in the subject of competition began, tenuously, in the Autumn of 1966, during a course of lectures on government and enterprise, given by Professor R. F. Harris, at the University of Manitoba. That initial interest was both strengthened and broadened in the following year by his series of graduate seminars on the history of economic thought, and it eventually led me to the choice of a thesis topic, "Schumpeter on Competition" (M.A., Manitoba, 1970).

To Professor Harris I owe an enormous personal debt, for all that he has done to make my doctoral studies possible.

Preliminary research into Schumpeter's life and writings served as a useful stepping-stone to the present thesis. Schumpeter, in addition to advancing his own views on competition, brought to his work a considerable knowledge and understanding of the history of economic thought, though some of his attitudes are quite puzzling and not entirely defensible, while oftentimes he seemed to adopt questionable positions, merely for the sake of being provocative. However, with his work as the initial stimulus towards further inquiry, I trust that since 1970 there has been a maturing in my appreciation of the many-sided issues of competition in economic thought.

Libraries are the veritable sine qua non of historical research. The combined resources of the splendid and numerous libraries of Oxford and London, taken together, must surely represent the finest collection of economic literature anywhere in the world. During the past four years, I have sometimes felt that I were a permanent resident in one of them, the Bodleian, though I have also drawn heavily upon others: in particular, the Social Studies Library, St. John's College Library and the Codrington of All Soul's, the Law Library and that of the Economics and Statistics Institute, the Modern History Library and the Taylorian (which is surprisingly well-stocked with economic literature of foreign languages), even the Radcliffe Science Library, for one of Edgeworth's

more important but little known papers, and especially the very extensive economics collection of the Nuffield College Library.

Oxford, besides possessing these facilities - truly an historian's delight - has proved to be an ideal setting in which to do the kind of detailed research necessary for my thesis. With its unique set of institutions, its central location, near to London, and its compact arrangement, so well suited both for living and for studying, Oxford has given me the opportunity to devote my full and undivided attention and energies to the task that has taken me four very busy, but very enjoyable, years to complete.

Though my personal contacts during those past four years have been relatively few in number, in these I have been quite fortunate.

Mr. G. B. Richardson, then Fellow and Tutor of Economics at St. John's College, willingly undertook to supervise my studies, when I first came to Oxford in October 1971. He saw me patiently and encouragingly through the difficult preparatory stages, when the key arguments for my thesis were only just beginning to take on some recognizable shape. In basic sympathy with many of my ideas and attitudes on the subject of competition, he nevertheless chose to adopt the role of the Devil's Advocate (as he put it, at the time), to contain some of my more enthusiastic excesses of those early days. In retrospect, I can see the wisdom of his decision, and I hope that he, in reviewing the finished product, will feel that his efforts in that direction were not without effect, but were justified in their results.

Also, I should add that Mr. Richardson's book, Information and Investment, was quite instrumental in helping me to crystallize into a unified argument a jumble of notions about economic equilibrium which had been floating around, rather chaotically, in my mind for some time before I came to Oxford. The reader cannot fail to detect the influence of that book throughout the latter half of this thesis, and particularly in Chapter VII.

During the two terms of Mr. Richardson's sabbatical leave in 1973,

Mr. J. F. Wright, Fellow of Trinity College, acted in his place. At a time when my ideas on competition and related subjects were still very much in a state of flux, Mr. Wright reviewed several papers I had written on methodology, along with a considerable stack of regular drafting for my history. His trenchant but constructive criticisms assisted me in shoring up some of the weaker portions of my argument. Both his advice at that juncture and his support of my work since then was, and is, much appreciated.

Following Mr. Richardson's appointment to the Clarendon Press, effective from January 1974, Dr. R. M. Hartwell, Reader in Social and Economic History, Nuffield College, assumed permanent supervisory duties. During the past two years, Dr. Hartwell has been very generous to me with his time, both in reading and commenting upon an immense accumulation of my writing, stretching out over the previous three years (and including the semi-final chapter drafts, which are in fact much longer than the finished version), and in guiding my work-in-progress through to the completing stages. As well, I have drawn freely upon Dr. Hartwell's own very extensive personal library on economic history, which contains a sizable selection from the history of economic thought.

Dr. Hartwell's editorial experience and sound judgement on matters of style, balance in coverage and content, have been of great assistance to me in smoothing out some of the rougher edges of those preliminary drafts, though I daresay that improvements remain to be made. Of course, the views expressed in this thesis are my own.

In November 1973, I delivered a progress report on my thesis topic to a group of graduate students, in a seminar organized by Jon Ayles and Kerry Schott, at Nuffield College, where I received a friendly and encouraging response from all those who attended. The comments, impressions and reactions gleaned from that occasion were a useful guide to me, as were those I gathered from individual conversations with Messrs. J. A. Kay, J. S. Flemming, W. A. Eltis, A. Walker and Professor Sir John Hicks.

I am very grateful to the Canada Council for the generous financial support they provided me, in the form of a Doctoral Fellowship, which has extended over the full period of my stay at Oxford; and, in addition to all of my supervisors, I am indebted to Professors R. Simkin, H. H. Vincent, B. L. Scarfe, J. G. Cragg (from Canada) and J. A. C. Brown, for their testimonials and other forms of support of my doctoral programme, at one stage or another along the way, since 1970.

To conclude, it is my very pleasant duty to thank Mrs. Gillian Ball for preparing the final typescript in such a clear and efficient manner.

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ABSTRACT

The word, competition, entered economic discourse slowly and naturally, over many decades and even centuries, as a term of common usage. From that point of view, I trace the development of the word, as it underwent various conceptual modifications en route to the more technical concept of perfect competition. The growing divergence between the ordinary meaning and the technical concept of competition represents one of the many gauges of the progress of economics towards becoming a rigorous science, but that divergence has also brought with it a number of problems.

Thus, the purpose of my thesis is two-fold: it is both a scholarly and a didactic one. As for scholarship, I set forth a textually accurate account of how the word competition has figured in the early rise and the more mature consolidation of economics as a special discipline, in which the abstract idea of a "perfect" type of market competition was employed by economists as an heuristic fiction, to bring together all the separate elements of what Edgeworth has so nicely termed the Economic Calculus. As for didactics, my thesis also serves as an exercise in identifying several root problems stemming from the concept of competition, both in its common and technical forms. Suggestions are made as to how some of the perplexities of present-day economic theory, based on the notion of perfect competition, can be resolved.

Key Themes:- In Chapter I, four major themes are announced and subjected to semantic analysis. Running throughout the remainder of the history, they refer to the dualities, ambiguities and qualities of vagueness and imprecision which pertain to the common-sense or ordinary notion of competitive conduct, understood as the striving of two or more persons against one another for the same object.

Upon careful study, competition is readily seen to be both equilibrating and disequilibrating in its tendencies, comprising both innovative and

adaptive patterns of behaviour, and is both freeing and constraining in its effects, entailing as it does not only deliberate and conscious striving (or the exercise of free will) but as well the clash of opposing interests, or contention between two or more persons, Themes I and II.

As a consequence of the foregoing dualities, the word itself holds out emotive connotations that are both positive and negative (Theme III), giving the word a character of ambivalence which is inherent from its very root meaning. Thus, in its role as a principle of economic thought, competition has elicited widely, and sometimes wildly, varying responses from those who have contemplated its workings and have passed judgement upon its status.

Finally, because of its very abstraction or generality of meaning, the common-sense idea of competition is imprecise and open-ended, insofar as its general meaning specifies nothing about (a) the nature of the objectives of competitive pursuit, (b) the setting in which competitive striving takes place, (c) the participants and their grouping into competitive "units," and (d) the strategies and patterns of conduct followed - Theme IV.

Critical Episodes:- The historical narrative proceeds, for the most part, in a chronological sequence, and is organized around a series of decisive moments, when crucial turning-points are reached and passed, separating distinct traditions of thought, or else marking the subtle transition from one mode of reasoning to another.

After a brief preliminary survey of the medieval and early modern scholastic literature, the main historical narrative begins essentially with an account of the "classical" mercantilist literature of the first half of the 17th century, with its emphasis upon national rivalries and the so-called balance-of-trade doctrine. With these preparatory steps taken, the remainder of the historical content of the thesis can be summarized in terms of the following critical episodes:-

1. 1670s-1700. The beginnings of the breakdown of the classical mercantilist doctrine is accompanied by a subtle shift away from the emphasis upon national rivalry towards a more individualized and sectionalized understanding of competitive interdependence, in which the negative overtones of (national) conflict in market exchange are gradually replaced by a more positive attitude towards competition as a stimulus to economic progress and efficiency.

2. 1750s-1776. The final breakdown of the mercantile logic, as the dominant influence over economic thought, occurs with the sudden and dramatic rise and momentary ascendancy of the physiocratic school, a decisive confrontation taking place between Forbonnais, latter-day exponent of "liberal mercantilism," and Quesnay, Baudeau and others of the new school (1766-68). As a principle of harmony in the physiocratic doctrine, market competition is depicted as an exchange of equivalents between individuals, and hence a limited but beneficial force in economic affairs. Adam Smith, sharing the physiocrats' liberal attitude and individualized concept of competition, adapts and improves their economic calculus, giving to competition a more positive and directive role, by showing how it regulates and thus facilitates market exchange, which in turn allows for a more productive employment of resources.

3. 1815-1848. Building upon Smith's foundations of economic liberalism, the classical economists make important conceptual and analytical advances in regard to the economic calculus, such as in enunciating the law of diminishing returns, but do rather little to alter Smith's treatment of competition. A crisis in classical liberalism is soon reached (c. 1825), in facing the newly emergent tradition of socialist thought, whereby there ensues a fierce clash of opinion concerning such things as the freeing versus constraining character of competition. As a result, the behavioural process of competition tends to become associated with a particular set of economic institutions (property, contract, markets, and market exchange). The debate points to the need to distinguish between primary and secondary income distribution (paralleling that of "class" and "individual") and the need to clarify the nature of competitive grouping.

4. 1866-71. After much delay, there occurs a transition from the classical modes of verbal reasoning towards the neoclassical styles and methods of mathematical reasoning, a transition which was hastened by Thornton's sharp attack upon competition as a law-like principle (1866) and by Jevons's response to the growing need to improve the classical value theory. However, the substance of classical doctrine is retained in neoclassical theory, as is shown by the instrumental role played by "perfect" competition, as an heuristic fiction used in the building of the neoclassical calculus. This source of continuity is qualified, though, to the extent that the classical principle of competition is supported less and less by a direct intuitive appeal to empirical evidence and more and more by the resort to abstraction and the logical rigour of mathematical theory.

5. 1889-91. After a decade or more of rapid progress and genuine improvement and refinement of mathematical technique of analysis, neoclassical theory reaches a state of crisis, brief in duration but far-reaching in its implications, when Edgeworth's static approach to equilibrium analysis departs from the Walrasian dynamics of tâtonnement, faintly signalling the onset of a new outlook as to the nature and purpose of abstract economics. However, the underlying issues are not resolved at this point, and so material is selected from the 20th century to illustrate the working through of those issues into a more nearly contemporary context.

Major Conclusions:- These I divide into two sharply distinct categories: those which refer specifically and narrowly to the concept and theory of perfect competition, as such; and those which refer to the general concept of economic competition, understood in its very broadest sense.

First, a review is made of the various arguments for the theory of perfect competition, while stressing its strategic and instrumental role in the development of abstract economic thought, I argue that it is no longer acceptable on scientific grounds, either on the strength of empirical evidence or on the

rigour of logical reasoning. However, I suggest that a divorce should be made between the behavioural theory of perfect competition, and the abstract analytical techniques it gave rise to, in the form of equilibrium analysis, the latter being the more permanent and enduring legacy of the classical and neoclassical achievement.

Second, as to economic competition in general, I draw the conclusion that though it is not law-like in its tendencies or effects, that is, in producing regular and uniformly repeated sequences of events, nevertheless, by its very breadth of meaning, competition is a ubiquitous fact of life, and economists were certainly justified in seizing upon it in their explanations of economic behaviour, and the concept - broadly interpreted - is as relevant today as it has always been. Furthermore, I conclude that there is nothing inherently good or bad about the process of competition in general, and that the only kind of value judgements that can be validly drawn about it are those which refer to, and are confined to, specific and context-bound situations, each of which must be evaluated on its own merits.

TABLE OF CONTENTS

PREFACE	ii
ABSTRACT	vi
CHAPTERS	
I. ANTECEDENTS	1
1. Origins in Common Usage, 1. 2. A Semantic Analysis of Key Themes, 7. 3. Some Origins of Usage in the Economic Literature, 16. 4. The Economic Calculus (I) - Nations, Companies and Individuals, 26. 5. The Economic Calculus (II) - Freedom, Efficiency and Progress, 35.	
II. EIGHTEENTH-CENTURY ORIGINS	43
1. The Legacy of Mercantilism, 43. 2. The Liberal Mercantilist Lull, 53. 3. From Mercantilism towards Liberalism, 60. 4. From Agricultural Reform to the Dogmatics of Physiocracy, 71. 5. On the Eve of "The Wealth of Nations," 84.	
III. THE CLASSICAL TRADITION	88
1. Adam Smith's Classical Liberal Synthesis, 88. 2. Classicism in the Making, 105. 3. The Classical Decade, 1815-1825, 114.	
IV. REACTIONS AND COUNTER-REACTIONS	131
1. Competition in the Great Battle of Ideas, 131. 2. Reactions in Great Britain, 136. 3. Reactions on the Continent, 152. 4. John Stuart Mill's Re-Statement of Classicism, 161. 5. The Counter-Reaction, 169.	
V. THE TRANSITION TO NEOCLASSICISM	174
1. The Nature of the Transition, 174. 2. The Transition in Great Britain, 180. 3. W. Stanley Jevons and the Onset of Neoclassicism, 186. 4. Cournot and the Mathematical Tradition in France, 198. 5. Léon Walras and General Equilibrium, 205.	
VI. NEOCLASSICISM: DEVELOPMENT TO MATURITY	219
1. Theoretical Debate in the 1880s, 219. 2. Edgeworth and the Problems of Determinateness, 222. 3. The Logic of Dynamics and the Crisis in Economic Theory, 231. 4. A Digression on Developments in Germany and Austria, 241. 5. Neoclassicism in its Maturity, 248.	
VII. THE TWENTIETH CENTURY	267
1. From "Free" to "Perfect" and "Monopolistic" Competition, 267. 2. Joseph Schumpeter and the Dilemma of Economic Theory, 283. 3. Testing and Evidence: The Empirical Crunch, 290. 4. Language, Logic and Mathematical Economics, 303. 5. Conclusions, 318.	
BIBLIOGRAPHY	326

Chapter I

ANTECEDENTS

1. Origins in Common Usage

The significance of competition as a concept in economic thought was neither suddenly discovered nor immediately appreciated; nor did the word competition itself all of a sudden spring into use in economic discourse. Both processes, the conceptual and the linguistic, took many decades and even centuries to unfold together, and indeed they are still evolving to this day.

But when did this dual process begin? When did those who commented upon economic affairs start to discuss or even refer to competition?

In trying to date the onset of this process, if we take as our criterion the actual presence of the word itself, as well as the equivalents of competition in other languages, then serious intellectual and scientific recognition and discussion of the concept did not get under way very much before the 1750s. A few stray exceptions, some sporadic but short-lived outbursts, can be traced back through the economic literature of the previous centuries. Yet, even during the vital closing decades of the 1600s, when economic pamphlets were streaming out of bookshops in an ever increasing profusion, the textual occurrence of the word, competition, were quite rare and demand some diligent hunting to be located.

What is more, when the word does appear, it is by no means imbued with any special or precise economic meaning or significance, but stands rather modestly and inconspicuously alongside thousands of other terms of common usage. Writers of commercial tracts in the 16th and 17th centuries did deploy a small number of very active terms - what we might call their technical vocabulary - terms possessing a special significance for their arguments. Competition, however, does not figure amongst those chosen few terms.

And yet, when in 1753 competition was at last proclaimed a central principle of economic thought, it had already acquired a loose non-technical meaning, a set of general connotations, built up over the previous decades and

centuries through common usage. This stable though imprecise economic meaning had come into being so slowly as to be almost imperceptible during the long period of gestation. By the 1750s, that meaning was taken for granted. The intellectual recognition of scientific importance was made, as it were, after the fact.

Thus, in order to understand how and why the concept of competition developed as it did in economic thought, one must examine the way the word arose out of its position of relative obscurity in common usage into its position of prominence as a technical term of science. For, at no distinct or discrete moment in its history has that word been consciously and deliberately introduced into economic discourse or been given some radically new and special meaning.

Now, objections might be raised against the initial choice of criterion for dating the inception of the concept into economic thought, that is, objections against the narrow criterion of the actual presence of the word, competition, itself. For example, it could be argued that when one writes the phrase, "about competition," the reference to "competition" is rather ambiguous. It could mean: (1) the phenomenon, the actual, concrete or substantive process of competitive striving as it happens in the real world; (2) the concept, idea, notion or mental image we have of that process; or (3) the mere word, the visible linguistic label we use to identify either (1) or (2).

With these basic distinctions in mind, one might set out to show that the very earliest of economic writings made reference, albeit unwittingly or unconsciously, to the phenomenon of competition, as for example in the analysis of market exchange and monopoly price such as we find this topic discussed in Aristotle. More pointedly, one could argue that long before the appearance of the word, competition, and its equivalents in other languages, some economic commentators did give evidence of having formulated a crude concept of competition, either by the use of synonymous expressions such as rivalry, emulation, and so on, or else by indirect phrasing which served equally well to convey the same meaning as the simpler words themselves.

In this vein, one historian has attributed the concept of competition

in an economic setting as far back in time as the pre-Aristotelian Greek poet, Hesiod, who writes of the example of two potters whose efforts at excelling one another in the production of their wares constituted a "good conflict" with valuable economic consequences.¹ Doubtless, many such examples could be gleaned from the writings of antiquity, but all that this assemblage would serve to illustrate is how universal is the meaning we now ascribe to the word competition in its most abstract and hence its most general sense, and what these miscellaneous observations would not constitute is a deliberate and sustained discussion of the role, status, meaning and significance of competition as a principle of economic thought.

Therefore, I should clarify at the outset that the narrative to follow is not a history of the phenomenon of competition, but is intended to indicate how the word competition and the ideas associated with it took shape as an integral part of economic analysis in the modern age. Because this history is about deliberate thought, as evidenced in written expression, great emphasis is placed upon the need for textual accuracy in tracing out the gradual evolution of certain patterns of reasoning in economic science from their humble origins in common usage.

Let us begin, then, from the beginning, with a brief sketch of the linguistic ancestry and etymology of our chosen word, competition, considered apart from any economic application, before proceeding to its more illustrious career in the science of economics.

As part of the English language, competition belongs to a family of related or cognate words all stemming from the verb, compete, and comprising such

¹Barry Gordon, Economic Analysis before Adam Smith: Hesiod of Lessius, London: ~~M~~Millan, 1975, p.5. I have not consulted Hesiod's text, but the Greeks employed a variety of words similar in meaning to competition, such as agon (contest, struggle, battle, as in the English antagonism, protagonist, etc.); amilla (conflict or contest for superiority, hence the Latin aemulatio and the English emulation); zelos (jealousy or zeal); eris (strife, quarrel, contention), and a variety of others, for which see An English-Greek Dictionary, by S.C. Woodhouse, London: Routledge, 1910, pp.151, 269-70, 718. The Greek orthographical equivalent to competition is sumpipto (to fall together or meet violently).

others as competitor, competitive and so on.¹ According to philological and etymological authorities, the verb became part of English usage in or around the 14th century, from late medieval Latin or possibly early modern French, but until the latter half of the 1500s it was used in the now obsolete neuter sense, "to fall together, coincide, be fitting" (as applied to events, causes, abstract conditions as well as to people), much in the same way as was its classical Latin antecedent, the verb competo, in one of its senses.²

This family of words is constructed from two Latin roots: the preposition cum ("with, together with, in the company of, in relation to") which takes the form of the prefixes, con- and com-, in countless words of Latin, English and the Romance languages; and, the very ancient verb, peto ("to seek"), which in turn descends from the Sanskrit, pat- ("to fall upon, fly"), with its Greek equivalent, pipto ("to fall, fall upon, fly at, attack").³

The basic meaning of the verb, peto, is best rendered in English quite simply as "to seek," but it was a verb of wide and active usage whose range of meaning might be better grasped from a sample provided by Lewis and Short. They suggest such things as:- to rush at, assail, assault; to demand, require, claim, beg, beseech, entreat, solicit, endeavour to obtain, strive after. In contrast to this vigorous range of senses, the composite verb, competo, was altogether passive in meaning when it came into use during the Augustine period to signify a meeting, coinciding or coming together of people, events, causes and so on; whereas the later and more active sense, "to strive after something in company or together,"

¹The New English Dictionary on Historical Principles, ed. J.A.H. Murray, Oxford, 1893, Vol. II (cited hereafter as O.E.D.) lists 19 cognates alongside compete, including such oddities as competible, competize, competitory, etc., which have fallen out of use.

²For various interpretations as to dates and patterns of development, see, in addition to the O.E.D., the Oxford Dictionary of English Etymology, ed. C.T. Onions, Oxford: Clarendon Press, 1966 as well as Origins: A Short Etymological Dictionary of Modern English, by Eric Partridge, 4th ed., London: Routledge & Kegan Paul, 1966. W.W. Skeat's Etymological Dictionary of the English Language, 2nd ed., Oxford: Clarendon Press, 1953, adds little to the others.

³C.T. Lewis and C. Short, A Latin Dictionary, Oxford: Clarendon Press, 1955; H.G. Liddell and R. Scott, A Greek-English Lexicon, revised by Sir H.S. Jones, Oxford: Clarendon Press, 1940.

came into use only in the post-classical period, when (according to Lewis and Short) it was still very rare. The philological sources list examples of usage which indicate that competo was most readily applied in its active sense to both amorous and military affairs - love and war - though I have not confirmed whether it was ever or often applied to economic affairs, a subject about which the Romans had very little to say.

Far more relevant to our purposes is the specialised use of competo in the juristic sense of petitioning a legal case or seeking a legal claim. Appropriately enough, the verb is very common throughout the Justinian reports of Roman civil law, and it even hovers near the very passages in which the idea of just price is mentioned.¹ Even though it possesses no clearly economic significance in this legal literature, its very presence alone is important in that it was to live on through the medieval and early modern scholastic literature on just price and thereby gradually transform itself into a more actively economic verb form.

In a similar way, so too did the Latin verb, concurro, which provided early modern French and Italian with their principal semantic equivalents to the English competition, namely, the French concurrence and the Italian concorrenza. Both of these words and their related cognates in French and Italian have had their origins ascribed to the late Latin juridical use of concurro, in the sense of petitioning or contesting a legal case.² Thus, the Latin verb concurro (from cum and the simpler verb curro, "to run, hasten, run in a race") is an equally

¹See, for example, Corpus Juris Civilis, vol. II, Codex Justinianus, ed. P. Krueger, Berlin, 1892, 4:44:10, p.180. S. P. Scott translates "competit" here as "to have a right to bring an action," in The Civil Law, Cincinnati, 1932, Vol. 13, p.101.

²For their juridical origins, see O. Bloch and W. von Wartburg, Dictionnaire Etymologique de la Langue Francaise, 5th ed., Paris, 1968 under "concourir," and Grande Dizionario Della Lingua Italiana, ed. G.B. Squarotti, Turin, 1964, Vol. III under "concorrere."

important antecedent in the evolution of competitive doctrines, and a further connecting link between classical, medieval and modern traditions.

With historical hindsight as a guide, we can safely ignore the ancestries of other competitive terms in English as well as of equivalents from the other languages of Western Europe. The vital thread runs from Latin to French and English. And yet, the often bewildering patterns in which neighbouring languages develop in very different directions from a common source can also provide semantic clues to the solution of conceptual problems. I shall illustrate briefly with two such examples.

As early as the 18th century, probably earlier, the Spanish and Portuguese languages had adopted orthographic equivalents to the English competition namely, competicion in Spanish and competicao in Portuguese. Both of these were of secondary importance to the more frequent synonymous term, competencia, used in both languages and meaning much the same thing as the English competition.¹ If this seems strange - apart from the fact that competence and competition share the same Latin roots - then it is worth noting that in English, the meaning of competent as "being fit or able to measure up to and survive currently accepted standards" is not very distant in meaning to its counterpart, competitive as "being able to partake in or survive competition."

Similarly with the English and French meanings attached to their orthographically related families of words, concur-concurrence and concourir-concurrence. Now, there may be little hint of the meaning of competition in the English word concurrence ("agreement, concord," also the sense of "coinciding with, being simultaneous with or parallel to"), and yet lodged deep in the meaning of competition there lies a residual, almost implicit, element of agreement or concurrence!

This and other peculiarities of meaning will be dealt with in the

¹Diccionario de la Lingua Castellana, 6 vols., Madrid, 1726 et seq., Vol. II (1729), pp.450-51, 482-84, and Grande Dicionario Portuguez, 5 vols., Porto, 1871 et seq., Vol. II (1873), pp. 350, 382-3, are the most comprehensive sources for Spanish and Portuguese I have consulted. I should add that the general pattern of meaning for the Spanish words, competencia-competicion-concurrencia, seems to come much closer to the French pattern than does the Portuguese.

following section, since so many of the theoretical problems posed (and solutions offered) by the principle of competition reside ultimately in the abstract meaning of the term itself.

2. A Semantic Analysis of Key Themes

The semantic analysis of competition given in this section has not been made for its own sake, as an arid philosophical exercise, but is put forward with a view to simplifying the historical narrative to follow. The key themes enunciated here are of vital importance to the understanding of the history.

The hallmark of any term of common usage is, of course, that it be in "common" use, that is, that it be employed by a large number of people over wide expanses of space and time. For this to be so, terms of common usage must possess both a stable and a general meaning. By so doing, they make communication possible and give any language its continuity as well as its identity. However, if such terms are to remain in general use, they must be flexible or elastic in their applications, not only at any given moment in time, to cover a wide range of linguistic situations, but also in adapting to ever changing circumstances over long periods of time.

Of course, some words fall by the wayside whilst others, in the process of adapting, shed old meanings and acquire new ones. Such changes must come about slowly and subtly if the terms in question are to work effectively in a living language. At any rate, such seems to be the case with the English verb, to compete, as it shifted away from its medieval passive sense towards its more vigorous active sense over the course of two or three centuries, that is, from the 14th to the latter half of the 16th century.

The Oxford New English Dictionary on Historical Principles (cited hereafter as O.E.D.) gives Florio's 1598 translation of the Italian competo as the first lexicographical indication of the early modern active sense of compete, rendered by Florio as "to contend or strive for any suite, office, place, or dignitie."¹ A few years later, Cawdrey's Table Alphabeticall (1604) contains

¹John Florio, A Worlde of Wordes, London, 1958, p.80.

what was likely the first entry in an English dictionary proper of any of the cognates of competition when the word competitor is defined as "he that sueth for the same thing, or office, that another doth."¹

Lexicons and dictionaries offer at best only a rough and ready guide to popular and current usage, both as to range of meaning or application and as to frequency of usage. But a comparison of these earliest attempts at definition with those of the present day will show how little the basic meaning of competition and its cognates has changed during the past four centuries. If we jump to the mid-18th century, we can see how little Cawdrey's definition was altered by Dyche and Pardon who in 1735 were the first to attempt to define competition analytically, as: "the striving of two or more persons to get or do the same thing,"² which Dr. Johnson modified slightly in his celebrated Dictionary of 1755: "the act of endeavouring to get or do what another endeavours to gain at the same time."³ By the 1890s, the Q.E.D. had tidied up Johnson's definition into the more concise form, "the striving of two or more persons for the same object." And 20th century dictionary definitions have changed little since that time.

Thus, no matter how abstruse the technical definitions of competition were to become in the 20th century sciences of ecology and economics, the common meaning of the term from ordinary usage has remained quite stable. Alongside this basic stability, however, we must also take into account that other requisite quality of any term of common usage, namely, its flexibility. Because of this need for elasticity, precision of meaning is not an attribute of highly active words of common usage, and dictionary definitions serve only as crude guidelines or empirical approximations to the meanings of words whose stable

¹ Robert Cawdrey, A Table Alphabetically, London, 1604, under "competitor." I have searched without success through several earlier dictionaries of the 1500s, though their arrangements are somewhat bizarre and do not facilitate ready location of words. P. Levins, Manipulus Vocabulorum, London, 1570; Richard Huloet, Abecedarium Anglico-Latinum, London, 1552; and John Baret, An Alvearie or Triple Dictionary, (London?), 1573. These titles were selected from M.M. Mathews, A Survey of English Dictionaries, Oxford: Clarendon Press, 1933.

² Thomas Dyche and William Pardon, A New General English Dictionary, London, 1735, under "competition."

³ Samuel Johnson, A Dictionary of the English Language, 2 vols., London, 1755, Vol. I, under "competition."

central gist becomes increasingly nebulous and ambiguous as we reach out to the edges of their territory on the semantic map.

Since so many of the conceptual problems encountered in competitive doctrine arise from this very quality of common usage - its vagueness, ambiguity, nebulousness, elasticity and general lack of precision - any attempt at a careful semantic analysis should aim not to construct some single and simple definition as being the "true" or "correct" interpretation, but should explore the aspects of fuzziness inherent in the term as commonly employed.

I shall begin with a definition similar to that given by the O.E.D., but it will serve not as a final source of reference, but only as a point of departure in the process of exploring the subtle nuances of meaning which give the word its wide-ranging application.

If we define competition as "the striving of two or more against one another for the same objective," we can conveniently divide its meaning into four basic elements: (1) striving, (2) of two or more, (3) for the same objective, (4) against one another. Let us consider each of these in turn.

(1) Striving denotes purposeful activity, and activity entails not merely the occurrence of distinct events but the occurrence of distinct events in some temporal sequence. In other words, striving is a temporal process and necessarily involves the passage of time. To say that competition is a dynamic process is pointless, if all that is meant by "dynamic" is the lapse of time. This is so even when we refer to "a competition" (i.e. a contest) as if it were a single event such as a game. Even in this sense, it is implied that distinct events occur in temporal sequence.

Striving entails not merely any activity, but purposeful activity. Though we may be able to observe the outward manifestations of competitive behaviour, this alone is not sufficient: we must impute to that behaviour some underlying or motivating purpose in order that we conceive of it as constituting behaviour of a competitive kind. This need to impute purpose or motive can sometimes create conceptual problems. But, on the whole, this first defining element of competition, striving, is the least problematic of the four.

(2) The plurality denoted by "two or more" underlines the social character of competition. Isolated individual striving is not competitive striving. This distinction is not so easy to maintain as it might first seem. Insofar as individuals remain separate physical entities, we must observe in (or impute to) their individual behaviour some relatedness in order to conceive of it as being competitive. This problem is dealt with under the third and fourth defining elements below.

But there is another more fundamental problem posed by this second condition. In its most abstract sense, competition specifies nothing about the manner in which the "individual" units engaging in competition are to be understood, what we might call the indeterminateness of competitive grouping. Competition involves "two or more," but two or more what? For, not only do individuals qua individuals compete with one another, but very often they also unite their efforts with one another as a co-operate unit in competition with other such groups: partners, teams, firms, and an almost infinite variety of other possible types of association between individuals suggest themselves as competitive units for analysis. Not only are whole nations said to engage in competition with one another, but if we are to take ecologists seriously, then competitive striving is not even confined to the human "race," but applies to the struggle for existence or for space and resources by all forms of life.¹

Taken by itself and treated in the abstract, this element of variety in competitive grouping may seem harmless and unproblematic. Difficulties of interpretation quickly arise, though, when we begin to consider human activity in all its complex forms and patterns, and we shall very quickly discover how the ambiguity and indeterminateness of competitive grouping has entered into the development of economic theory.

¹It is worth noting that precedence is given to the ecological meaning of competition in the leading article, "Competition," in the new Encyclopaedia Britannica, 15th ed., Chicago: University Press, 1974, Micropaedia, Vol. III, p.52, while economic competition is relegated to the item on monopoly (Macropaedia, Vol. 12, p.376). A similar balance is struck in the Dictionary of the Social Sciences, eds. J. Gould and W.L. Kolb, London: Tavistock, 1959, in the item on competition (p.118). This contains a good survey of some of the key themes outlined above in the text, with emphasis upon the contribution of sociologists.

(3) The property of relatedness is implied by the third defining element, "for the same objective." This condition elaborates further upon the social character of competition. It supplies some reason for viewing separate and distinct phenomena, the events comprising individual endeavour, as parts of some coherent and integral process. As such, these separate and distinct events acquire more significance than they possess when considered by themselves.

Yet, what is the precise meaning of this phrase, "for the same objective?" When we examine it carefully, it soon becomes evident just how imprecise and ambiguous this third defining condition really is. For, "sameness" does not imply identity of purpose, but only similarity, and how "similar" is "similar"?

Take the example of two sellers in the same market for a competitive product. Both seek to sell their product on the most advantageous terms in order to maximize profits. In this limited sense, they have the same objective: to maximize profits. But, indeed insofar as they are truly competing with one another, they have very different objectives. Each tries to maximize his own profits.

The foregoing example is a typical instance of highly focussed competition, that is, where the competitive objective is narrowly defined, the separate and distinct actions of the participants are closely related in a spatial, temporal or causal sense, and the competitive setting or arena (here, the market-place) is fairly well understood. But in common usage, the cognates of competition are often applied to the economic sphere in a more diffuse, less sharply focussed, manner. Taken to this extreme, the ambiguity of relatedness still applies. In the most general sense, all of the actors of an economic system may be said to have the "same" objective: the pursuit of economic gain or well-being. Or, to continue this play on words, it may be said that with the "similar" objective of individual gain or well-being each actor has a very different purpose in mind, his or her own well-being, in a sort of generalized competitive bellum omnes contra omnium in the Hobbesian vein.

Some of the conceptual difficulties raised here by these two extreme interpretations of "relatedness" will be sorted out in a moment when we consider the nature of competitive opposition. However, a deep and fundamental source of ambiguity and vagueness in the central meaning of competition remains firmly entrenched in this third element of the definition. For, in its most abstract sense, that is, considered apart from any specific context, competition specifies nothing about the nature of the objective sought after. Even when we narrow down the scope and range of meaning of the term by limiting it to the economic sphere, we are still left with as infinitely various a set of possible objectives as our qualifying adjective, "economic," permits.

(4) The idea of opposition expressed by the phrase, "against one another," is a very necessary adjunct to the previous three defining elements if we wish to capture the full significance of the word competition in its modern active sense. The first three conditions alone (i.e. "the striving of two or more for the same objective") are just as applicable to (a) co-operative and (b) isolated patterns of behaviour as they are to competitive varieties.

To confirm this, let us consider two simple examples. First, several individual mountain climbers each set out simultaneously, but from different positions and completely unaware of one another, to climb Mt. Everest, "because it is there." Second, several mountain climbers form a team with the common purpose of scaling Mt. Everest together in a joint effort. Ostensibly, both cases satisfy the first three conditions and yet are examples of co-operative and isolated striving. In the third instance, several climbers set out at the same time to see who can scale the heights in the shortest time, a competitive race to the summit in which, in some sense, the purpose of each climber is "opposed" to that of each of his competitors.

Of all the four defining elements of competition, this fourth and last one has certainly proved to be the most troublesome, both in its cognitive and in its emotive aspects. However we may finally choose to interpret or portray the nature of competitive opposition, this last defining element must nevertheless

be admitted as necessary to the full and proper understanding of the early modern sense of the word competition and its cognates.

In their ancient and medieval neuter sense, the verbs competo and concurro (as "to run with") carried with them little or no hint of conflict, struggle, or opposition, but as we have seen were used to convey such qualities as that of being simultaneous with, or parallel to, of coinciding with and indeed of being in agreement with. But as we pass out of the high Middle Ages into the late medieval and early modern period, the ideas of conflict and opposition were drawn into both these families of words.

By the 1600s, this set of connotations had been fairly well established as we shall see from the economic literature of the period, and by the 1700s it had been officially recognized by lexicographers. To cite one example, Dyche and Pardon define competitor as "one who strives against another to do or acquire the same thing," (1735).¹ By the mid-19th century, Roget provided an even more explicit confirmation of this fact when he listed competition, its cognates and synonyms, under such headings as: "708. OPPOSITION, antagonism, counteraction, clashing, collision, competition, rivalry, emulation," and "720. CONTENTION, contest, struggle, rivalry, corralry, competition, (etc.)" in his celebrated Thesaurus of 1852, a pattern which has been retained in the latest 20th century editions of his work.²

But having established the validity of including this fourth element in our analytical definition, we must be extremely careful as regards interpreting what it may or may not mean. For, once again, we are confronted by the amorphous and elastic qualities of a term of common usage, with all its ambiguities, nuances and subtle shifts in meaning to fit an enormous variety of circumstances.

Seldom is competition meant to apply to pure conflict. Even when a competitive struggle is characterized by violent clashes and an outright and

¹Dyche and Pardon, op. cit., under "competitor."

²P.M. Roget, Thesaurus of English Words and Phrases, London, 1852, pp.171, 174. See also the entries 710, 726, and compare some of the changes in the revised edition, London: Longman, 1962, which are really quite minor.

unreserved feeling of hostility between protagonists, the accompanying idea of competition almost always carries with it some residual degree of restraint, the observance of some social conventions, some "rules of the game," whether these be stated explicitly or else be tacitly understood by the participants.

In short, competition is not a form of pure conflict, but is a type of civilized conflict, that is, a pattern of inter-action in which both conflictual and co-operative elements subsist together. Though the conflictual predominates, the co-operative gives to competition its social structuring. Of course, these two aspects will vary in degree from one case to another and from one extreme to another, whether it be that of a friendly and almost ritualistic game of sports at the one extreme, to conventional military warfare at the other. In most instances, competitors are understood as having something in common as well as something in dispute, such that a competitive struggle involves a relatively coherent and not a chaotic clash of wills.

It would be a grave mistake, then, to treat of competition (as it arises in common usage) as if it meant something precise: it does not. The ambiguity of the foregoing condition is itself highlighted in the grammatical fact that in English it is more common and seems more natural to say and write "compete with" rather than "compete against," though both are used. And this grammatical ambiguity is a mirror of the reality of competitive interdependence, that is, a relationship involving both dependence and independence.

Another way to express this ambivalent character of competition is to say that it entails mutual or reciprocal influence. In their opposition to one another, competitors' actions are both cause and effect. But does this mutual influence of competitive opposition have a precisely definable character? In order to label any striving as "competitive," need it be the case that those who engage in such endeavour be aware of their competitors' opposition to them, or can the process of competition be an unconscious struggle in which cause and effect operate, but in which the participants are unaware both of their opponents' identities and of the very process itself? That is, can we say of such striving, which is so diffuse and impersonal, almost accidental in the underlying opposition it entails, that it is properly "competitive" in nature?

These semantic qualities of vagueness at the edges, ambiguity in its central meaning, and ambivalence in its essence, all derive from the fact that competition is a very complex abstraction, even as ordinary abstractions go, because it is built up from at least four simpler abstractions: striving, plurality, relatedness and opposition.

From this semantic analysis, I shall distil four major themes which will recur throughout the historical narrative. These should be firmly implanted in the reader's mind from the outset, and for convenience of future reference I shall enumerate them here in a concise form and in bold letters. They overlap one another to some extent, but are usefully identified as separate themes.

Theme I. Competition is both freeing and compelling (or constraining) in its effects. This is so because competition consists of both the force of striving and the resistance of opposition, that is, both the exercise of free will and the clash of opposing free wills. To wit, when a seller in competition with others develops a more efficient method of producing his output and subsequently lowers his price offered to buyers, not only does he enhance the freedom of himself and of buyers (by widening both his and their range of alternatives), he also compels his competitors to revise their behaviour by narrowing their range of alternatives vis-à-vis their former customers.

Theme II. Competition can be both equilibrating and disequilibrating in tendency. This is so because competitive striving may consist of both the striving to conform, equal or measure up to given standards, and the striving to surpass or excel those given standards. Competition may involve both the initiation of changes (eg. innovation of new products or processes) and the adaptation to previous changes (eg. competitors imitating or copying the innovators). Thus, it may be either stabilizing or de-stabilizing, or both.

Theme III. The abstract meaning of competition, taken from common usage and applied to the economic sphere, is open-ended and hence indeterminate with respect to the nature of competitive grouping, the nature of the economic objective pursued, of the strategies or behavioural patterns followed, and of

the arena or setting in which it takes place. Thus, competition may be sharply focussed as regards the identity of the competitive units or groups, objectives, setting, etc. (eg. individual buyers and sellers maximising profits in market exchange), but when the complexities of economic interdependence are taken into account - the overlapping of common and conflicting interests and the infinite variety of competitive associations - then the concept of competition becomes far more nebulous and diffuse in its implications.

Theme IV. Competition is an emotively ambivalent term, connoting both positive and negative ideas, which different people respond to in very contrasting ways. For example, the idea of competitive striving can bring to mind the positive connotations of freedom, free will, independence, exhilaration, spontaneity, ingenuity, persistence and self-assertion; whereas, the idea of competitive opposition can bring to mind the negative connotations of conflict, antagonism, and compulsion. But even these emotive overtones can be reversed. Namely, competitive striving may connote zealousness, jealousy, contentiousness, while at the same time competitive opposition can be associated with the maintenance of high standards of efficiency and discipline. Thus it is that throughout the annals of recorded history competition has been praised as a healthy and invigorating stimulus and condemned as a destructive and demoralizing evil.

The four themes listed here could be extended in number and could be elaborated upon at great length. They are left in a somewhat unresolved state at this point, but will be interpreted more decisively at the end of this history.

With the preparatory work completed, let us now turn at last to the story itself.

3. Some Origins of Usage in the Economic Literature

To return to the initial question: When did those who commented upon economics first begin to discuss or even refer to competition?

Even when we adopt the rather narrow criterion of the presence of the word itself, this is a question to which there is no simple or readily

available answer. It requires some choice as to what constitutes economic literature and economic comment properly speaking, as well as a painstakingly thorough search through an enormous amount of rather miscellaneous and often unrelated literature, much of which is not easily accessible.

Philological studies do offer something of a guideline by placing the beginnings of the active sense of the verb, to compete, in or around the 16th century for English, perhaps somewhat sooner than that for French and Italian equivalents.¹ Given the expansive outlook and accelerating pace of life throughout Western Europe during the 15th and 16th centuries, with the discoveries of new markets and trade routes and with commercial progress being fuelled by the influx of Spanish American gold and silver, this seems an appropriate era for our history to begin.

And, indeed, my rather selective sample of 16th century literature does confirm the broad pattern. The earliest instances of the cognates of competition I could find in an economic context fall within the latter half of the 1500s. But in order to appreciate the significance of this fact, we must briefly recount some of the doctrinal and linguistic events leading up to this new manner of phrasing.

Aristotle had apparently coined the term monopoly in his Politics² and had taken the first tentative steps towards the analysis of exchange in his Ethics.³ The Roman jurists built upon his foundations and developed the idea of the iustum pretium or just price, though the one or two documented references to the idea which have been preserved say precious little about the concept itself, let alone anything resembling economic analysis.⁴ It was left

¹The authorities, cited above on page 4, note 1 and page 5, note 2, are rather guarded in their judgements as to when precisely this transition took place, and rightly so, but the various examples they provide do present a broad picture as suggested here.

²Book I, chapter 11.

³Book V, chapters 4 and 5

⁴J.T. Noonan, in his The Scholastic Analysis of Usury, Cambridge, Mass: Harvard University Press, 1957, p.83, states that all the essentials of the Roman contribution to the theory of the just price are contained in three items: the Digesta, 35:2:63 and 36:1:16 as well as the Codex 4:44:2. But see note 1 page 18.

to the medieval scholastic writers, led by St. Thomas, to bring these two streams of thought, the Aristotelian analysis of justice in exchange and the Roman juristic discussion of just price, into more systematic contact with one another.

But the pre-history of competitive doctrine does not begin or end here. The verb, competo, was very frequently used by the Roman jurists (in the legalistic sense of bringing a case or action to court as well as in the neutral sense of being legally competent or suitable, as we have seen earlier). Quite appropriately, the verb even appears in one of the passages dealing with the nature of just price, though of course in its purely legalistic sense.¹ Now, St. Thomas himself did not use the verb in the brief study of just price in his Summa Theologica,² though we can judge how common the verb was by noting that the Index Thomisticus lists 2,426 occurrences of the verb competo and its cognates throughout Thomas's complete works.³

Yet, during the 16th century the connection between competo (as well as concurro) and the concept of just price was to be made. Quite possibly, this was due to Charles DuMoulin (or Molinaeus), an expert on Roman civil law, whose lengthy and subtle defense of the practice of usury, the Tractatus Commerciorum et Usurarum, first appeared in 1546 and abounds in the phraseology of concurro and competo, both in their classic and legal senses.⁴

Here, then, are a few tenuous links with antiquity. But so far I have identified merely the surface appearance of the cognate families of words,

¹ See note 1, page 5 above, for one such example. It is worth noting, though, that in one of the passages referring to the just price (Codex 4:44:8), a brief but graphic description is made of the process of bargaining between an isolated buyer and seller who after "much contention" ("post multas contentiones") arrive at an estimation of the just price (iustum pretium) with "mutual consent" ("propter hoc consensu"). See Corpus Juris Civilis, op. cit., p.179 and translation by Scott, op. cit., p.101.

² Opera Omnia, 16 vols., Rome, 1882 et seq., Vol. IX (1897), Quaestio LXXVII, "DE Fraudulentia Quae Committitur in Emptionibus et Venditionibus," pp.147-54.

³ Index Thomisticus, ed. R. Busa, Rome, 1974, Vol. IV, pp.806-30, 1045-48.

⁴ Carolus Molinaeus, Tractatus Commerciorum, et Usurarum (1546), Paris, 1555, pp.226, 232, 246, 676 and passim. The French translation, Sommaire du livre analytique des contrats, usures, rentes constituées, intérêts et monnoyes, Paris, 1547, went through several editions by the 1560s. DuMoulin also published a long series of treatises on canon law and Roman civil law from 1522 to 1564.

competo and concurro. What is there to say about the substance?

De Roover has stated that "the whole discussion on the just price assumed the existence of competitive conditions," but he adds that "it is strange that the word 'competition' never occurs in scholastic treatises until the end of the sixteenth century," Molina's De Justitia et Jure (1592) being the tract in question.¹ I must quibble with De Roover on both points.

First, as to textual priority, I would be very hesitant in speculating as to who was the first to employ the phraseology of competition in a clearly economic sense, whether in the scholastic or secular literature of the mid-1500s, but certainly this usage pre-dates Molina. De Soto's De Justitia et Jure (1553) contains among others this: "si omnes ad primos venditores concurrerent, minoris emerent."² But what exactly did De Soto mean? To answer this, let us turn to De Roover's initial point that the theories of just price assumed competitive conditions. This is an allegation which many students of the scholastic doctrine have shared,³ and it is one which warrants careful and cautious interpreting.

It seems quite ludicrous to attribute to medieval scholars what amounts to a competitive ethic, and yet this is what happens when the medieval condemnation of monopoly is set alongside the doctrine of the just price with little attention to the underlying essence of the case. Monopoly was widely condemned through the Middle Ages for economic reasons which are now familiar, the restricting of output to artificially raise price which it usually entailed,⁴

¹Raymond De Roover, "The Concept of the Just Price: Theory and Economic Policy," Journal of Economic History, vol. XVIII, no.4, 1958, p.425. See also his article, "Scholastic Economics," Quarterly Journal of Economics, vol. LXIX, no.2, May 1955, p.169 and n.4 for Molina's text

²D. de Soto, De Justitia et Jure (1553), Antwerp, 1568, p.194b, emphasis added.

³Schumpeter probably started this erroneous belief with his argument that St. Thomas's appeal to the "public's evaluation" could "only mean normal competitive price." History of Economic Analysis, New York: Oxford University Press, 1954, p.93. Gordon goes even further by attributing to Lessius (1605) the very definition, no less, of "perfect competition" itself (op. cit., pp.275, 259-60)

⁴Noonan, op. cit., p.88n19, cites passages to this effect from the medieval scholastic writers, Scotus, Gerson, St. Bernadine and St. Antoninus.

and the scholastic writers objected to monopoly for its arbitrariness and the "iniquity" or inequality it led to in the process of economic exchange, following the lines of Aristotle's analysis of justice.

By contrast, the central appeal of leaving large numbers of buyers and sellers free to set their own price amongst themselves, traditionally, was the very lack of arbitrariness or the absence of any one individual's influence and capriciousness.¹ In the Scholastic tradition, this became solidified in the notion of the common estimate, or communis aestimatio, of the value of things, or in other words of their just price.

What is essential here is that neither Aristotle, nor the Roman jurists, nor the early scholastic writers directly identified competition as the concomitant of the just price, because they were not concerned as scientists with the explanation of market behaviour so much as they were anxious as ethical theorists to lay down the rules of justice in exchange. For them, a common estimate meant principally a consensus or agreement and not a competition among buyers and sellers. Perhaps had they looked further beyond the mere result of a common estimate to the process whereby this result was reached, then they may have recognized and commented upon the significance of competition in market exchange. But, they did not, at least, not before the mid-1500s.

The phraseology of concurro in the mid-1500s brings us to that transitional stage when writers no longer employed the verb in a neuter or impersonal sense, but probably had in mind (as in the case of De Soto, cited above) something literally approaching our modern sense of competing as a sort of "running together or concurrently," with more than a faint suggestion of a genuinely competitive opposition or struggle floating about.

This subtle transition accompanies another development of later scholastic thought. Writing in the much slower pace of the 1200s, St. Thomas had ascribed to the concept of the just price a rather austere and rigid character whereby it reflected the inherent capacity of economic goods to

¹The key passage in the Roman civil law reads: "Pretia rerum non ex affectu nec utilitate singulorum, sed communiter funguntur." (Corpus Juris Civilis, Vol. I, Justiniani Digesta, ed. T. Mommsen, Berlin, 1878, p.514, 35:2:63).

satisfy human needs and hence was thought to vary little with external circumstances, and from one time or place to another.¹ After a long period of slow development, scholastic thought began to be revived in Spain during her "Golden Century," new works emanating from the so-called school of Salamanca founded by Vitoria. Though Vitoria's major treatise, the Comentarios (1535) on St. Thomas's Summa, adds very little to the doctrine itself, it opened the way for a whole series of new tracts on economic affairs during the expansionary decades of the 1540s and 1550s.²

Luis Saravia de la Calle's Instrucción de mercaderes (1544) sounds a new note when it emphasizes the variability of prices according to the numbers of buyers and sellers as well as to the abundance or scarcity of money, and this theme is repeated and elaborated in a series of tracts including those by De Soto himself (1553), Navarro (1556), Mercado (1569) and Garcia (1583).³ Out of this literature, a very primitive but distinctly recognizable law of supply and demand features prominently. De Soto expressed it very concisely as follows:

... Mercium pretia, emptorum copia augetur, penuria verò minuntur. Sicutie conversò abundantia venditorum minuntur raritate verò, excrescunt. ("Prices rise when buyers are numerous and fall when they are scarce. Likewise, prices fall when sellers are numerous and rise when they are scarce.")⁴

In all probability, this simple thought had been entertained by many long before the Spanish scholastics and probably finds expression somewhere buried deep in antiquity, but the important point to acknowledge here is that it was out of this intellectual stream of thought that economic writers began to

¹Noonan, op. cit., p.85.

²Francisco de Vitoria, Comentarios a la Secunda secundae de Santo Tomas (1535), ed. R.P. de Heredia, 6 vols., Salamanca, 1932-52, especially Vol. IV, pp.116-30. A useful, if brief, account of the Spanish literature is M. Grice-Hutchinson's The School of Salamanca, Oxford: Clarendon Press, 1952.

³Grice-Hutchinson, op. cit., pp.79-119, contains short selections translated from the Spanish and Latin texts of these and a few other authors from 1544 to 1605.

⁴De Soto, op. cit., p.196a and Grice-Hutchinson, op. cit., p.86.

associate the cognates of concurro (and, to a lesser extent, competo) with its now familiar economic contexts. De Soto's incidental use of "concurrerent" was cited earlier, and by 1593 Luis de Molina had carried this usage one step further by actually incorporating the explicit idea into his simple formulation of the law of supply and demand:

... Multitudo emptorum concurrentium plus uno tempore, q alio, & maiori aviditate, facit pretium accrescere: emptorum vero raritas facit illud decrescere.¹

However, the Spanish scholastic tradition had already begun to slide into a decline towards the end of the 16th century as Spain's ascendancy in Europe gave way to the more progressive economies of France, England, the United Provinces of the Low Countries, the Italian city-states and the German towns of the Rhine district. And, by the turn of the century, even the best of the late scholastic treatises was written by a non-Spaniard, namely, the Dutchman Leonard de Leys (or Lessius) whose De Justitia et Jure (1605) contains a wealth of empirical knowledge of markets combined with a considerable amount of theoretical analysis sprinkled with many allusions to market competition.²

However, the scholastic tradition was a spent force by the 1600s, giving way to a backward-looking casuistry from which it did not recover. The initiative in economic discussion was passing to those who were less able and less intent upon writing long and arid textbooks and more anxious to argue for economic policies favourable to their own practical concerns. In a word, scholasticism was being replaced by mercantilism.

¹Luis de Molina, De Justitia et Jure (1592-1600), 6 vols., ^{Mainz}Moguntia, 1614, Vol. I, tome II, disp.348, num.4, col.395.

²Leonardus Lessius, De Justitia et Jure (1605), Paris, 1606, especially chapter XXI, "De Emptione et Venditione," pp.251-71. For page references and selected translations illustrating Lessius's alleged "definition" of perfect competition, see Gordon, op. cit., pp.259-60. Lessius makes occasional use of concurro and competo (see, for example, pp.254, 261), but I have not yet been able to find any sharp delineation of the concept of competition in his text. He does, of course, give expression to the simple concepts of supply and demand and their effects on price, already a traditional feature in scholastic treatises by 1605.

We would be mistaken, though, to erect some sharp dividing line between the two traditions, or to overlook the positive influence that the former had on the latter school of thought. Through the decades of the 1560s to 1580s, inflation, high rates of interest or usury, and the manipulation of national currencies became the dominant issues in this new and more secularized form of economic debate. From a small sample of the leading works in this literature, those by Bodin and Malestroict in France, Wilson and Hales in England, Davanzati and Serra in Italy,¹ I was unable to find any direct reference to the idea of competition, though doubtless a more thorough search would produce a few such examples.

On a somewhat broader front, the writings of the Italian, Giovanni Botero, will illustrate how the phraseology of competition was beginning to be assimilated into general discussions of economic affairs. In his Delle Cause della Grandezza delle Citta (1588), Botero makes one or two passing references to "la concorrenza e l'emulatione" between great cities in their efforts to construct attractive sites for "Faires, and Marts, and the Infinite concourse of Merchants," while in his Della Ragion di Stato (1589) a short section is devoted to the advantages of "l'emulatione e la concorrenza" amongst soldiers as a source of military excellence.²

¹Malestroict, Les Paradoxes du Seigneur de Malestroict, Paris, 1568; Jean Bodin, La Responce de Maistre Jean Bodin, Paris, 1568, and Discours de Jean Bodin sur le Rehaussement et Diminution des monnoyes, Paris, 1578; John Hales, A Briefe Concept of English Policy, London, 1581, new edition as A Discourse of the Common Weal of this Realm of England, ed. E. Lamond, Cambridge, 1893; Thomas Wilson, A Discourse upon Usury (1572), ed. R.H. Tawney, London, 1925; Gasparo Scaruffi, Discorso sopra le monete (1582), ed. B. Custodi, Milan, 1802; Bernardo Davanzati, Notizia de' Cambi (1588), ed. B. Custodi, Milan, 1804, English translation by John Toland as A Discourse upon Coins, London, 1696; also Davanzati's Lezione delle Monete (1588), ed. B. Custodi, Milan, 1804; and Antonio Serra, Breve Trattato Delle Cause Che Possono Far Abbondare (1613), ed. B. Custodi, Milan, 1803, selections translated in A. E. Monroe's Early Economic Thought, Cambridge, Mass., 1924, pp.145-167. Unfortunately, I was unable to consult the many pamphlets of Barthelemy de Laffemas from 1596 to 1609, several of which have very intriguing titles.

²Giovanni Botero, Delle Cause della Grandezza, e Magnificenza delle Città (1588), Venice, 1589, pp.340-2, and passim; The Cause of the Greatnesse of Cities, by John Botero, translated by T.H. (T. Hawkins?), London, 1635, pp.94-5; and Della Ragion di Stato, Venice, 1589, pp.261-3. See also Robert Peterson's 1606 translation of Delle Città which is included with the new translation, The Reason of State and The Greatness of Cities, by D. P. Waley, London: Routledge and Kegan Paul, 1956.

Botero was not a skilled theorist, and his graphic descriptions far outshine some passing observations he makes of an economic character on such things as the growth of population and industry, but his rather loose association of these with competitive themes is itself a significant indicator of the drift of things to come.

So too was John Wheeler's Treatise of Commerce (1601), the first English work which I have been able to find which employs a cognate of competition in a demonstrable economic context, though the cognates of competition and rivalry were very much in use in English during the latter two decades of the 16th century as we may gather from their very liberal use throughout the works of Shakespeare.¹ In arguing the case of his own Merchant-Adventurers' Company, Wheeler alludes in passing to the "Townes of the united low Countreys, eleven or twelve in number of the best situate, each striving to be preferred, like so many Rivals or Competitors," in the efforts to corner the trade of North-East Europe.²

It should be carefully noted that both Botero and Wheeler refer to the concept of competition, in an economic context, in inter-municipal terms, that is, to cities or city-states striving with one another for domination. Thus, even though the scholastic writers had established the use of concurro in the analysis of market exchange between individual merchants, this context can claim no exclusive or a priori hold upon the concept of competition, a fact which the literature of the 17th century was to amply demonstrate.

An appropriate writer with whom to end this survey is Antoyne de Montchrétien whose Traicté de l'Oeconomie politique (1615) provides another bridge between late medieval and early modern thinking. Montchrétien sketches a thoroughgoing plan of state intervention and control of industry which, underwittingly, stands as a blue-print for the economic policies put into practice

¹Alexander Schmidt's Shakespeare-Lexicon, 2 vols., Berlin, 1902, lists no less than nine competitor's in the complete works (Vol. I, p.226), as well as numerous occurrences of the cognates of rivalry and emulation.

²John Wheeler, A Treatise of Commerce, London, 1601, p.19.

by Colbert later in the century. But Montchrétien's interventionist attitude does not prevent him from recognizing advantages to the state from active competition in the sphere of private industry. In two very brief passages, he neatly puts his finger on several competitive themes which were to become a recurrent part of 18th century thought.

At one point, he appeals to "ceste emulation et envie de bien faire, sans laquelle l'action demeure toujours lasche et molle,"¹ and in another passage he elaborates upon this dual role of competition as a source of both progress and efficiency:-

... L'aemulation est en toute chose un grand aiguillon à bien faire. Par elle les hommes peuvent monter à la perfection de tous arts. Il n'y a point de plus court moyen pour faire tost gagner le haut comble à ceux qui les exercent que de les commettre en concurrence d'industrie comme en la poudre d'une lutte d'honneur et de prix. Cela les oblige à prendre à soy de plus près à considerer circonspectement tout ce qui leur servir à faciliter leur art, et ordonner mieux leur travail.²

The foregoing survey and fragments from the economic literature of the 16th and early 17th centuries would be very misleading if it created the impression that there was any sustained discussion of competitive ideas during this period. There was not anything of the kind. Direct and explicit references to competition are extremely rare, and they certainly do not amount to anything even approximating a conscious recognition of it as a principle of economic thought.

What we do find are some vague hints of classical thought to come by the end of the 18th century, and some quite clear statements of doctrine, concerning supply and demand, which would eventually become part and parcel of competitive economic theory. But wild statements attributing all sorts of anticipations of, say, the theory of perfect competition to these pioneering works are quite unjustified.

It is difficult to speculate just how scholastic analysis might

¹Antoyne de Montchrétien, Traicté de l'OEconomie Politique (1615), ed. Th. Funck-Brentano, Paris, 1889, p.118.

²ibid, p.37.

have proceeded had it been freed from its theological past, but as it happens, the tradition quickly faded in the 17th century and we must look elsewhere for the continuation of economic analysis.

4. The Economic Calculus (I) - Nations, Companies and Individuals

A major change in focus takes place as we leave the 16th century and move into the 17th. The scholastic literature on just price dealt mainly with the problem of exchange between individual merchants within the medieval context of trade fairs. The mercantilist literature of the 1600s cast up the problem of economic exchange in terms of trade between nations within the early modern context of the emerging nation-states of Western-Europe.

In part, this change in focus reflected the shifting of economic power away from the Central and Southern regions of Germany, Italy and Spain, towards the North-East seaboard countries of England, France and Holland; and, in part, it reflected the rising importance of certain institutions designed to accommodate the needs of world trade: the incorporating of merchants into large trading companies and the growing use of precious metals to finance their trade.

With specie in short supply and rather unstable in its flow from Spanish America through the markets of Europe to towards the Far East, economic debate began to delve into the problems of commercial policy, international trade, and the regulation of national currencies: the late medieval concern with usury and inflation gave way to the early modern concern with the "balance of trade." These new aspects of economic thought bulk large when we come to consider how writers of the 17th century conceived of the idea of economic competition.

Now, the Economic Calculus is the method of identifying the categories of economic cost and benefit, or of gain and loss, or in broadest terms of advantage and disadvantage pertaining to any course of action, and of quantifying these pros and cons so that a decision can be arrived at by weighing up the balance.

In working through the economic calculus in its social applications, we inevitably encounter the concepts of competitive interdependence and interaction. In doing so, we have to conceive of and label the relevant competitive groupings as units for analysis and the frame of reference to which they apply. This involves the study of both common and conflicting interests between separate individuals in their relations to one another.

The rise of the nation-state brought not only the more centralized forms of economic institution but also the growing awareness and perception of the qualities of national identity and of national unity. To make this possible, the complementary idea of national rivalry either had to be a fact or had to be invented to suit the purposes and aims of nation builders, for the threat of external danger to the state was one means of strengthening its institutions of internal cohesion.

It was in this context that the status of the incorporated company, a medieval form of business organization which had risen to prominence as a response to the new pattern of overseas trade, came to be scrutinized as an instrument of national economic policy. Initially set up to overcome the huge financial hurdles of raising large sums of capital for risky ventures, and vested with special powers and privileges by the governments which created them, they often proved to be a lucrative source of public revenue to those selfsame central governments, but as time wore on their status as "monopolies" with monopoly power both at home and in markets abroad became more and more the central issue under discussion.

The pattern of events just described applies most readily to the English experience, with the beginnings of the great monopoly debate in the Houses of Parliament dating from 1597 and with recurring debates through to the mid-18th century, but the underlying issues were by no means confined in their application to England alone. Similar events and discussions took place throughout Europe, even if not so openly or so vigorously as in England itself.

However, the summary to follow in the remainder of this chapter will be confined almost exclusively to the English literature. This is so, not

only because it is the most readily available, but also because it is the most robust and offers the most sustained treatment of competitive themes, in contrast to the other currents of thought in Europe which are either surprisingly thin or else touch very little upon our subject.¹ And, most important of all, with the aid of historical hindsight, we can judge "in advance" that the English literature was to prove the most influential in shaping the thought of the next century.

On the whole, the English mercantilist tracts of the 17th century have surprisingly little to say directly and explicitly about competition in the classical manner of market exchange between individual buyers and sellers and of the effects of their bargaining behaviour on prices. Yet, their work does teem with the imagery of competition and their allusions to it can only be understood with reference to the theme of national rivalry and to the debate on monopoly. That extended debate constitutes a subject worthy of lengthy historical study by itself, and I will not attempt to sketch anything like a detailed narrative of events but will only extract those portions of the debate which throw light on their conception of the competitive process. To do this, a broad division of the century into three major periods will be useful.

During the first period, from the late 1500s to the 1640s, the status

¹ Amazingly enough, Montchrétien's Traicté of 1615 engendered almost no economic publications in reply, until the 1690s. For this impression of French 17th century economic literature, I have relied heavily upon the scholarship of C.W. Cole: Colbert and a Century of French Mercantilism (1939), French Mercantilism 1683-1700 (1943), and French Mercantilist Doctrines before Colbert (1931).

All the secondary sources I have consulted convey the uniform impression that economic writing in Spain, Portugal and Italy - so vigorous in the 16th century - quickly faded in the early 1600s, experiencing their short-lived renaissance during the mid-1700s. The Dutch produced a number of interesting works during the 1600s (by Grotius, Graswinkel, Usselinck) but, as far as I know, the Dutch literature is still largely unresearched. See M. Blaug, Economic Theory in Retrospect, 2nd ed., London: Heinemann, 1968, p.34.

The German cameralist literature of the 1600s touches on economic subjects, but my knowledge of this body of thought is rather scanty, limited largely to A.W. Small's survey, The Cameralists, Chicago 1909, which is not especially reliable as a guide to my topic. J.J. Becher (Politische Discurs, Frankfurt, 1668) had some interesting things to say about industrial structure, in terms of "monopolio," "polypolio," and "propolio," and other items are likely to be found of this nature in the many works of Schröder, Hornick, Seckendorff et al.

of the Company of Merchant-Adventurers became the chief focal point for debate,¹ though the newly founded East India Company began to meet resistance at home by the 1620s as well.² The second or interim period, from the mid-1640s to the 1660s, saw a slackening in the debate itself, due no doubt to the civil strife which took attention away from commercial affairs abroad, but these years also witnessed important inroads made against the "classical" mercantilist doctrines formulated in the 1620s, as we shall see in a moment.

With peace at home restored in the main, the third period extending from the 1670s to the 1690s brought a renewed attack upon the East India Company and other alleged "monopolies," and this strong challenge resulted in an enormous outflow of economic tracts, both by individuals and companies alike, during the decade of the 1690s - one of the most exciting decades in the history of economic thought for the flood of new ideas it produced.³

Let us turn initially, then, to the first period for the origins of

¹ Attacks upon the company were made by Thomas Milles (The Customers Apologie, London, 1601; The Customers Replie, London, 1604; and The Customers Alphabet and Primer, London, 1608) and by Gerard De Malynes (The Maintenance of Free Trade, London, 1622; and The Center of the Circle of Commerce, London, 1623), and later by a very incisive pamphlet by a group of rival merchants, A Discourse of Motives for the Enlargement and Freedome of Trade, London: Na. Brent, 1645. To the defense came respectively: John Wheeler, op. cit.; Edward Misselden (Free Trade, London, 1622, 2nd. ed., 1622; The Circle of Commerce, London, 1623), and Henry Parker, Of a Free Trade, London, 1648.

² Aside from Malynes (op. cit., 1622, 1623), the anonymous "I.R." (Robert Kayll?) raised some objections in The Trades Increase, London, 1615, which were met by Sir Dudley Digges' The Defense of Trade, London, 1615. In addition to the defense by Misselden (op. cit., 1623), were Thomas Mun's Defense of Trade, from England unto the East-Indies, London, 1621 and the latter's Petition and Remon- stance, London, 1628, upon behalf of the company. Mun's classic, England's Treasure by Forraign Trade, London, 1664, was written circa 1630. Also very defensive of the monopoly position in the 1640s and early 1650s were Lewes Roberts and Henry Robinson whose principal works are given below on page 32 note 3

³ The important treatises from 1670 to the 1690s are too numerous to list here, but it might be worth indicating here that prominent amongst the apologias of the East-India Company's monopoly were works by Papillon (1677), Child (1668, 1681, 1690, 1693), and Davenant (1695-1699). Spirited attacks were made by Coke (1670), Cary (1695), Pollexfen (1697), supported by a long line of equally cogent anonymous writers. Somewhat more subdued in their liberal outlook and detached scientific objectivity were writers like Barbon (1690), North (1691), and even John Locke (1690-1696) by comparison with the more committed writers. For details of these works, see the main text to follow.

the mercantilist doctrine. At the very heart of the matter is their claim that overseas trading companies act as agents on behalf of the state for the furtherance of national gain, or as Wheeler put it, "for the honour and service of the Prince and State."¹ Unity amongst England's wool exporters, under the tightly knit organization of the Merchant-Adventurers' Company, would procure for them (and hence for the nation too) the bargaining advantages of monopoly power, though Wheeler does not use the term "monopoly" to describe the company, and his insistence that individual merchants had great freedom within the company's broad guidelines was somewhat equivocal.²

In somewhat different and more trying circumstances, the first generation of spokesmen for the East India Company - Digges, Misselden and Mun - placed less emphasis upon the bargaining advantages of monopoly power with respect to price, but more emphasis upon the need for a united effort to raise large sums of capital to finance costly defense facilities and for procuring favours from the often hostile foreign rulers they had to deal with. In essence, their case was much the same: national advantages of unity in facing external rivals.

The quintessential statement of the mercantilist outlook came in the 1640s in Parker's treatise, Of a Free Trade, notable for its disarming simplicity and engaging frankness. "Union among Merchants" would enable the nation to "divert a trade" to its advantage, and because the interests of all the nation's merchants are "so intertwined" with one another, Parker concluded that "the benefit of the English Merchant is to be regarded as the benefit of the English Nation." Furthermore, since the Company of Merchant-Adventurers "best understands its own interest, so neither has it, or can it, have any interest, but such as is consistent with the interest of the State."³

¹Wheeler, op. cit., p.108.

²ibid, pp.101-02 where he firmly denies the charge of monopoly, insisting that those belonging to the Merchant-Adventurers can buy and sell "at their libertie and pleasure," in stark contradiction to his arguments on pp.54-58.

³Parker, op. cit., pp.12-13 and p.22.

Thus, underlying the mercantilist doctrine was this essential argument: The unity offered by monopoly organization combined with the enlightened pursuit of self-interest is also in the national self-interest. In other words, the idea of monopoly power (if not the word itself) is interpreted in such a way as to be an integral part of a national competitive strategy!

Parker soon ran into difficulties when he attempted to apply this rationale to his economic calculus of national gain. How could he reconcile the monopolist's confessed purpose of creating artificial scarcity to raise prices and profits from abroad with domestic manufacturers' desire to expand their exportable outputs? Having considered this dilemma, Parker concluded that the "twisting" together of all the separate interests within the nation would show that the merchants' gain from monopoly power abroad was "more compliant with the publick" and "the generall interest of the State" than were the successes of manufacturers at home.¹ Parker's conclusion rested, of course, on the balance-of-trade theory which will be discussed in the following section.

With these logical and conceptual underpinnings, what did the mercantile theorists actually say, directly and explicitly, about the nature and effects of competition? As a matter of fact, the word competition as well as its cognates and synonyms (such as rivalry and emulation) are of very rare occurrence in the literature before the 1680s, though the phraseology of "striving," "envy," "jealousy," "rivalship," and "emulation" was beginning to become common by the 1640s.

Nevertheless, the few textual indications we can find do support the general impression that mercantilist writers portrayed economic competition as a form of national conflict. That is to say, competition is subtly presented in such a way as to emphasize its nationalistic and conflictual aspects. To cite two of the very rare instances before the 1640s, T. Gentlemen refers to the "emulation" between Dutch and English fishermen in the North Sea,² while Hun

¹ ibid., pp.30-31.

² T. Gentleman, England's Way to Win Wealth, London, 1614, p.23.

wrote at length of the relations between the Dutch and English East India companies, stating at one point that "wee onely are their Corrivalls."¹ By the 1640s, Parker refers to both "Forrein Nations" and "forrein Merchants" in the same paragraph as "emulous hostile neighbours"² and one could cite many similar allusions to the nationalist and conflictual character given to competition in the vigorous pamphlets of the 1640s, 1650s and 1660s, by men such as Roberts, Robinson, Violet, Lambe and L'Estrange.³

There are many good reasons to explain this dual emphasis. In truth, national rivalry was very much a reality throughout the 16th and 17th centuries, often waged as a bitter struggle, though on some occasions pamphleteers may have wanted to exaggerate the rigours of competition they faced abroad in order to protect their position at home. Quite apart from motives, though, there is a more broadly based reason which in many respects still applies today and which Sir Josiah Child enunciated very clearly in 1681: Wealth and power, he wrote, "consists in Comparisons," and "England may be said to be rich or strong, as our strength or Riches bears a proportion with our Neighbour Nations, French, Dutch, &c., and consequently whatever weakens or depopulates them, enricheth and strengtheneth England."⁴

An equally easy question to answer is why the writers of the 17th century paid so little attention to the idea of competition in and of itself and why they did not set it out in sharp relief as an important principle. Quite simply, the economic writers of the 1600s were, almost to the last man, practical men of affairs concerned with practical problems. In marked contrast with the

¹Mun, Petition and Remonstrance (1628), p.25.

²Parker, op. cit., pp.4-5.

³Lewis Roberts, The Treasure of Traffike, London, 1641; Henry Robinson, England's Safety in Trades Encrease, London, 1641; Briefe Considerations concerning the Advancement of Trade and Navigation, London, 1649; and Certain Proposalls in order to the Peoples Freedome and Accommodation, London, 1652; Thomas Violet, The Advancement of Merchandize, London, 1651; Samuel Lambe, Seasonable Observations, London, 1657; and Roger L'Estrange's preface to his translation of a work by the Frenchman, F. Charpentier, A Treatise Touching the East-India Trade, London, 1664.

⁴Sir J. Child, A Treatise Concerning the East India Trade, London, 1681, p.7.

scholastic fathers of the previous century, they were not trying to compose lengthy and arid theoretical treatises, and were thus far less likely to seize upon abstractions for their own sake. The pamphlets they wrote were intended to advance specific causes, and in the ongoing whirl of practical affairs, these writers reflected the reality of 17th century competitive life from their first-hand experience, without explicitly identifying the very process of competition of which they themselves were the active participants.

However, it is through the years of civil unrest (1640s-1660s) when the spotlight on economic affairs was turned away from international trade to domestic activity that we can perceive the first signs of new modes of thought which would lead ultimately to the overturn of the mercantilist outlook. On the one hand, new empirical studies by men such as Petty, Graunt and Fortrey were being undertaken, studies which were to have the effect of undermining the old mercantilist calculus of national gain by the balance-of-trade theory, a subject to which I turn in the next section.

More relevant to this history, though, is another development originating in the 1650s: a weakening of the "nationalist" conception of competition. Here, Thomas Hobbes' masterpiece of political theory, Leviathan, strikes a new note of economic individualism which would require many decades to have its full effect but which proved to be immensely influential nonetheless.

The principal flaw in the mercantilist argument was the fudging of the issue as to how the economic gains from monopoly power exercised abroad could be said to redound to everyone's advantage at home, if that same monopoly power was exercised in domestic markets as well. Even though Hobbes had little economic theory to advance, he does succeed within the space of a single page to sum up the essence of the monopoly debate, with the respect to the advantages it brings both in foreign and domestic markets, and he does this by sharply and incisively distinguishing between private and public gain.¹

¹Thomas Hobbes, Leviathan (1651), p.120. I am citing from the 1651 text as given (with original page numbers) in the paperback edition by C.B. McPherson, London: Pelican Classics, 1968.

But far more important was Hobbes' argument for the need of a strong central government, not to direct economic affairs, but to play the role of protector of individual property rights, that is, to support economic individualism. His analysis of both political and economic behaviour is studded throughout with his highly individualistic state of nature, the hypothetical "Warre of every man against every man" which it is the role of the state to subdue and to channel into mutually productive patterns of effort by ensuring the observance of civil conduct and order. And, sure enough, the idea and the word, competition, is used to introduce this recurrent image of interpersonal conflict,¹ richly supplemented by the phraseology of "contention," "rivalry," "imitation," "ambition," "mutuall envy" and so on. Finally, on the half-dozen or so occasions that the word competition arises in his text, it is depicted both in the broadly political sense of striving after "power," "office" and "dignitie" as well as for the more clearly economic ends of "wealth," "riches" and "gain."² Needless to say, Hobbes sees competition very much in a conflictual light.

The first evident signs of Hobbes' influence in introducing an individualist perspective into the economic literature were to come only by the 1670s, when attention was once more turned to the sphere of international trade and commercial policy. Roger Coke was perhaps the first to reflect this new and fresh outlook when, in citing the advances made by the Dutch, he took note of the advantages of "multitudes of people concurring in Trade an emulation of excelling one another ... whereby every man endeavours to excel the other."³ However, it must be said that the transition away from the nationalist towards the individualist outlook was a slow and subtle process; the former connotations of national rivalry lingered on well into the 18th century and even those who, like Coke, pointed forward to the economic individualism of the 18th century still tended to retain the more traditional modes of thought as well.

¹ ibid., pp.47-8 and 61-2.

² ibid., pp.28, 47-8, 61, 86, 395.

³ Roger Coke, A Discourse of Trade, London, 1670, p.55.

To illustrate the fact that there was no sharp or sudden conversion from one pattern of thought to another, one can point to individualist hints in writers who were, on the whole, quite vigorous defendents of an essentially mercantilist position. Thus, Papillon would intersperse numerous references to individualized striving in amongst his more predominantly traditional allusions to the actions of "other Nations, our Competitors."¹ Special mention could be made in this respect to the anonymous pamphlet, Britannia Languens, which quite literally abounds in references to both individual and national competition.²

Thus, by the 1690s, a very firm linkage had been made between the phrase, "multitudes of traders," and the imagery of competition and freedom. An ambiguity often arises when writers of this period make mention of "the Dutch our Rivals," since they seem to be entertaining an idea or concept of competition which points to highly individualized behaviour qualified with nationalistic overtones. The real significance in this subtle shift will be seen in the section to follow, where its effects on the economic calculus itself come under study.

5. The Economic Calculus (II) - Freedom, Efficiency and Progress

The study of the economic calculus, understood in the broadest sense, requires not only the perception and choice of some behavioural unit of analysis, whether that be single individuals or groups of individuals acting as a concerted unit, but also entails the selection of economic units to measure gain and loss, or costs and benefits, in the weighing up of various alternative courses of action.

Now, the medieval merchant, conducting his affairs in the context of a monetary economy, had long ago realized that the pursuit of maximum profit meant buying cheap and selling dear,³ profits being the excess of revenues over expenditures. The merchant's activity of buying finished goods in one market,

¹Thomas Papillon, The East-India Trade, London, 1677, pp.15-18.

²Anon., Britannia Languens, London, 1680, pp.34-5, 38-9, 94, 97, 126, 212, ("National Contests, between Nations, emulous in Trade"), and passim. This very remarkable work was reprinted by J.R. McCulloch, in Early English Tracts on Commerce (1856), Cambridge: University Press, 1970, with 1680 pagination.

³Even the 14th century Arab historian, Ibn Khaldūn(1332-1406), said so in his Muqaddimah! See the English translation by F. Rosenthal, New York: Pantheon, 3 vols, 1958, Vol. II, p.297, and J.D.C. Boulakia, "Ibn Khaldūn," Journal of Political Economy, Vol. 79, Sept./Oct., 1971, pp.1105-1118.

transporting them to another, and selling them at a higher price gave rise to the mercantile view of the source of wealth as a mere excess of revenues over expenditures obtained through careful bargaining in the market-place. Merchants were not inclined to see the source of economic wealth in the efficient production of those goods which he merely distributed.

When applied to the level of national affairs, this mercantile outlook on economic wealth quickly gave rise to the so-called balance-of-trade doctrine. The people who advanced this theory did not go quite so far as to make the error of equating money with wealth, but they did clearly leave the impression that the only source of national wealth was through earning a surplus on the balance of its trade with the rest of the world. Given the pattern of trade and the flow of gold and silver through Europe during the 1500s, this doctrine possessed a small element of validity, since specie was scarce and its effects were to stimulate trade and investment.

By the 1600s, the theory lost much of its validity, but lived on in spite of the changing circumstances in world trade. As late as 1677, Papillon gave lucid expression to this point of view when he attacked those who argued for policies to encourage home production. These people had "very little knowledge or understanding of the Kingdom's Interest in Trade," wrote Papillon, because "they look no further than the buying and selling in England," whereas every one who knows "that all buying and selling within the Kingdom from one English-man to another, is but a changing of hands, and doth neither add to, nor diminish the Stock or Riches of the Nation."¹

In effect, the balance-of-trade theory was the individual merchant's own calculus of profit and loss, in terms of monetary flows, writ large for the nation as a whole. It simply took no account of production as a source of wealth. The effect this doctrine had on the way 17th century writers viewed competition was to take right out of focus the productive efforts and expenditures of energy that go into competitive striving, and to give to the notion of market exchange

¹Papillon, op. cit., p.23.

the conflictual character of a "zero-sum game" (as 20th century theorists were to describe it), an idea immortalized by Montaigne's famous Essai XXII of Book I, entitled "Le Profit de l'Un est Damage de l'Autre."¹ The profit of one is the loss of another. It was in this vein, then, that Davenant would write: "All Trades have their Rivals and Concurrants in Profits, who, consequently, are Enemies."² Here, again, we see competition portrayed in negative terms.

However, at the same time that the theme of nationalism was being weakened by Hobbes' political theory, a new wave of economic writers began to revise the older mercantilist perspective on things by their detailed empirical studies into the sources of national wealth. The works of men like Petty, Graunt, and Fortrey began to appear in the 1660s.³ Stressing empirical description, these pioneers of demography and economic statistics were not especially adept theorists, but the very emphasis they gave to land and labour as the sources of wealth helped pave the way for the steady flow of new ideas which began in the 1670s.

In examining this ever exuberant and ever increasing literature through to the 1690s, one must be very sensitive to the gradually changing associations between new and old ideas which these writers sometimes did and sometimes did not make. Otherwise, much of the ensuing literature of the 18th century will make little sense.

Once again, the point of departure must be the debate on monopoly. Through the Middle Ages, monopoly had become a term of such opprobrium, as the cause of scarcity and high prices, that no one by the 17th century would have dared defend his company as a monopoly when this charge had been levelled against it. These who spoke in favour of regulated or incorporated companies of merchants

¹Montaigne, Oeuvres Complètes, eds. A. Thibaudet and M. Rat, Paris: Bibliothèque de la Pléiade, p.105, from the 1st ed. of the Essais (1580).

²Charles Davenant, Discourses on the Publick Revenues, and on the Trade of England, in Two Parts, London, 1698, Part II, Discourse III, p.194.

³For the many works of Petty from 1662 to 1691, and a single work attributed to John Graunt (1676), see The Economic Writings of Sir William Petty, 2 vols., ed. C.H. Hall, Cambridge, 1899. Samuel Fortrey's England's Interest and Improvement, Cambridge, 1663, is reprinted in McCulloch, op. cit., pp.214-250.

were quick to join the familiar chorus of outcries against the evils of monopoly and took great pains to dissociate their own company from the "suspicion," the "ill tincture" and "false slander" of the "name and blame of Monopoly" which was heaped upon them,¹ and they even tried to pin the same charge on their opponents.²

Now, what the critics of monopoly pitted as an alternative to that form of business organization was not the concept of competition, which itself was already part of the mercantilist phraseology of national rivalry, but instead the more appealing phraseology of Freedom and Liberty. Indeed, even the skilful defendent of the overseas trading companies, Edward Misselden, analysed the concept of monopoly as the "restraint of the liberty of Commerce," but not as the absence of competition.³ Thus, throughout the literature of the 17th century, we cannot assume that references to (or even the endorsement of) economic freedom or liberty also implied a reference to competition as well. Freedom and liberty were terms used in many different senses during this century, and often-times in very contrasting ways which could be quite inconsistent with the 18th century phraseology of "free competition."⁴

However, during the 1680s and 1690s, older associations were beginning to loosen up, so that the idea of freedom, in the sense of free and open entry into a market or industry, was slowly being associated with the condition of multiplicity or of "multitudes" of buyers and sellers; similarly, multiplicity was being associated with the terms, competition and emulation. But the direct linkage between freedom and competition had yet to be made, because even by the 1690s, the idea of competition still carried with it all sorts of older negative

¹See Wheeler, op. cit., p.53; Misselden, Free Trade, pp.54-72 passim, and Circle of Commerce, p.62; and Parker, op. cit., pp.21 and 25.

²As does Misselden upon Malynes in Circle of Commerce, pp.66 and 101.

³Misselden, Free Trade, p.57.

⁴The many types of economic freedom which were often indiscriminately confused under the general heading of "free trade" include the following: the freedom to import and export bullion and merchandise; to enter into business on one's own; to enter into a company of regulated merchants; to buy and sell shares in an incorporated company; and so on. Men like Misselden and Child defended economic freedom in general, but defended their special positions all the same.

connotations of national conflict.

Even as scientifically detached a writer as Nicholas Barbon did not go quite so far as to connect freedom with competition, when he observed that "the Market is the best Judge of Value; for by the Concourse of Buyers and Sellers, the Quantity of Wares, and the Occasion for them are Best Known,"¹ an observation which seems to harken back to the communis aestimatio of the scholastic doctors without really identifying competition in its vital role of bringing about the desired result.

But there was another serious undercurrent of change evident by the 1690s which was ultimately to lead towards 18th century liberal thought. This concerned the relationship between competition and economic efficiency. The defendents of the alleged monopolies during the first half of the century had touched upon the idea of efficiency when they unanimously stressed the need for "unity" among individual merchants. This, they argued, made for a "wel-ordered" or "wel-governed" trade, in contrast to what they contemptuously dismissed as a "stragling" or "loose" trade that would result if "young Merchants" were let free to rush forward in world markets for a "rash sale," destroying any monopolistic advantages gained by a united and concerted effort of well-organized companies.² Their's was the discipline not of the open market but of centralized control.

The fact is that the opponents of the major trading companies could do little to undermine this managerial point of view regarding economic efficiency because they lacked a sufficient alternative to the mercantilists' economic calculus. A writer such as Thomas Mille might challenge their "bare and idle pretence of the word Order and orderly Transporting" with his scathingly sarcastic review of their actual performance,³ but this did little to remove the ascendancy of their broad doctrine. For, the mercantilists' notion of efficienc

¹Nicholas Barbon, A Discourse of Trade, London, 1690, p.20.

²Both Wheeler and Parker employ some very colourful language in their desperate efforts to debunk the advantages of economic freedom.

³Thomas Mille^s, The Customers Apologie, p. "D2+1," (folio sheets).

was for the most part confined to the realm of effective market bargaining, and what their opponents required was some alternative calculus which centered upon the idea of efficiency in production, not in exchange.

All in good time, Following the empirical surveys of Petty, Fortrey, et al in mid-century, an interest in productive efficiency began to take hold, and what is more, it was very quickly connected to competitive striving. Examples abound in the pamphlets of the period; only a few will suffice to convey the general impression. The anonymous author of England's Great Happiness (1677) points repeatedly to the stimulating effects of multiple producers upon the variety and progress in the "arts" whereby "every one strives to excel his fellow" and hence drawing out of one another "a new industry to find a foreign Vent." And, their efforts at "under-selling each other" means that "most of them have so much increas'd their quantities, that with less profit they every year spend more, and give their Children better portions." Hence, the clear "advantages of many Traders."¹

In a similar vein, the author of Britannia Languens (1680) argues that an "inevitable Improvement" will result in farming if "industrious numbers" engage in "a kind of competition."² Coke points to the reverse side of this logic when he suggests that where a trade is "circumscribed by the few," people not only work "dearer" but are "careless in working,"³ and Sir Josiah Child noted that the fishermen off the coast of Newfoundland, having beaten out all rivals and thus being "freed from that competition," soon became "lazy."⁴

The combined impact of observations such as these was to prepare the way for a complete overturning of the mercantilist calculus in the 18th century. But why was this not done in the 1690s? That older body of thought, based on the balance-of-trade theory had been effectively challenged, but not successfully

¹Anon. (John Houghton?), England's Great Happiness (1677) as reprinted in McCulloch, op. cit., pp.261-2, 269-70.

²Anon., Britannia Languens, pp.9-00.

³Coke, op. cit., p.55.

⁴Child, A New Discourse of Trade, London, 1693, p.201.

removed, because the more forward-looking writers of this ^{period} - the Lockes, Barbons, and Norths who faintly hinted at liberal ideas - had not yet found all the missing links in the argument. There were still some outstanding hurdles to clear, and one of these hinged on the role of competitive conflict.

Just as their classical liberal successors in the 18th century were to do, the "classical" mercantilists of the early 1600s tried to equate the pursuit of private interest with pursuit of public or national interest, only with a difference: They dealt with private companies acting as agents for the nation in an international contest, not with open and free competition within national markets. The result was a strong suspicion of that "many-headed Monster," Private Interest.¹

To those who had come out against monopolies, "Private Interest" had become nothing more than a euphemism for special pleading in the defense of monopoly positions. Thus, Fortrey gave expression to a widely echoed view that "private advantages are often impediments of publick profit."²

How, then, could freedom and the individual pursuit of private interest be reconciled with the public good? And, if competition was a form of conflict arising out of free enterprise, how could it be reconciled with the desirability of freedom? These were what could be called the classical liberal dilemmas, because they so preoccupied the thought of liberal writers during the 18th century.

We have seen in this chapter not only how the 17th century literature gave rise to these dilemmas but also how the late 17th century literature began to resolve them by breaking down some of the fundamental doctrines which led to them. It remained for the 18th century theorists to complete the process by achieving a new synthesis. This new synthesis would entail not only a fresh interpretation of the economic calculus but also a new and more thoroughgoing assessment of the role of competitive exchange.

¹Both the author of Britannia Languens (p.5) and James Whiston (A Discourse of the Decay of Trade, London, 1693, p.4) make use of this image - "that many-headed Monster Private Interest."

²Fortrey, op. cit., p.3.

What gives the literature of the 1690s its critical edge is the very ironic fact that the principal defendents of monopoly and mercantilism at the end of the century - Papillon, Child and Davenant - were no longer defending a company with net exports, such as was the Company of Merchant-Adventurers, but one which was a net importer of goods and exporter of bullion!¹ Thus, the traditional balance-of-trade doctrine had to be reversed, a fact which produced some curious results.

On the whole, then, economic thought was very much in a state of flux at the turn of the century, a propitious state of affairs with which to usher in the new liberal century of the 1700s.

¹See, in particular, Papillon, op. cit., 23-26; Child, New Discourse (1693), pp.135-63; and, in general, the voluminous writings of Charles Davenant (in The Political and Commercial Works, 5 vols., ed. Sir Charles Whitworth, London, 1771), for their attempts to adapt the older balance-of-trade theory to the needs of their net importing company.

Chapter II

EIGHTEENTH-CENTURY ORIGINS

1. The Legacy of Mercantilism

Most of the economic literature of the 18th century represents an extended reaction against that of the 17th. The transition from the mercantile to the liberal view of the world proceeded slowly and uncertainly throughout the first half of the century. Then, suddenly, economic thought received a great boost in 1748, and the pace of development quickened appreciably during the 1750s. Building to something of an hysterical crescendo in the 1760s with the dogmatic excesses of physiocracy, economic theory reached a new plane of clarity and coherence in 1776 with Adam Smith's classical liberal synthesis.

Before this synthesis could be achieved, three major intellectual hurdles had to be cleared. At the outset, theorists were confronted with the dilemma of reconciling individual economic freedom in the pursuit of self-interest with the more general consideration of the national or public interest at large. In tackling that problem, they were faced with and had to dispose of the second problem, namely, the mercantilist belief that the act of economic exchange in the market was a form of conflict. And that task in turn gave rise to the third: to construct a theory of value to replace the balance-of-trade theory of wealth so that production could take its place alongside exchange in the economic calculus.

Now, the idea of competition is intimately connected with the first two of these issues, and by the 1750s theorists were beginning to seize upon competition as the key to the simultaneous solution of all three.

The opening decade of the 1700s signalled the changes to come, but with a rather unrelated sequence of publications having little in common with one another and in fact exerting very little immediate influence on events over the next thirty years.

The anonymous pamphlet, Considerations on the East-India Trade (1701),

is altogether a remarkable work.¹ For its time, it was quite free of prevailing mercantilist errors concerning the balance of trade and goes a long way towards sketching a new theory of wealth, based upon production, whereby money is viewed as a secondary form (not source) of wealth. Chapter XII, on "Invention of Arts and Engines," elaborates lucidly upon the concept of the division of labour, and even if the terminology more familiar in Adam Smith's day is absent here, we can at least find the celebrated example of pin manufactures mentioned in this early text, and even a few hints of the notion of absolute advantage in trade between nations!²

However, these fragmentary glimpses of the new economic calculus were, by themselves, only suggestive of things to come. Where the pamphlet does strike a firm and clear note is on the very subject of competition itself. Even if the word competition only appears once (in the author's preface), the idea of competition is a theme running throughout the entire work and is expressed by the synonymous term, emulation, which arises about a dozen times.³

In several distinct ways, the Considerations of 1701 advance just a little further beyond the pamphlets of the 1690s in clarifying the beneficial effects of competition upon economic affairs. For one thing, the author fully endorses a "universal Freedom of Trade" but is under no misapprehensions as to the equally important role of competition as a disciplining constraint upon the freedom to enter into a trade. On several occasions, he states that the "more open" a trade is, the "closer driven" it will be. In sharp contrast, he notes that the force of "Necessity and Emulation" is a thing "unknown to a single Company."⁴

¹Considerations on the East-India Trade, London, 1701, as reprinted with original pagination intact by J.R. McCulloch, Early English Tracts on Commerce (1856), Cambridge: University Press, 1970. Authorship of this pamphlet has been ascribed in the past to both Henry Martyn and Sir Dudley North, but the evidence is circumstantial. The pamphlet was reprinted in 1720.

²ibid., pp. 9, 44.

³ibid., pp. iii, v. 11, 12, 13, 14, 18, 20, 22, 42(2), 80.

⁴ibid., pp. 12-15, and 69.

The anonymous author of Considerations also demonstrates a certain technical brilliance by the manner in which he integrates the role of competition as a source of efficiency in his economic calculus. Technical progress flows from a multiplicity of independent producers not simply because of the coercive effects of competition obliging each producer to sell as cheaply as possible, but also because of the stimulating influence that competition has in encouraging each to produce more efficiently, that is, by "procuring things with less" so that they "may abate the price of Manufactures, tho' the Wages of Men should not be abated." Thus, very neatly, he identifies the notion of productivity underlying technical progress: accomplishing the same amount of work but with "fewer Hands."¹

By 1700, efficiency and progress were both already very familiar criteria of economic gain ascribed to competition by theorists in their efforts to construct an economic calculus. In 1701, the author of the Considerations added a third, the criterion of justice, when he argued that under open competition, "every one wou'd have his proper Share of every manufacture."²

In the analysis of international trade, the author doubts the advantages to be gained through the continued exercise of monopoly power in overseas markets, but his ensuing argument for free trade lays stress upon the errors of the balance-of-trade doctrine without trying to reconcile public and private interest. Perhaps the most noteworthy feature of his argument is the manner in which he carefully avoids the two extremes of nationalism and individualism by his choice of terminology. In the East-India trade, it is the "competition (and emulation) of the Companies" that matters in his analysis: an intermediate form of competitive grouping which most other writers had either overlooked or else confused with the extreme of "individual" competition.³

¹ ibid, p. 21.

² ibid, p. 80.

³ The phrase, "emulation of the two Companies," appears seven times (pp. v, 11, 12, 14, 18, 20, 22) and "competition of the two Companies" once (preface, p. iii).

Unfortunately, Considerations on the East-India Trade came after the main political debate for the weakening of the East-India Company had begun to subside. Even though this pamphlet was re-issued under a new title in 1720, it seems to have exerted little evident influence upon events, and thus stands as a rather lonely, if brilliant, footnote to the more celebrated literature of the 1690s.

If this treatise did not pursue the theme of public versus private interest very far, then another altogether different work from the first decade of the new century certainly did. Only the briefest mention will be made here of Bernard Mandeville's satirical poem, The Grumbling Hive, which received little notice when it first appeared in 1705. The second edition of 1714 was re-titled The Fable of the Bees. Much enlarged with a preface and series of lengthy notes, the new edition expanded upon the theme announced in the sub-title, "Private Vices, Publick Benefits."

In a way which was to prove scandalous to his contemporaries, Mandeville adopted a satirical and cynical style to demonstrate how "those very Vices of every Particular Person by skilful Management were made subservient to the Grandeur and worldly Happiness of the whole."¹ In a rather perverse manner, Mandeville was giving expression to the liberal sentiments of his time. Later historians were to see in his work something of an anticipation of Adam Smith's invisible hand,² but what is clearly lacking in The Fable of the Bees is any semblance of a systematic theory. By its author's own admission, the Fable was a "Rhapsody void of Order or Method."³ Mandeville's rather chaotically arranged material does abound in examples of conventional wisdom drawn from the economic as well as social and political spheres, and his vocabulary features prominently such terms as "Ambition," "Envy," "Contention," and "Emulation,"

¹Mandeville, The Fable of the Bees (1714), from the preface, ed. Phillip Harth, London: Pelican, 1970, p. 55.

²In fact, Smith's opinion of Mandeville was on the whole not very appreciative but quite critical. See "Of Licentious Systems," in The Theory of Moral Sentiments London, 1759, pp. 470-89.

³Cited from Barth's introduction, op. cit., p. 10.

all of which vividly depict the ongoing bustle and vitality of his time. Yet, Mandeville does not seize upon the abstract idea of open competition in order to defend his main thesis. And, when his satire finally received its due notice in the 1720s - Bishop Berkeley calling it "the wickedest book that ever was" - the debate it engendered was confined to moral philosophers.¹

Economic content is certainly not lacking in the third and final author to be treated in this section, Pierre le Pesant, Sieur de Boisguillebert.²

Joseph Schumpeter, in one of his many casually magisterial pronouncements, has proclaimed that Boisguillebert had found in competition "the economic principle of order ... quite as clearly as did A. Smith more than half a century later."³ Some careful and detailed study of Boisguillebert's work is necessary in order to separate truth from falsehood in Schumpeter's claim, a claim which is very misleading in respect to both of the authors in question.

By selective misquotation of words and phrases, out of their proper context, one could misconstrue Boisguillebert's Dissertation sur la Nature des Richesses (1707) as a wholesale anticipation of the physiocratic doctrine of wealth, of the laissez-faire philosophy in general, of John Law's theory of money as a "numéraire," of J.B. Say's theory of markets, Bastiat's "harmonies économiques," and even of Walras's theory of general equilibrium. Interpreters sympathetic to Boisguillebert's cause find no difficulty in perceiving the whole structure of The Wealth of Nations contained in the Dissertation, as does his American biographer, Miss Hazel Roberts.⁴

¹Berkeley's comment was from his Alciphron (1732), as cited in James Bonar's Philosophy and Political Economy (1893), London, 3rd ed., 1922, p. 104. Barth, op. cit., pp. 11 et seq, provides a useful background to the moral and economic discussion of Mandeville's work, following the 3rd edition of 1723.

²Throughout, I shall cite from Boisguillebert's collected works as edited by the Institut National D'Etudes Démographiques, Pierre de Boisguilbert, ou La Naissance de l'Economie Politique, 2 vols., Paris, 1966, INED for short.

³Schumpeter, History of Economic Analysis, New York: Oxford University Press, 1954, p. 216.

⁴Hazel van Dyke Roberts, Boisguilbert: Economist of the Reign of Louis XIV, New York, 1935, especially Chapter XVI, pp. 275-320.

Greatly exaggerated, these claims do not bear up well under close scrutiny, but the fact remains that Boisguillebert was in many ways pointing in the direction of things to come. The relevant question is to what extent he does really make an analytical appeal to the concept of competition. The term (i.e. "la concurrence") does appear several times throughout his text, but we must be wary of jumping to preconceived conclusions which are not warranted by the text itself.

In his first two treatises, Le Détail de la France (1695) and Factum de la France (1706), Boisguillebert had set out to challenge the mercantilist view of things, especially in regard to the role of money. Following upon his insistence that money was only a medium of exchange and not a form of wealth, he went on to challenge the still prevailing view that exchange was essentially conflictual in nature. To the contrary, buyers and sellers had an "intérêt solidaire" binding them together, because in the circular flow of wealth the act of exchange reflects "un profit réciproque de toutes les parties," whereby buyers are ultimately sellers and sellers ultimately buyers. Market exchange, according to Boisguillebert, did (or should) entail a "harmonie" amongst all of those who were engaged in economic activity.¹

If this were really the case, why then were economic affairs so often conducted like a "guerre continuelle" (as Boisguillebert described it), and how was this ultimate harmony to be realized in practice? Rather vague answers to these questions are given, but they are very suggestive answers nonetheless.

Boisguillebert, a magistrate of Rouen, the provincial capital of Normandy, expresses all the resentment of his agricultural region against the administrative and financial mismanagement emanating from the centralised Parisian bureaucracy. Like others writing at this time, he tended to blame France's economic woes at the turn of the century on the interventionist policies of Colbert, introduced in the 1660s, and saw the source of instability in the disruptive interferences of a meddling central government.

¹See in particular, Factum de la France, as per INED, pp. 890-96.

The answer was to let Nature and Providence take care of economic problems, "pourvu qu'on laisse faire la nature, c'est-à-dire, qu'on lui donne sa liberté."¹ The kind of liberty Boisguillebert had in mind is not clear, but there is little doubt that he wanted the scope of government in the economic sphere confined to such things as guaranteeing peace and preventing violence.

So far, nothing had been said about competition. The term first crops up, rather unspectacularly, in his Traité des Grains (1707),² wherein he argues strenuously for the freedom to export grain without duty in times of agricultural surpluses, but not for the freedom to import grain during scarcities. As an agrarian reformist, Boisguillebert stands perhaps first in a long line of writers who pushed for selective protection of agriculture under the guise of "Free Trade." The Traité offers little of direct interest to the subject of competition itself, though in this work we find the first references to such things as "équilibre," "balances," and "manque de proportion," or in other words the phraseology of equilibrium which was to be so prominently displayed in his last major work and his crowning achievement, the Dissertation on wealth.

In this, his most abstract study, Boisguillebert sets forth his ideas on proportional prices, or "prix de proportion,"³ that is to say, the unique set of prices for an economy as a whole which will just suffice to balance every merchant's revenues with his expenditures such that no one will incur a loss. And, throughout his discussion of this equilibrium state of affairs, Boisguillebert makes passing references to such familiar ideas of a later day as the "harmonie" and "justice" which is guaranteed by a "droit naturel," all couched again in the

¹ ibid, p. 892. See also note 1 page 50 below.

² Traité de la Nature, Culture, Commerce et Intérêt des Grains, as per INED, p. 872.

³ Dissertation sur la Nature Des Richesses, De l'Argent, et Des Tributs, as per INED, p. 993.

terminology of "laisse faire la nature."¹

Now, as it happens, the French term for competition, "la concurrence," also appears throughout the Dissertation, altogether about ten times if we include the cognates.² To what extent do these textual occurrences, along with the general thrust of Boisguillebert's reasoning, serve to vindicate Schumpeter's judgement that this turn-of-the-century writer had perceived in competition a principle of economic order? The beguiling fact is that as soon as we try to interpret, let alone translate, Boisguillebert's text, we are overwhelmed by the immense difficulty of language.

Boisguillebert's writing style has been described as consisting of inextricable mazes and obscure barbarisms of language and syntax. This constitutes a barrier to understanding as much for the expert French grammarian as for the unwary English reader: Even Talleyrand is reputed to have said of Boisguillebert's published works that language was given to man to disguise his thoughts.³ Anyone who takes the trouble to study the passages in which "la concurrence" and its cognates appear will readily discover the validity of Talleyrand's quip.

In all humility, I shall refrain from citing or attempting to translate any of the passages in question, and beg the interested reader to consult them himself. However, a number of circumstantial aspects about these passages do

¹ibid, pp. 992-4. I should mention in passing that in this thesis I do not undertake to trace the origin and evolution of the phrase "laissez faire." This has already been done, fairly well, by August Oncken in Die Maxime Laissez faire et laissez passer, ihr Ursprung, ihr Werden, Berlin, 1886. See also D.H. Macgregor's chapter, "The Laissez Faire Doctrine," in his Economic Thought and Policy, Oxford, 1949, pp. 54-89. The grammatical subtleties and semantic obscurities of Boisguillebert's use of the subjunctive verb form, "laisse faire la Nature," are much discussed by Roberts, op. cit., pp. 250 et seq, but I must enter a note of skepticism about the mystique that has been built up around the phraseology. The French verbs laisser and faire are two of the most commonly used in that language, and to judge by Montaigne's Essais of the late 16th century, the double verb formation laisser faire was nothing especially new by Boisguillebert's time. See also note 2 page 51 below for the possible influence here of Child and Davenant.

²Dissertation, as per INED, pp. 977(3), 984, 985, 998(2), 1004(2), and 1009.

³Cited in Roberts, op. cit., p. 100.

support the hypothesis that Boisguillebert had merely picked up the term, "la concurrence," as he had found it used in its English equivalent form in the pamphlets of the 1690s and had attributed to it no more general significance than did those works he had consulted and copied.

For one thing, Boisguillebert does not mention competition at all throughout the key pages where we would expect to find it, if indeed he had seen in it the principle of economic order, namely, throughout his discussion of proportional prices and equilibrium. Instead, nearly all ten cognates appear in places where the role of money and its price (or the rate of interest) are under discussion, and very often Boisguillebert seems to be employing the term (though this is usually ambiguous) in an impersonal sense, that is, not to denote the competitive striving of individuals, but the abstract relationship of two or more objectives standing "in competition with" one another. All of ^{these} ~~the~~ factors point to the influence of Sir Josiah Child whose one sole reference to competition in the Discourse about Trade (1690) concerns the rate of interest on money and is used in an impersonal sense: The well-being of the few, Child says, who may suffer from the lowering of the rate of interest, is "not to be named in competition with the common good of the Kingdom."¹

Boisguillebert cites very few of his sources, but the influence of English pamphlets is by no means a far-fetched hypothesis. Rouen is relatively near to the London market, and numerous examples can be given illustrating some very striking similarities between Boisguillebert's choice of phrasing and those to be found in the writings of Child, Davenant, and Sir Dudley North.²

¹Sir Josiah Child, A Discourse about Trade, London, 1690, preface p. 36.

²In general, Child's many references to liberty seem to be echoed by Boisguillebert, and it is quite possible that the phrase, "laisse faire la Nature," was a liberal French translation of Davenant's passage: "Trade is in its Nature Free, finds its own Channel, and best directeth its own Course," and "Governments, in Relation to it, are to take a Providential Care of the Whole, but generally to let Second Causes work their own way," from An Essay on the East India Trade, London, 1696, p. 25. Affinities with North's Discourses are also marked. For example, North writes: "The whole World as to Trade, is but one Nation or People, and therein Nations are as Persons," and again "A Nation in the World, as to Trade, is in all respects like a City in a Kingdom, or a Family in a City," (Discourses upon Trade, London, 1691, preface p. viii and p. 14). In Boisguillebert, we find that an "intérêt solidaire" exists "non seulement d'homme à homme, mais aussi de pays à pays, de province en province, de royaume au royaume," (Factum, as per INED, p. 891).

Even when Boisguillebert touches upon the dynamic aspect of competition as a stimulus to technological change, already a familiar theme by the 1690s, he does so in an incidental manner, almost as an afterthought, and chooses the word émulation rather than concurrence to express the idea, as if he were paraphrasing the similar passage from the Traicté (1615) of his fellow native of Normandy, Antoyne de Monchrétien.¹

Perhaps the feeling of skepticism I have brought to this study of Boisguillebert's contribution is an unwarranted overreaction to Schumpeter's inflated claim. Certainly, Boisguillebert did reveal much independence of mind and subjective originality in much of what he did. Yet, so tempting is it to see modern patterns of thought in older texts, especially when so many of the familiar modes of expression are to be found in them, that it is equally necessary to read those early texts for what they have to say by themselves. Obviously, Boisguillebert was quite alive to the intellectual currents in England and did carry forward some of the new analyses he found in those currents as part of the general reaction to the mercantilist tradition. Like Child, though with very different motives, he argued for greater freedom and less governmental interference.

Yet, on the general subject of market exchange, the central drift of his argument was to the establishment of peace, not open warfare, in the market, and just when we would most expect him to appeal to competition as the guarantor of peace and equilibrium, Boisguillebert turns instead to a rather obscure theological appeal to Nature or Providence. The underlying religious quality to his thought is brought out emphatically when, in imploring merchants to behave themselves and to recognize their common interests, he holds out not the principle of self-interest but the Golden Rule: "la maxime de l'Évangile."² By this

¹ Boisguillebert wrote: "Et cette émulation devenant générale par le désespoir de s'enrichir autrement, tous les arts se perfectionnent, et l'opulence est portée au plus haut point où elle puisse être," (Dissertation, as per INED, p. 987). Compare this with Monchrétien's passage cited above, Chapter I, sect. 3, (page 25.).

² ibid., p. 992.

endorsement of self-restraint, rather than self-assertion, Boisguillebert gave little firm evidence that he saw in competition something vitally important enough to be labelled a principle of economic order.

Thus, from the survey of Mandeville, Boisguillebert and the anonymous pamphleteer of 1701, we can see how many of the individual elements eventually to be incorporated in the classical liberal synthesis had already been uncovered by the first decade of the century and yet how far away that synthesis still stood.

Analysis by itself was not enough. A creative breakthrough beyond mercantilism required that the individual elements be put together in the right combination, and the discovery of the few remaining missing links was a long time yet to come.

2. The Liberal Mercantilist Lull

The half-century extending from 1700 to 1750 can be described as a period of lull. So far as the development of economic thought is concerned, not a great deal happened. It might be called the Great Gap separating classical mercantilism from classical liberalism.

In 1734, the French writer, Jean Francois Melon, unwittingly summed up the essence of this age when he wrote in all seriousness: "Le commerce ne demande que liberté et protection."¹ Commerce asks only for freedom and protection! A curiously indecisive mixture, we might say, but not without a certain limited plausibility when we consider that most of the writers of this period wrote with the perspectives of the individual merchant engaged in the very risky but very profitable overseas carrying trade and expected from his national government both the freedom and the protection of the seas.

Following a pattern set by Jean Law's Money and Trade Considered (1705), they produced some huge tomes on international trade and commerce, with special emphasis upon international finance, marine insurance, commercial law and

¹J.F. Melon, Essai Politique sur le Commerce (1734), from Economistes Financiers du XVIIIe Siècle, ed. E. Daire, 2nd ed., Paris, 1851, p. 673.

other maritime subjects.¹ But these writers were at sea in more than one sense. Theoretically speaking, they seemed to be drifting aimlessly, without a fixed compass bearing and without any special destination in sight, floating rather merrily along in a sort of theoretical limbo.

It is perhaps paying them too great a compliment to label them as "liberal mercantilists," as some historians are inclined to do, because they were genuinely neither one nor the other. Full-blooded mercantilism had been watered down with some sincere but uninspiring liberal sentiment. In all likelihood, the generally prosperous, outward looking and expansive mood of the times, especially in the 1720s, accounts for the widespread theoretical complacency of the literature, though this mood was slowly beginning to change by the 1730s.

Gone were the narrowly nationalist appeals of the older mercantilist pamphleteers, a tradition which had its last fling during the free trade debate of 1713-14 waged between Charles King and his British Merchant against Defoe's Mercator,² and even the most energetic proponents of latter-day mercantilism, such as Joshua Gee and Jacob Vanderlint,³ generally exuded a cosmopolitan spirit in which the older restrictive policies were greatly attenuated. Far from being dogmatic, such works seemed to lack any decisive or thoroughgoing theoretical commitment to a fixed point of view. And, on the other side of the

¹Major works were not especially numerous. The most important were: Jean Law's Money and Trade Considered, Edinburgh, 1705, 2nd ed., 1720, and a French translation, Considérations sur le Commerce, La Haye, 1720, reprinted in Daire, op. cit.; J. Savary des Bruslons, Dictionnaire universel de Commerce, 3 vols., Paris, 1723-30; G. de Uztariz, Téorica y Pratica de Comercio y de Marina, Madrid, 1724, with a French translation by Forbonnais, 1753, and an English translation by Kippax, 1751; Daniel Defoe's Complete English Tradesman (1725), 2 vols., 2nd ed., 1727, and A Plan of English Commerce, London, 1728; Joshua Gee, The Trade and Navigation of Great-Britain, London, 1729; J.F. Melon, Essai Politique (1734) as cited above; Dutot, Réflexions Politiques sur les Finances et le Commerce (1738) as edited by Daire, op. cit.; and Wm. Horsley's Treatise on Maritime Affairs, London, 1744. I have perused most of these major works, and they seem to have little to offer on competitive themes, save for Defoe, discussed below.

²I have glanced very selectively through these two massive editorial outpourings and found little that could be called serious theoretical analysis.

³In spite of its alarming title, Jacob Vanderlint's Money Answers All Things, London, 1734, is quite reasonably in touch with current liberal trends, as is Gee, op. cit. See J.H. Hollander's reprint of Vanderlint, Baltimore, 1914.

argument, even the very best exponents of free trade were not entirely without this period's underlying sense of theoretical indecision and ambivalence.¹

Needless to say, there was no conscious development of thought concerning the role of competition. The word itself, or one of its synonyms, crops up now and again inconspicuously, and the casual approach to the subject is best illustrated with reference to the prodigious literary output of Daniel Defoe.² Like Bernard Mandeville before him, Defoe was more a gifted chronicler of his times than a skilled theoretician. At least, we can be thankful for the many graphic accounts he gives of the economic conditions he saw around him.

Several incidental passages in his Complete English Tradesmen (1725-27) show not only how vigorous was the competitive pattern of life in which he lived, but also how unsystematic was the general appreciation of the abstract principle itself. For, Defoe did indeed believe that "trade ought to circulate through as many Hands as possible, so it is not for the Advantage of the Trade in general to be managed by a few Tradesmen," but he nevertheless looked askance at what he called "over-trading" or aggressive price competition whereby many "flourishing tradesmen," he thought, were "undone" or "ruined" by this "vying with one another" in an attempt to "supplant one's rivals."³

Defoe was unconsciously running up against the liberal dilemma. Thus, he viewed the "great over-grown Tradesman" as a "publick Grievance in Trade," and yet could do no more than appeal to moral suasion for their self-restraint:

"Though a great and rich Tradesman cannot be legally limited and restrain'd from

¹For example, Isaac Gervaise, in his System or Theory of the Trade of the World, London, 1720 (in answer to David Clayton's Short System of Trade, London, 1719), provides a very concise and crisp statement of the advantages of free trade, but still resorts now and again to the mercantilist rhetoric.

²J.R. Moore's Checklist of the Writings of Daniel Defoe, 2nd ed., Hamden, Conn.: Archon, 1971, lists more than 516 items from 1681 to 1730. Defoe turned to economic subjects often, beginning with his Essay on Projects, London, 1697. I have consulted about a dozen of his economic pamphlets, and only The Complete English Tradesman proved to be of any relevance to this history.

³The Complete English Tradesman, 2nd ed., Vol. I, p. 57; Vol. II, Part I, pp. 128-9, 149 and 154.

continuing in Trade, as long as he pleases; yet such a Man may be told, that he should not make himself an Oppressor in Trade."¹ Defoe's liberal sentiment was sincerely meant, but lacked an intellectually sound basis to support it, because he had not yet perceived in the idea of competition the social restraint of competition as a regulatory force governing resource allocation and income distribution.

Even so, the classical solution to the liberal dilemma was never really very far from the surface of conscious thought. From 1721 onwards, there appeared in the London Journal a series of brief essays, written anonymously and alternately by John Trenchard and Thomas Gordon, and entitled "Cato's Letters." These vigorous essays, giving voice to the Whig tradition, were published in book form through many editions between 1721 and 1755. Of special interest is a sequence of four letters by Trenchard which appeared in August and September of 1721.

The title of the first of these, "Every Man's true Interest found in the General Interest," promises a great deal; in fact, Trenchard only inches his way past Mandeville's more cynical formula and generally reverses the direction of his logic when he states that "nothing is so much the Interest of private Men as to see the Publick flourish," and laments the fact that all too often the Publick Interest suffers by these private men's pursuit of "little Views," not consulting their "real Interest."²

In the following letter, on "Monopolies and Exclusive Companies," Trenchard is careful to note that "the mutual Emulation and Contention" (in the case of private individuals) "with one another for the Preference of Markets obliges them to sell often for little profit."³ However, we find little hint that Trenchard perceived in competition the key principle whereby "their own Interest is involved in the general Interest."

¹ ibid, Vol. II, Part I, pp. 150-1, 158.

² J. Trenchard and T. Gordon, Cato's Letters, Or, Essays on Liberty, Civil and Religious (1721), 3rd ed., 4 vols., London, 1733, Vol. III, pp. 192-3.

³ ibid, pp. 202-03.

The aspect of Trenchard's work which most deserves our attention is the scathing indictment he makes of the incorporated form of business organization, with its large scale of operation and the new role it gave to business leaders as agents acting on behalf of investors. Of course, coming so shortly after the bursting of the South Sea Bubble in 1720, Trenchard's criticisms of the general mismanagement and corruption in all large companies of his time were not especially novel in themselves. The interesting thing is that much of his argument and even his phraseology is so similar to that found in The Wealth of Nations that one historian was prompted to suggest that Adam Smith had read Trenchard and had been greatly influenced by him.¹ If Trenchard's work shows how familiar the attack upon the great companies had become by the 1720s, then Adam Smith's version of the same attack shows how much further the logic had been carried and how more effectively it could be integrated into a liberal philosophy, as we shall see.

Judged as a whole, the economic literature of this fifty year period from 1700 to the mid-century has a very miscellaneous and disjointed quality about it. There are few coherent themes or dominant arguments which bind one work to another as separate parts of a sustained debate. There were no sharp clashes of opinion, no readily identifiable cross-currents of thought. The most we can do is to point to subtle shifts in emphasis and perspective.

One such development, and a very important one, becomes apparent when we compare the cosmopolitan and confidently outward looking treatises of the 1720s with those of the 1730s. Though the nationalistic sentiments of mercantilism were by no means gone by the 1720s, the very titles of Gervaise's System or Theory of the Trade of the World (1720) and of Savary des Bruslons' Dictionnaire universel de commerce (1723) convey the cosmopolitan spirit of the '20s, in which the "parfait négociant" is pictured romantically as an adventurer and man of the world.

Subtly at first, the 1730s were to bring a new and very different

¹W.R. Scott, The Constitution and Finance of English, Scottish and Irish Joint-Stock Companies to 1720, 3 vols., Cambridge, 1912, Vol. I, p. 449 and n.2.

perspective of society. In place of this individualized but undifferentiated Merchant or man of affairs acting in a World of Trade, there begins to emerge a picture of a society consisting of several major and distinct economic divisions or sectors, not acting together as an integral national unit in competition with other nations, but standing in a rather tenuous relationship with one another in the quest for an ever increasing share of the total wealth.

Any economic calculus must identify competitive groups and the common and conflicting interests which either bind them together or divide them into separate and competing units. By the 1730s, sharp analysts of economic affairs such as was Richard Cantillon, began to conceive the economic calculus not in terms of nations and individuals but in terms of "classes" of individuals defined by the major economic functions they performed: agricultural, manufacturing, commercial.

Thus, Jean Francois Melon, who tended to write in the older style of mercantilist balance-of-trade theory, nevertheless evoked this new way of looking at things by his distinction between the merchant and the manufacturer. Representing industrialists, Melon hints at the same idea underlying the physiocratic theory of wealth when he urges the legislator to encourage and protect producers, the real contributors to a nation's wealth, while "merchants" on the other hand can take care of themselves and are easily replaced. Melon's Essai Politique (1734) did not go unanswered. In challenging his claim, Dutot's Réflexions politiques (1738) contended that both "manufacturier" and "commercant" should be treated on the same footing.¹ Dutot, formerly a clerk of the French East India Company, was not challenging the fundamental distinction of "class," only the theory of wealth accompanying it.

A final word must go to Cantillon's Essai sur la Nature du Commerce en général.² Not published until 1755, Cantillon's essay was written during the

¹See Melon's Essai Politique and Dutot's Réflexions Politiques, in Daire, op. cit., pp. 691-6 and 870-93 passim.

²I shall cite from the edition by Louis Salleron, Paris: I.N.E.D., 1952. I have also made use of Henry Higgs' edition of 1931, with English translation.

early 1730s, almost went astray, but circulated in manuscript form, was widely read and exerted an enormous influence over the pattern of thought in France (and indirectly via Adam Smith in Great Britain as well) through the hectic years of the 1750s. Irish by birth, Cantillon settled in Paris as a banker. What is so unusual about his essay is the prominence he gives, not to the world of finance and commerce, but to the land and its natural resources. Cantillon established the role of agriculture in economic thought by developing his demographic theory, linking national prosperity to the food supply and to population growth, in terms of three "classes" (as he called them): landowners or "propriétaires terriens," labourers or "gens à gages" and the third group, consisting of merchants and manufacturers, whom he called "entrepreneurs."¹

Many of the themes and phrases familiar in classical economics first find their expression in Cantillon's Essai, but the Essai itself is a rather strange amalgam of views straddling the mercantilist, physiocratic and classical fields of analysis. He retains an interest in the balance-of-trade doctrine and yet manages to advance a considerable amount of price theory in a style not then in fashion, relating prices to costs of production.² Sharing Boisguillebert's general perspectives, Cantillon offers little evidence to suggest he had read or was familiar with the earlier writer's works.³ Thus, any treatment of competitive themes we find in the Essai are only remotely related to those of Boisguillebert's Dissertation.

Cantillon's text contains no references at all to "la concurrence," and it exudes no spirit of "liberté," but his analysis of price and of the

¹Essai, ed. Salleron, p. 31.

²ibid, Part III, ch. I, "Du Commerce avec l'Etranger," strikes an older mercantilist note concerning "la balance du commerce" (p. 131), and hints at many other mercantilist inspired policies (in regard to population and protection and yet his analysis of price and value in Part I is thoroughly classical.

³Salleron, ibid, p. 104n1, tries to "see" Boisguillebert in Cantillon's text, but the inference is extremely circumstantial.

"altercations" in the market are worthy of note: several times he stresses that market rivalry is a source of uncertainty and that entrepreneurial profits are "proportioned" (a term borrowed from Boisguillebert?) by the uncertainties of the market.¹ All in all, the picture Cantillon provides of market exchange is one of a very imperfect means of achieving stability in economic affairs.

It is very ironic that Cantillon's populationist thesis should have been developed just at a time when Europe's population was beginning to be harried by agricultural scarcity and instability; that this thesis was really an extension of the mercantilist view that "multiplicity" of buyers and sellers in single markets led to variety and technological change; that Cantillon himself was still very much imbued with some of the earlier mercantilist doctrine, and yet provided much inspiration both for the physiocrats, Quesnay and Mirabeau, and indeed for Adam Smith himself.

Cantillon's Essai, then, advancing competitive doctrine very little, stands as both a meeting-place for many divergent philosophies and as a point of departure for many of the fierce debates to follow in the remainder of the century.

3. From Mercantilism towards Liberalism

In the general history of ideas, 1748 is an auspicious year. It saw the publication of, among others, Montesquieu's De l'Esprit des Lois, Hume's Philosophical Essays, and more especially for economics Josiah Tucker's Brief Essay on Trade.^[1749-1750] Prior to 1748, the concept we find of competition in economic thought is based upon incidental comment, not upon anything we could validly call conscious and deliberate discussion. After 1748, this was to change.

By 1748, economic thought was still in a backward state of development in France, when compared to the great tradition built up in England from the previous century. By the mid-1750s, the initiative had crossed the channel and was to stay there for some time to come. However, when it comes to the discovery

¹ ibid, pp. 30, 67-8.

and prior enunciation of the key liberal principle of that age, pride of place must go to the Englishman, Josiah Tucker.

Already in his first treatise on economics, A Brief Essay on the Advantages and Disadvantages which respectively attend France and Great Britain, with regard to Trade (1748), Tucker had raised the crucial question, how to promote trade "by enabling the Merchant to find his own private Advantage in labouring for the Good of the Country,"¹ and had offered his answer:

... The more Persons there are employed in every Branch of Business, the more there will be to consume the Produce of his Estate: so that he will have no Temptations to complain, That the Trade is over stocked, or wish the Promotion of this Trade, in order to the Declension of that. In short, his own interest is connected with the Good of the Whole, so that he cannot but be extremely well qualified to understand, and to promote it, if he will please to make Use of the advantages he is happily possessed of.²

Thus, avoiding the cynicism of Mandeville's sort, Tucker had in effect re-asserted the classical mercantilist proposition that the merchant's pursuit of his own profit is also in the interest of the nation as a whole, but with a difference. Whereas the mercantilists saw their opposition in nationalistic terms and thereby couched their case with the qualification of monopoly, Tucker had switched the essential qualification: Trade should be "LAID OPEN" so that the "watchful Dragon, Self-Interest" - he also referred to it as "the Bane of all Publick Good" - would be imbued with the "Spirit of Emulation and Industry;" for, as he says on many occasions: "A Competition and Emulation ... must turn out greatly to the National Advantage, though it may not be so favourable to the private Interest of Individuals."³

Clearly, then, Tucker had seized upon the idea of competition as the social constraint which was so necessary to make freedom and pursuit of self-interest consistent with the general interest, as when he wrote:-

¹ Brief Essay on ... Trade (1748), 2nd ed., London, 1750, p. ix.

² ibid, p. xii, emphasis added.

³ ibid, pp. 20, 52, 61, 66 and 68.

...And all Trade ought to be laid free and open, in order to induce the Exporters to rival each other; that the Publick may obtain this general Good by their Competitorship. ... But if they cannot afford to export so much, there is no need to restrain them by Laws and Penalties, from doing that which their own private Interest will suggest to them soon enough.¹

Tucker advanced this argument forcefully and enthusiastically throughout his Brief Essay, although there is little suggestion there that he was especially aware of having enunciated a great discovery. In truth, Tucker had merely inched his way marginally beyond what other writers, such as Trenchard and Mandeville, had been saying earlier in the century. In several subsequent pamphlets on economic subjects, written between 1750 and 1755, Tucker kept coming back to this line of argument, and there is a sense of a gradual dawning realization in his work that he had struck upon something vital and forceful: a key principle. "Is not Emulation a strong Principle in human nature?" he asked in 1752.² Would not a "Spirit of Emulation" assist in "making the active Principles of Interest, Shame, Fear, Honour, Disgrace, all unite, and operate for the Publick Good?" he had asked in the previous year.³

The same trend can be seen in his attitude towards Self-Interest itself. In 1748, Tucker revealed the common prejudice towards it as an obvious manifestation of the older spirit of monopoly privilege: "The baleful Spirit of Self-Interest exerts all its Powers to oppose publick and general Benefit," because (as he later wrote) "all Men would be Monopolists if they could."⁴ But by 1755, in his most maturely theoretical work, the unpublished Elements of Commerce, Tucker wrote instead of the "Passion of Self-Love" in very different

¹ ibid, p. 82n.

² Tucker, Reflections on the Expediency of a Law for the Naturalization of Foreign Protestants, Part II, London, 1752, p. 41.

³ An Impartial into the Benefits and Damages of Low-priced Spiritous Liquors, London, 1751, p. 20.

⁴ Brief Essay on Trade, p. 85, and A Letter to a Friend Concerning Naturalization (1753), 2nd ed., London, 1753, p. 24.

terms as a "vigorous and active Principle." The central issue on his mind was still the same: How to so direct this self-love "as to promote its own and the public Interest at the same Time." And, the answer is still a very loud and unambiguous appeal to "universal Freedom and universal Emulation."¹

It may seem very strange that accompanying this boldly liberal appeal to the virtues of individual freedom in Tucker's work was an equally apparent mercantile perspective on the subject of trade. In part, this was a direct and unavoidable reflection of the fact that Tucker had chosen the method of comparing England's commercial position vis-à-vis that of France. However, Tucker's reliance upon mercantilist reasoning runs deeper than that. Not only did he constantly construct his economic analysis in nationalistic terms, the balance-of-trade logic is frequently alluded to, even if in a very vague manner.² And there is much aggressive talk about one nation out-vying and counter-balancing another, and even the strong suggestion that international trade was essentially a conflictual relationship whereby one nation's gain is another's loss.³

How can this apparent contradiction in Tucker's work be accounted for? The answer is that liberalism did not grow as a pure negation of and reaction to the prior philosophy of mercantilism but instead grew out of that earlier body of thought, albeit by some pretty fundamental modifications, but also by adapting and revising the logic of self-interest to the demands of the changing conditions in international trade.

Tucker's own work shows how this was so. He admitted that in certain circumstances in the past, incorporated monopolies had been "prudent and even

¹The Elements of Commerce and the Theory of Taxes, private printing, 1755, pp. 6-7 and 92.

²For example, Brief Essay on Trade, p. 144, and Reflections, Part II, p.21.

³Brief Essay on Trade, pp. 72-3, 87, 92, 142 and 144. It is worth noting that in his Reflections on the Expediency of Opening the Trade to Turkey, London, 1755, Tucker first argues that a national monopoly in that trade is no longer in the national advantage (pp. 4-5), but still invokes the spirit of national rivalry (pp. 6-9).

necessary" and were "calculated for the publick Good" for several reasons which he outlines. By the 1750s, however, none of these reasons "do hold in our present Circumstances," and because world trade had become so openly competitive, Tucker laid it down as a general "Principle" that: "If there are two Nations, Rivals in the same Trade, that Nation which permits a free and open Trade, will always be superior to the other, which confines it to a Company."¹ Thus, it was on a mercantilist logic that Tucker argued: "in open Trade, we could more than counter-balance any Advantage that the French can draw from the situation of Marseilles."²

It is fascinating to observe how Tucker intermingles the nationalist with the individualist conception of competition throughout his many and varied texts. His very explicitness about the changing concept of competitive grouping is itself a remarkable fact. Part II of his Reflections on the Naturalization of Foreign Protestants (1752) covers a variety of economic matters set out in the format of a series of rhetorical questions. Section XVI, entitled "There must be Rivals in Commerce either at Home or Abroad", reads in part:

- I. If there will and must be Rivals either at Home or Abroad, which is the most detrimental to a Kingdom? - To have Competitors at Home? or to be out-rivalled Abroad?
- II. Was a Nation ever hurt by Competitions at Home? ...
- III. What is the Publick Good? Is it not, for the most part, the Result of Emulation among the members of the same Society? And what would become of Industry, Temperance, and the Desire of Excelling, if there were no Emulation?³

And yet, whatever the real significance of those questions, Tucker wrote the following year, in connection with English-French rivalry in the Levant trade, and as part of his case against monopoly (!), that "it should be duly considered by every true Patriot and Lover of his Country, That the CHIEF Competition in this Struggle for the Liberty of Commerce is not between one English Merchant and another, - But between Great Britain and France."⁴

¹Brief Essay on Trade, p. 73.

²ibid, p. 73n.

³Reflections on Naturalization, Part II, p. 33.

⁴Reflections on the Trade to Turkey, p. 9.

Thus it was that a latter-day version of mercantilism was transformed into a primitive but nevertheless genuine form of classical liberalism. This transformation becomes all the more readily apparent when we come to examine the special influence Tucker's work had in France, especially in the case of Forbonnais. What influence, though, did Tucker have in England? Oddly enough, very little.

Even though Tucker's many pamphlets and treatises were teeming with ideas, some of them important analytical insights,¹ clearly what he lacked was a coherent and comprehensive economic calculus. Without a grand design, Tucker's essays stand as a rather disorderly assemblage of interesting but unrelated ideas. He was more the political than the economic theorist, and evidently he abandoned his ambitious project, The Elements of Commerce, because he could not find the economic logic to hold his political theory together.

In contrast, David Hume wrote some sparkling essays of analysis on the familiar topics of money and trade, publishing these together in 1752 in his Political Discourses. The balance-of-trade theory is neatly taken to pieces. The one or two references to the subject of competition are incidental and unimportant. However, in the early part of 1758, Hume had carried on a brief and indirect correspondence with Tucker, through Lord Kames,² wherein he stated his general admiration for Tucker's endeavours but added one reservation concerning the conflictual character he still ascribed to the notion of trade between nations.

Later that year, Hume added a further essay, "Of the Jealousy of Trade," to his third edition of the Political Discourses in which he directly challenged the mercantilist idea that all states are rivals with one another in

¹A good example (as noted by R.L. Meek, Precursors of Adam Smith, London: Dent, 1973, p. 176) is Tucker's hint of the idea of division of labour, as limited by the extent of the market, in his Four Tracts on Political and Commercial Subjects, Gloucester, 1774, pp. 25-6.

²The relevant correspondence is given by E. Rotwein in his edition of David Hume: Writings on Economics, Edinburgh: Nelson, 1955, pp. 199-203, and Tucker's Four Tracts, pp. 41-3, does show a change of attitude, probably attributable to Hume.

such a way that it is impossible for any one of them to flourish without injuring the others in trade relations. Thus, by criticism of Tucker, Hume added another vital element to the emerging liberal philosophy of competition. Far from being destructive, "the emulation among rival nations serves rather to keep industry alive in all of them."¹

The great stimulus that Hume and Tucker had given to economic thought between 1748 and 1752 was not carried forward in England but crossed the Channel, and for the next twenty years the initiative remained in Paris. Montesquieu's De l'Esprit des Lois, which caused a great stir following its publication in 1748, signalled the onset of a brilliant explosion of literature on philosophy, politics and economics in France. It gave an elegant though unconvincing expression to the idea that all human affairs (and not simply in the juristic sense of Grotius' natural law) are governed by laws of one sort or another. Between 1748 and 1755, French authors did not develop independently their own economic theory. On the contrary, they assimilated the best of the English tradition: Locke, Child, Cary, Gee, Cantillon, Tucker and Hume.² The long series of translations of these authors, made by such talented authors in their own right as Forbonnais, Turgot and Gournay, indicates how swiftly the French drew upon the English literature as a source of inspiration.

Montesquieu's massive magnum opus by itself represents a rather inauspicious beginning insofar as the three chapters he devotes to the subject of commerce are utterly feeble in their economic analysis, far below the standard set earlier by Melon's Essai Politique which he had read. In a remarkably casual way, Montesquieu nevertheless concisely renders the essence of classical price theory when he states:- "C'est la concurrence qui met un prix juste aux marchandises, et qui établit les vraies rapports entre elles."³ So isolated and quite

¹Rotwein, op. cit., p. 80.

²A good account of this process of assimilation is given by Georges Weulerrse, Le Mouvement Physiocratique en France, Paris: Alcan, 1910, pp. 27-36.

³Montesquieu, Oeuvres Complètes, ed. D. Oster, Paris: Editions du Seuil, 1964, p. 653, from Livre XX, ch. 9 of De L'Esprit des Lois, 1st ed., 1748.

unsupported is this single sentence to anything else in his Esprit, and so weak is Montesquieu's grasp of economic logic, that I cannot help but conclude that he merely spotted this connection between "la concurrence" (as he might have found it in Melon) and "la prix juste" (as he will have seen this in Grotius and other natural law philosophers) in some other writer's work, but I have been unable to trace the origin. Montesquieu certainly lacked the originality and insight to have made the connection himself.

At any rate, there it was for all to see. And De l'Esprit des Lois was widely read and commented upon. Both Dupin and Forbonnais wrote lengthy commentaries upon the work's 31 books and innumerable chapters. I have been unable to obtain a copy of Dupin's critique of 1749.¹ It would be worth perusing, since Dupin, as France's official "fermier général" (i.e. minister of agriculture), had already published a major study himself, his OEconomiques (2 vols., 1745) as well as the selection, Memoire sur les Bleds (1748), in which he had advanced a case for a more liberal policy toward the grain trade within France, though there seems to be nothing of great interest in his texts concerning the role of competition²

Such, however, was certainly not the case with Forbonnais! Francois Louis Véron Duverger de Forbonnais was to be a central figure in the ensuing debates of the 1750s and 1760s between latter-day "mercantilists" and the newly styled "économistes" of the physiocratic school. For dubious reasons, Forbonnais' strategic place in the history of economic thought has been largely overlooked in favour of the more flamboyant antics of the physiocrats. Putting official history to the side, Forbonnais was an acknowledged leading figure of his times, and his ups and downs between 1748 and 1768 are immensely instructive for the understanding of how competitive doctrine developed over these hectic and eventful years.

¹Claude Dupin, Réflexions sur quelques parties d'un livre intitulé l'Esprit des Lois (1749). Later, Dupin published a less critical study (1759).

²The OEconomiques has been edited in 2 vols. by M Aucuy, Paris, 1913. The memoire "Sur les Bleds" appears in vol. I, pp. 145-65.

The relevant portions of Forbonnais' detailed review of De l'Esprit, published anonymously in 1750, do little more than confirm that Forbonnais had read Montesquieu, had quietly assented to Montesquieu's one assertion regarding just price, and had begun to assimilate the phraseology of "la concurrence" into his own thought processes. As luck would have it, Forbonnais was extraordinarily active, literally speaking, between 1750 and 1755, so that we can trace the evolution of his thinking about competition fairly closely over this period. Both his Considérations sur les Finances d'Espagne (1753) and the lengthy introduction he provided to his translation, Le Négociant Anglais (1753), of The British Merchant (1713-14) show how much closer Forbonnais' affinities were to the mercantilist than to the natural law tradition.

Forbonnais was himself a prosperous manufacturer of a well-established industrial family, and through the 1750s he was convinced of the virtues of industrial freedom in that peculiarly neo-mercantilist fashion whereby "liberté et protection" were proclaimed together to be the correct policies to adopt. In this manner, Forbonnais drew his inspiration from Melon who in turn reflected the teachings of Josiah Child. Forbonnais also carried forward the new perspective of economic society, consisting of two or three major sectors or classes, each dealing respectively with agriculture, manufacturing and commerce.

Add to these ingredients the immensely influential works of Hume and Tucker, and we have what amounts to something of an orthodoxy of the 1750s, an orthodoxy of industrialism which never quite reached the stage of acquiring an official name or a well-integrated philosophy, but an orthodoxy it was, commanding the allegiance of such people as Gournay, influential civil servant in France from 1749 to 1759 and wrongly alleged propounder of the maxim "laissez faire, laissez passer," Turgot, Du Pont de Nemours, Morellet, and Forbonnais himself.

Thus it was that Forbonnais was asked to write a series of articles on economic subjects for the newly founded Encyclopédie of Diderot and D'Alembert.

Forbonnais' article appeared first in 1753, anonymously. When his name was accidentally divulged, he decided to publish four of these short pieces in his new textbook, Elemens du Commerce (1754), and among these four selections was the item, "De la Concurrence."¹ Seemingly inconspicuous at the time, this short article is a landmark for this history on competition.

Quite unreservedly, Forbonnais wrote (in the Encyclopédie article), "la concurrence est l'âme & l'aiguillon de l'industrie, & le principe le plus actif du commerce," and again "elle est la base principale de la liberté du commerce." If Forbonnais' reference to competition as the dynamic spur ("l'aiguillon") towards perfection brings to mind the mercantilist spirit of Montchrétien (1615), then Forbonnais' emphasis upon the distinctions between "la concurrence extérieure" and "la concurrence intérieure" as well as his preoccupation with national rivalry immediately brings to mind the influence of Josiah Tucker. "La balance du commerce," Forbonnais wrote, "est véritablement la balance des pouvoirs," adding that this "exterior competition" - competition between nations - was not an exercise in military force but of economic strength.

What is perhaps more significant than anything else about this brief article is the fact that, mercantilist though he may have been, Forbonnais nevertheless saw in competition the very essence of economic freedom: It was, to repeat, "la base principale de la liberté du commerce," and in his Elemens of 1754, he went further: "Nous avons déjà prouvé la nécessité de la concurrence; elle est l'âme de la liberté bien entendue."²

The grand irony is that Forbonnais had not seen in advance the full implications of what he had written. This very idea that competition meant the play of economic freedom in all its diversity was ultimately to redound to the destruction of his own system of thought by the 1760s. In truth, he did not have

¹Elemens du Commerce, 2 parts, Leyden, 1754. Part I, ch. II, "De la Concurrence," pp. 88-96, contains some minor revisions and additions to the original article, "Concurrence," Encyclopédie, ou Dictionnaire Raisonné, eds. Messrs. Diderot et D'Alembert, Paris, 1753, tome III, pp. 832-2.

²ibid, p. 832 and Elemens, p. 80.

to wait long to see the effects of his words. Already in late 1753, Claude-Jacques Herbert seized upon Forbonnais' own phraseology in his Essai sur La Police des Grains and turned it into an argument for free trade in grain. "La concurrence," Herbert wrote, "ce principe le plus actif et le plus étendu du commerce," would effectively regulate grain prices in a free international trade and the resulting lower prices would be the "heureux effet de la concurrence et de la liberté."¹

At a stroke, Herbert had virtually demolished the mercantilist position and had substantially anticipated all that the physiocrats would have to say on the subject, beginning rather tardily after Herbert's premature death in 1758. It was early days in 1754, though, when Forbonnais made brief passing mention of Herbert's Essai whose principles he commended as being "très-lumineuse," for indeed they were ostensibly so similar to those Forbonnais had himself put forward. The tensions between agriculture and industry were only just beginning to surface by the mid-1750s; and by the 1760s, when the issue of free trade became paramount, the strength of Forbonnais' liberal sentiments was to be put to the test.

By 1754, the process of assimilation of English mercantilism amongst French industrial writers had been completed, and after this time writers such as Forbonnais and Turgot were beginning to show some real independence of mind. Before they could coalesce into a united school, a new intellectual force was to make itself felt: the growing number of proponents of agrarian reform who were to react rather violently to the older mercantilist tradition. I turn to them now.

¹Essai sur la Police des Grains (1753), ed. E. Depitre, Paris, 1910, pp. 21. Depitre's text is from the edition of Berlin, 1755, but the key phrases appear in the 1st ed., London, 1753, p. 32.

4. From Agricultural Reform to the Dogmatics of Physiocracy

The onslaught upon mercantilism from the rural/agricultural point of view, commencing with Boisguillebert at the turn of the century, proceeded at a snail's pace until the 1740s. By the end of the 1760s, "la physiocratie" was sweeping across Europe with a momentum which threatened to make it the new orthodoxy almost overnight.

Numerous myths have been built up around this extravagant but short-lived sectarian movement, and historians have not presented its true role in the actual sequence of events which transpired during their twenty-year existence, mainly because too much emphasis has been placed upon their own work and not upon the contributions of their many and varied opponents. This imbalance and error in historical perspective is particularly applicable in the case of competitive doctrine, and even more so as regards economic liberalism in general.

Until the 1740s, most of the literature on agriculture was on a purely technological nature, written in the style of treatises of animal husbandry and soil cultivation, with incidental comment upon the economic side of the subject. Scarcities and wild fluctuations in prices and supplies of grain throughout Europe began to receive attention by the early 1740s, though Bandini's Discorso Economico is reputed to have been written in 1737.¹ In France, following Dupin's OEconomiques (1745) and "Mémoire sur les Bleds" (1748), Duhamel du Monceau began a series of major treatises on agriculture, blending economic considerations with technological factors,² and finally Herbert's energetic pamphlet of 1753

¹Bandini's Discorso contains some very interesting analyses of supply, demand and price, including some notable phraseology of competition and liberty (see Scrittori Classici Italiani, ed. Custodi, Milan, 1803, Parte Moderna, Tomo I, p. 182, and passim). Unfortunately, it was not published until 1775. Bandini died in 1760, while the MS is said to have been written in 1737. If this was so, it was far ahead of its time. The influence of Boisguillebert is apparent. Carlo Antonio Broggia's two published Trattatos of 1743 are also very noteworthy for the same reason. See Custodi's Parte Antica of the Scrittori series, Vol. IV.

²H.L. Duhamel du Monceau, Traité de la Culture des Terres, 6 vols., Paris, 1750-61. More adventuresome in its economics is his Traité de la Conservation des Grains, Paris, 1753 - see his preface, pp. iii-xviii.

succeeded in bringing the agricultural question into full view. By 1755, his Essai had passed through many revisions and was beginning to appear in many translations throughout Europe.¹

Whatever the actual circumstances were which caused this growing obsession with grain - the pressures of population upon fixed supplies, or inadequate regulation of supplies, or simply a series of climatic setbacks - in any case the new advocates for agricultural reform directed their hostility towards both the plethora of customs and regulations placed upon the movement of grain as well as upon the merchants and middle-men of the trade who were accused of speculating and of creating artificial scarcities to raise their prices.

Now, both of these types of criticism encouraged a sense of class identity and class opposition between city and country. They also pointed to the idea of freedom or liberty (in the removal of customs and monopoly speculators). Herbert's Essai was quick to capitalise on the appeal to both freedom and competition that he had found in Forbonnais' article. A significant clue to the understanding of the great debate to follow rests in Herbert's emphasis upon a criterion which hitherto had been little used: justice in income distribution, as much as efficiency in resource allocation. Thus, competition maintains the price of all things "dans une juste équilibre," and keeps the profits of merchants "dans de justes bornes."²

In surveying the vast amount of economic literature to follow in its wake, we must not allow ourselves to fall into the trap of believing that all of the agricultural reformers who proclaimed the principle of freedom ad nauseum through the 1760s and 1770s were genuinely liberal or even genuinely in favour of what would eventually be known as Free Trade - the absence of tariff barriers between trading nations. For one thing, it was quite often ambiguous as to whether these proponents of freedom were referring to free internal trade or to external

¹Depitre, op. cit., pp. xii-xiii, lists 6 editions from 1753 to 1757 (London, Dresden and Berlin) as well as German and Italian translations (1756 and 1764).

²Essai, ed. Depitre, pp. 15, 21.

trade between nations. And, secondly, many of them (including Herbert himself) did not advocate tariff-free imports of grain. They were in large measure agricultural protectionists, advancing a set of policies which were the mirror image of the industrialist and commercial dependents of the older mercantile tradition. Even Herbert himself revealed this mercantilist spirit when he argued that "Plus nous porterons de bleds au dehors, plus nous ferons tomber l'agriculture de nos rivaux."¹ Agricultural mercantilism in its purest form!

What then of "La Physiocratie"? Where does its chief founder, Francois Quesnay, stand in relation to the newly emergent agricultural appeal to freedom and competition? In fact, Quesnay was a relative late-comer to the cause of agricultural reform, and his first articles on the subject, published in the Encyclopédie 1756-57, hardly suffice to make him the new champion of economic freedom and competition. These initial studies - "Hommes," "Fermiers," "Grains," and "Impôts" - were still very much in the older technological tradition of Duhamel, and even if some of the quintessential elements of physiocracy can be spotted in them, Quesnay's logical reliance upon freedom and competition in these opening statements are quite muted for their times, even indecisive when compared with Herbert's vigorous pamphlet.²

It was only as the events of the great doctrinal battle moved into the 1760s that Quesnay finally recognized what advantages there were for his case

¹ ibid, p. 59.

² See especially "Fermiers" and "Grains" which were published in 1756-57, and his Questions Intéressantes of 1758. As MSS unpublished until 1908, Quesnay's "Hommes" and "Impôts" cannot be reliably dated. The various commentaries on the Tableau oeconomique (1758-59) contain little or nothing of interest for this history, and even the dogmatic Philosophie Rurale (1763), jointly by Mirabeau and Quesnay, is dubious as a statement of economic liberalism. I have relied principally upon Francois Quesnay et la Physiocratie, Vol. II Textes, ed. L. Salleron, Paris: I.N.E.D., 1958, though the earlier Oeuvres de F. Quesnay, ed. A. Oncken, Paris, 1888 and R.L. Meek's The Economics of Physiocracy, London: Allen and Unwin, 1962 were also helpful.

in the appeal to free competition; indeed, he was really manoeuvred into this position (as we shall see in a moment) by some of his ardent converts and allies who for a short time came to his side in the 1760s, bringing with them the conviction of a more liberalized approach to economic affairs based upon their experience in and knowledge of industrial affairs, men like Morellet and Turgot, to name but two.

So, whatever Quesnay may have said by 1766 or 1767, it is necessary to bear in mind that his first convert, the Marquis de Mirabeau, was as far from being imbued with the liberal spirit as one could imagine, having adopted the populationist thesis of Cantillon in his own L'Ami des Hommes (1756). In 1757, Quesnay had merely persuaded Mirabeau to reverse the thesis: the food supply delimits the size of population a country can support, in contrast to Cantillon's thesis that a large population encourages growth in total production.

At about this same time, long before Quesnay had come in contact with his future followers, Morellet and Turgot, had quite independently begun their own crusade for a more liberal policy toward French manufacturing. Morellet opposed Forbonnais' carefully muted defense for industrial protection with the cry: "Laissons donc agir l'industrie." "Ce grand principe," he argued in his Réflexions sur les Avantages de la Libre Fabrication (1758), meant that "l'industrie d'une multitude d'hommes animée par la concurrence & la liberté va au bien général."¹

In 1755, Turgot had published his translation of Part II of Josiah Tucker's Reflections (1752), a most important analysis of competition which obviously impressed Turgot as well as Gournay;² and Turgot's two Encyclopédie articles of 1757, "Faires" and "Fondations," as well as his many unpublished manuscripts through the 1750s, are filled with references to the virtues of

¹A. Morellet, Réflexions, Geneva, 1758, p. 205.

²Turgot's translation was entitled Questions Importantes sur le Commerce, London, 1755. For Gournay's views, we have only the testimony of Turgot.

economic freedom and competition.¹

And, when Mirabeau was imprisoned in 1760 for a short while, following the publication of his Theorie de l'Impot, he and Quesnay did not remain silent for the next three years because they had valiantly spoken out in support of the cause of freedom, but for certain financial reforms which were too embarrassing for the government to allow to go unchecked. As for the two triumphs for economic freedom, the liberal edicts of 1763 and 1764, creating free internal and external traffic in the grain trade, reliable evidence is difficult to come by, but what there is suggests that these measures were pushed through by a coalition of liberal industrialists and civil servants who were only in small part sympathetic to the physiocratic cause.²

Indeed, the "Physiocratic" school, or "Economistes" (as they were called at the time) did not even exist prior to 1763, and the first rush of adherents - Du Pont de Nemours and Abeille in 1763, Le Trosne and Saint-Péray in 1764 - seemed to be energetic propogandists jumping onto a bandwagon after the real achievements had been brought about by others, liberal industrialists and civil servants who wielded power and influence. Even Forbonnais welcomed the move towards a liberalization of the grain trade in an open letter to Du Pont in 1764, though his enthusiasm might be tempered by some serious and practical qualifications concerning the speed with which these reforms should take place.³

Up to this point in the narrative, I have cast considerable doubt upon the role played by Francois Quesnay and his as yet unassembled sect of

¹See Oeuvres de Turgot, 5 vols., ed. G. Schelle, Paris, 1913-23, Vol. I, pp. 372-86, 577-83, and 584-93. Turgot's celebrated "Eloge de Vincent de Gournay" could have been written at almost anytime between 1759 and his death in 1781. It did not see the light of day until Du Pont's edition of his Oeuvres, 1809-11, and the original obituary notice in the Mercur de France (August, 1759, pp. 201-210) is much shorter and conveys a rather different impression.

²I have relied heavily upon one source here: Weulerse, op. cit., Ch. 2.

³"Lettre a l'Auteur de la Gazette du Commerce," (Gazette du Commerce, 5 mars 1764, pp. 130-39) as reprinted in the Collection des Economistes et du Reformateurs Sociaux de la France, ed. E. Depitre, Paris 1911, pp. 58-63.

physiocrats in the evolving patterns of thought about competition and economic liberalism in general. After 1763, there can be little doubt that Dr. Quesnay and his loose band of adherents exerted an enormous influence over future events. The years from 1764 to 1768 or thereabouts represent one of those critical episodes in the history of economic thought because they bring into sharp focus various issues that had been festering for a long time and yet remained unresolved.

The wildly extravagant literary outpourings of these hectic years, from 1764 to 1768 and beyond, were to bring an air of finality to the attack upon the last vestige of mercantilism and to establish at least some of the pillars of liberalism. For the economic literature before 1748, the task of research is one of finding the few smatterings of evidence there are in relation to competitive themes. With the 1760s and 1770s, the challenge facing the researcher is one of sifting through an immense body of literature and to find in it the broad patterns of change which lie hidden in the maze of detail.

One such important pattern seems to have set in by about 1764. Over the previous years, a strong association had been built up between the distinct but related ideas of freedom and competition. Clearly enough, the reason for this was that the removal of barriers to the entry into an economic trade, market, or profession not only meant a certain kind of freedom, the freedom of entry, but it also implied that competition would certainly follow from the multiplicity of participants who might take advantage of any such new freedom. So close was this association made that by the 1760s, people began to speak and write not merely of "liberté et concurrence" but quite simply of "libre concurrence," or "free competition." For example, the celebrated edict of 1763, creating free internal trade in grain throughout France, the composition of which edict has been ascribed to either Du Pont de Nemours or to Turgot or both, made mention of a "concurrence libre et entière."¹

¹The Royal Edict of 25 mai 1763 is given in full by Schelle, Oeuvres de Turgot, Vol. II, pp. 129-30.

This phraseology tends to fuse the two very separate and distinct ideas of freedom and competition, and it became a standard mode of expression for the next one hundred years and more, as a prominent phrase in the tradition of economic liberalism. And even though liberal theorists rarely if ever claimed outright that competition was solely freeing (rather than constraining) in its effects, their very manner of employing this phrase unconsciously created this false impression in the same way that most mercantilist writers were not guilty of treating money and wealth as equivalent but unconsciously invoked that idea.

This linking of freedom with competition was in itself certainly valid enough, especially as the economies of Western Europe broke away from the medieval restrictions placed upon economic enterprise, but the imbalanced phraseology of "libre concurrence," once let loose, soon became increasingly persuasive and increasingly obtrusive in the long series of physiocratic pamphlets which flowed from the pens of Du Pont, Abeille, Baudeau, Le Trosne and others from 1763 onwards.¹

Thus it was that Forbonnais by 1766 found himself caught in a trap which he himself had set. In the second edition of his Elémens du Commerce (1766), he added some second thoughts to his chapter on competition. Despite the "heureuses conséquences de ce principe," he wondered out loud, was it not

¹The literature from 1763 is quite prolific. I have sampled a fair number of the pamphlets up to the 1770s. While they are very vigorous exercises in polemics, the logical rigour is not especially of high caliber. In spite of much repetition, this very dogmatic body of writings adds little essentially new or interesting to the competitive theme, and I shall simply mention a few of the highlights: L.P. Abeille, Lettre d'un Négociant (1763) and Réflexions sur la Police des Grains (1764) both edited by E. Depitre, op. cit., Paris, 1911; Du Pont de Nemours, De l'Exportation et de l'Importation des Grains (1764), ed. Depitre, op. cit., Paris 1911; Le Trosne, La Liberté du Commerce des Grains, Paris, 1765, and many smaller items began to appear in periodicals such as the Journal de l'Agriculture (1763-) and Ephémérides du Citoyen (1765-). There was also a growing body of Italian literature at this time which space prevents me from treating. It was in part derivative, in part a stimulus to French work.

"susceptible d'excès"?¹ Clinging to the mercantilist tradition, he insists that a nation's wealth and prosperity - "l'aisance generale d'une nation" - derive not from the land (as the physiocrats were now arguing) but from Commerce! Echoing popular outcries against the rise in food prices, Forbonnais now blamed large landowners for trying to create artificial scarcities at home and added that their grain exports to higher priced markets abroad were destroying "le veritable equilibre entre les provinces d'un etat." Furthermore, the "Cosmopolites" (as he now called those who advocated free trade) were in error by confounding "la concurrence interieure" with "la concurrence exterieure," thus giving a false application to "la loi de la concurrence."²

Whatever were the real causes of scarcity and high prices, whether they be a succession of bad harvests, or increased demand from abroad, or inadequate transport and storage facilities, the fact remains that Forbonnais met the seemingly cogent arguments put forward by the physiocrats with what could be described at best as a very fuzzy presentation of the mercantilist point of view. As a matter of economic logic, Forbonnais' case could not counter the bold new physiocratic theory that wealth was the gift of nature and that all manufacturing and commerce was but a transfer of wealth which did nothing to increase the so-called "net product" of the land.

With their new theory of wealth, the physiocrats (led by Quesnay's theoretical daring) aggressively challenged the balance-of-trade theory. Trade between nations, as between individuals, is merely an exchange or transfer of equivalents and hence was not conflictual. On the contrary, free trade was to the advantage of all trading nations insofar as it led to the maximum development of natural resources belonging to each. Implicitly, they denied that nations acting as a whole could effectively influence the terms of trade existing between

¹Forbonnais, Elements du Commerce, 2nd ed., 1766, p. 107.

²ibid., pp. 106-08.

them. Applied to agriculture produce, this assumption was probably realistic.¹

The Abbé Baudeau, editor of the physiocratic organ, Les Ephémérides du Citoyen, pressed home the attack upon Forbonnais' position with a series of critical reviews in 1766, evincing rather weak replies from Forbonnais' own followers in the Journal d'Agriculture.² What is most instructive about Baudeau's efforts is that he forcibly brought the great Dr. Quesnay into the debate. This he did by repeatedly referring to the Doctor's writings in support of his own case, thus obliging Quesnay to offer some words of qualification and clarification in the October 1767 issue of the Ephémérides.

Now, at the moment of writing this note of October 1767, Quesnay seemed to want to remain on neutral ground and to confine himself to what he called a few "réflexions purement grammaticales" concerning some of the terminology used in the debate between Baudeau and Forbonnais. The summary he gives, sometimes very pointed, sometimes very obscure, does serve to illustrate how the mercantilist conception of competition as a form of national rivalry was being picked apart and was being replaced by the new liberal conception of an individualized perspective in which class divisions were looming in the background. As Quesnay sees it, the debate between Baudeau and Forbonnais is whether or not the interests of commerce and agriculture are identical with or opposed to one another and whether the best way of conciliating opposed interests is to ensure

¹I cannot undertake here to recount the evolution of the physiocrats' theory of international trade as an exchange of equivalents. Quite likely, Hume's essay on "The Balance of Trade" (1757) was the source of inspiration, but the idea of exchange of equivalents only begins to appear in or around 1766 (as in Turgot's Réflexions, 1766, sect. XXXIII), at the same time that Quesnay introduced the idea of "sterility" in manufactures. Certainly, in 1757 Quesnay still held older mercantilist notions about international trade, for which see note 2 page 80 below.

²Baudeau hammers home his forceful attack upon Forbonnais in Ephémérides, Tom. IX, sept. 1767, pp. 177-80, Tom. XI, nov. 1767, pp. 186-208, and especially Tom. VI, juin 1767, 121-5, 156-64, Tom. VII, juillet 1767, pp. 144-7, and Tom. VIII, aout 1767, pp. 142-52.

"la plus grande concurrence possible."¹

Quesnay defers judgement here. It was not, he writes, "mon état de juger sur ces matières," but the few comments he does make carefully explore the ambiguities in Forbonnais' contention that competition ought to be confined to the interior and yet that nations should still engage in trade with one another. The concept of national competitive grouping was falling apart. Wisely, Quesnay noted that in the debate between Baudeau and Forbonnais, the doctrine of Baudeau may have been new, but that it contained no new word which had not already been used by Forbonnais himself in the past!

The interchanges which took place between Forbonnais, Baudeau and Quesnay during 1766 and 1767 proved to be crucial in the demise of the mercantilist tradition. A careful study of Quesnay's texts published prior to 1766 will show that the many occasional references he makes to competition are not especially significant. He does not hold it out as a grand principle along with liberty, and in fact in several early works we find the same traces of a lingering mercantilist spirit (competition as national conflict) that can be found in virtually all other writers in the 1750s.² However, the events of 1766 forced Quesnay to reach some resolution on this matter, and only a month after his guarded commentary in the Ephémérides, Quesnay published his revised set of Maximes Générales which for the first time show Quesnay's newly resolved and wholly dogmatic attitude towards the subject of competition.

In no uncertain terms, his maxim no. XXV expresses this attitude as:

Qu'on maintienne l'entière liberté du commerce: car LA POLICE DU COMMERCE INTERIEUR ET EXTERIEUR LA PLUS SURE, LA PLUS EXACTE, LA PLUS PROFITABLE A LA NATION ET A L'ETAT, CONSISTE DANS LA PLEINE LIBERTE DE LA CONCURRENCE.³

¹From Ephémérides, Tom. X, oct. 1767, p. 191. See Francois Quesnay, ed. L. Salleron, p. 940.

²See, in particular, "Graine," (1757) in ibid, pp. 460, 495, though it must be said that on balance Quesnay showed a liberal attitude here.

³ibid, p. 955; from Physiocratie, ed. Du Pont, Paris, 1767.

With this official sanction from the master himself, the avid followers and proponents of physiocracy, in growing numbers, renewed their campaign to establish the virtues of "la libre concurrence," with a deafening crescendo of words and exclamation marks.¹

What was Forbonnais' reaction to this deluge? At first, he tried a detailed critique of the physiocrats' new calculus of wealth. His Principes et Observations Oeconomiques (1767) is a model of carefully considered methodological criticism and a scathing condemnation of the physiocrats' dogmatic excesses. But in 1767, such criticism would not suffice, for the physiocrats had likewise demolished the older theories and had definitely seized the initiative with some bold new principles. However clever Forbonnais' critique may have been, he not only failed to meet head on the central thrust of the physiocratic case for "la libre concurrence," he also failed to provide a clear and sound alternative system to replace theirs.

By 1768, there is a sense of desperation as he critically reviews Abeille's Principes sur la Liberté du Commerce des Grains (1768).² Here, Forbonnais tried a new tactic in what was obviously a losing battle: He finally accepts the proposition that with a "liberté absolue & illimitée" (which the physiocrats were modestly demanding), competition in the grain trade would regulate prices properly, but he argues that in France's current state of development, this hypothetical result did not obtain because of "le défaut de concurrence." Or, in other words, competition was still too imperfect compared with English markets; France would still require years to catch up in its

¹Again, I must say that the voluminous literary outpourings by men such as Du Pont de Nemours, Baudeau, St. Féray, Abeille, Morellet, Mercier de la Rivière, Roubaud and others from 1767 onwards were characterized more by sheer repetition than originality and independence of thought. But their critics were also growing in numbers and became preponderant by about 1770. Strangely enough, competition received no critical re-assessment as did other aspects of the new physiocratic doctrine.

²Forbonnais' title was Examen du Livre intitulé Principes sur la Liberté du Commerce des Grains, Paris, 1768.

development.¹ And once again he blames the large landowners and their concentration of power in the market.

This resort to practical expediency was tantamount to submission on the theoretical front, where the case for free competition was no longer challenged outright. The irony is that by 1768 the physiocrats had won the theoretical battle but by 1770 had lost the practical war when Terray revoked the liberal edicts of 1763-4. During 1774-76, Turgot made what proved to be another disastrous attempt to rush through all too quickly reforms which should have been introduced in a more moderate way over a much longer period of time. After 1770, the physiocratic movement disintegrated quickly, and critics began to outnumber adherents. In spite of Necker's exasperation at the "fausse idée qu'on se fait de la concurrence,"² the liberal conception of that economic principle had been established.

The feeling that this new conception had definitely arrived can be sensed throughout the pages of Le Mercier de la Rivière's grand synthesis, L'Ordre Naturel, which was written during those heady days of 1767 when physiocracy was at its height and which truly does exude the air of Olympian serenity.³ Adam Smith judged Le Mercier's "little book" (a mere 478 pages of folio!) to be "the most distinct and best connected account" of physiocratic doctrine.

As an economic theorist, Le Mercier was quite unoriginal and merely digested Quesnay's raw material of analysis. And, with a penchant for Quesnay's style of feudal despotism, Le Mercier may seem a rather unlikely champion of political liberalism, but at moments he does reach out for the sublime harmonies of economic liberalism. "La pleine & entière liberté de commerce" may be the centre-piece of Le Mercier's system, but competition is the hard-working and

¹ ibid., pp. 27, 32 and 62-80.

² Necker, Sur la Législation et le Commerce des Grains (1775), 2nd ed., Paris, 1775, Part II, ch. III, p. 136. Necker's theoretical grasp is quite deficient.

³ Le Mercier de la Rivière, L'Ordre Naturel et Essentiel des Sociétés Politiques, London, 1767. His L'Intérêt Général de l'Etat, Amsterdam, 1770, is a very similar work.

law-like regulator of human affairs, "la seule autorité" which fixes prices at their proper level and thereby is the "arbitre naturel & souverain" which puts economic goods at their "juste valeur."¹

In Le Mercier's grand synthesis, we can see how the mercantilist notion of competition as conflict had been quite thoroughly sublimated into a principle of harmony:

... les prétensions du vendeur & de l'acheteur, quoiqu'elles soient opposés entre elles, se concilient cependant parfaitement: voilà comment chacun d'eux est obligé de se soumettre à la loi qu'il reçoit de la concurrence, ... ils sont liés par un intérêt commun,

or as he puts it elsewhere, "les intérêts de ces deux hommes se concilient parfaitement malgré leur opposition apparente," and thus competition yields "la perfection de l'ordre qui prouve à chaque partie son meilleur état possible," and this perfection consists in an "équilibre habituel" insofar as "la concurrence & ses effets sont les produits d'une nécessité physique."²

And, finally, employing these new premises, Le Mercier re-invokes the old mercantilist thesis of Wheeler and Parker, "~~l'intérêt particuliers de ces membres,~~" and ^{that} ~~so~~ what applies to the individual applies to the nation as a whole. We have come full circle! But the logic and the implications are new.

However, physiocracy did not become the classical liberal synthesis, even if it did manage to enunciate several of the elements which would eventually enter into that synthesis. Physiocracy was an over-reaction to mercantile logic. It substituted one extreme theory of wealth for another, and its logic of price formation was quite deficient. To say that manufacturing and commerce were "stérile" because economic exchange was only a transfer of equivalents was in the long-run an intolerable theory of economic behaviour. Both mercantilism and physiocracy gave unsatisfactory explanations for market exchange.

¹ L'Ordre Naturel, pp. 225, 494.

² ibid, pp. 361, 364, and 504.

What was needed was a new and improved economic calculus in which the act of economic exchange was shown to be productive. Latter-day physiocrats were already beginning to recognize this need for a theory of value which would connect production of wealth to exchange. In 1777, Le Trosne, for example, was pointing in this direction when he wrote that competition may establish "les rapports de 'échange," but one must go further than that: "il faut aller plus loin, & rechercher quelle est la cause ultérieure de la valeur."¹

As it happens, the man who found the missing links and who successfully integrated the principle of competitive market exchange into a new economic calculus of value, production and wealth was not a Frenchman, nor a physiocrat, but a Scot who by coincidence happened to be in France during the flamboyant days of 1766 when physiocracy was experiencing its moment of triumph. Before we turn to that new classical synthesis, we must first return to the land where it had all begun, and briefly survey the intellectual scene as it stood just as Adam Smith was completing the final draft of his classic.

5. On the Eve of "The Wealth of Nations"

Strangely enough, during the twenty-year period of French ascendancy, from 1756 to 1776, economic thought in Great Britain had been languishing. And this was so in spite of the fact that it had been none other than Hume and Tucker who provided the French with their much needed stimulus!

As progress was beginning to accelerate in France during the 1750s, the forward-looking essays and pamphlets of Tucker and Hume seemed to have had ^{had} little or no impact on theoretical speculation in Great Britain where they were outnumbered by weighty tomes culling up memories of the commercial past; Magens' The Universal Merchant (1753, as translated by Wm. Horsley), Postlethwayt's Universal Dictionary of Trade and Commerce (1757, adapted from Savary des Bruslons), and Adam Anderson's Historical and Chronological Deduction of the Origin of Commerce (1764) may have had modest theoretical aspirations. Nevertheless, they struck

¹Le Trosne, De L'Ordre Social, Paris, 1777, p. 507.

the predominant note of the times and overshadowed the more adventuresome but rather unfinished pamphlets of men like Joseph Massie and Joseph Harris who in some ways reflect the style of Tucker and reveal some undeveloped affinities with Adam Smith, prior to any French influence.¹

Towards the end of the 1760s, physiocratic notions and styles were beginning to filter through, such as in Whately's Principles of Trade (1769) and Cunningham's Essay on Trade and Commerce (1771). But these were slight works and quite unimpressive. Surprisingly enough, those who dealt specifically with agricultural economics at this time were relatively immune to the physiocratic epidemic which was sweeping across the continent. Writers like Charles Smith and Arthur Young were too vigourously empirical and practical to be swept off their feet by the dogmatic excesses of Dr. Quesnay and his sect.² So, too, was James Anderson who, in his Observations on the Means of Exciting a Spirit of National Industry (1777), even subjected Adam Smith's case for free trade in grain to a penetrating criticism which questioned the application of theory to practice.³

None of the works cited above offer anything especially new or interesting in regard to the theme of competition. If any works merited comment here as a prelude to the study of Adam Smith, they would be Sir James Steuart's huge Inquiry into the Principles of Political OEconomy (1767) and Thomas Mortimer's Elements of Commerce, Politics and Finance (1772).

Steuart's Inquiry is moderate in tone, eclectic in derivation,

¹In particular, Harris' Essay upon Money and Coins, Part I, London, 1757.

²Charles Smith, Three Tracts on the Corn Trade, London, 1766, the first two from 1758 and 1759. Prominent among Arthur Young's many publications are Rural OEconomy, London, 1770, and Political Arithmetic, London, 1774.

³James Anderson, Observations, Edinburgh, 1777. See his Postscript to Letter XIII, pp. 309-86.

ambitious in size and scope: but lacking in analytical clarity and having no grand design to hold its many parts together, Steuart's efforts were soon forgotten after 1776. At one point, the author all too modestly confessed, "I feel a great want of language to express my ideas,"¹ but sadly his text does suffer from a surplus of jargon which is readily apparent when he comes to discuss his "new principle of commerce," namely, what he terms "Double Competition." In fact, his new principle amounts to an awkward re-statement of some very old ideas about the relationship subsisting between supply, demand, price, and the numbers of buyers and sellers in the market for a single product. Significantly, Steuart's work appeared in the very year, 1767, when the debate on competition in France had reached its peak. Steuart was very open to continental currents of thought, and the rather concentrated treatment he gives to competition, employing competition and its cognates fifty-one times in ten pages and several hundred times throughout the remainder of his text, shows how much the concept was under scrutiny at that time.

Mortimer's Elements of Commerce stands in a somewhat different light. Something of a scholar, Mortimer remained true to the older tradition, offering an extended defence of "Public Commercial Companies," generously supported by quotations from Child, Gee and even Cary. Writing before Adam Smith had burst upon the scene but in the wake of the physiocratic movement, Mortimer conceived of the "grand question before us" as being one of "civil liberty" pitted against "natural liberty." Under the principle of a "free, open, unlimited exercise of trade," there would follow only "the utmost confusion and disorder."²

Thus, Mortimer gave a last desperate expression to the mercantilist sentiment for national rivalry:

¹Sir James Steuart, An Inquiry into the Principles of Political OEconomy, 2 vols. (1767), ed. Andrew S. Skinner, Edinburgh and London: Oliver and Boyd, 1966, Vol. I, p. 172.

²Thomas Mortimer, The Elements of Commerce, Politics and Finance, London, 1772, pp. 146-7.

COMPETITION, or rivalry, between private adventurers, has often proved the bane of particular branches of commerce; but when it subsists between the public company of one nation, and that of another, its rival in arms, arts, and commerce, it generally proves highly beneficial to that nation, whose commercial affairs are conducted by their company with the most skill and integrity.¹

Mortimer condemns the "clashing of interests" in domestic trade, with its "destructive" and "unfair schemes of rivalry," the "intrigues and cabals of private inland traders, the stratagems and unfair practices they make use of to undermine each other," and so forth.² But the same principle of competition, when applied to nations as a whole and their representative companies is depicted as a "beneficial, equitable, honourable, and compatible" feature of the "great mercantile society."³

Mortimer's romantic look back to mercantilism was reprinted (without change) in 1780, with no mention of Adam Smith or The Wealth of Nations. For that, we must wait until 1801, long after Smith's death, for Mortimer's revised edition, wherein, if we persevere and reach page 438, in a chapter on finance, we shall learn of the current "rage for reading and adopting the fallacious principles of Dr. Adam Smith, in his too much celebrated work on the Wealth of Nations."⁴

Of course, Mortimer did not attempt any critique of Smith's work. At least Mortimer knew better not to try.

¹ ibid., p. 135.

² ibid., pp. 65, 74 and 135.

³ ibid., p. 135, 147.

⁴ Mortimer, Lectures on the Elements of Commerce, Politics and Finance, London, 1801, p. 438.

Chapter III

THE CLASSICAL TRADITION

1. Adam Smith's Classical Liberal Synthesis

When one examines firsthand the multitude of individual works comprising the history of economic thought and takes note of the gradual evolution of ideas, a process which quickens at times to an almost month-to-month and day-to-day progression and slackens at other times to decades and longer, the notions of "originality," "discovery of new ideas," the subjective independence of mind which supports intellectual advance, these almost seem to become inoperative.

In historical retrospect, the flow of ideas appears to take on an air of inevitability which the individual can do little to modify. The vast bulk of this mountainous accumulation of economic literature thus consists of sheer repetition of trivial variation upon previous themes. Thus it is that the very weight of his scholarship led Schumpeter to conclude: "the fact is that the Wealth of Nations does not contain a single analytic idea, principle, or method that was entirely new in 1776."¹

Surely this is another of Schumpeter's exaggerations of a half-truth. Priority of claim can be given to The Wealth of Nations on many points of analytical detail. Yet, considered alone, these would not make The Wealth of Nations the classic that it is, and many similar points of analytical detail can be found in abundance throughout the works of Hume, Tucker, Massie and Steuart. But, where these men merely hinted at possible solutions, Smith seized upon the idea of labour as the source of wealth (or the main source) and upon the idea of the division of labour as the justification for economic exchange, and from these constructed a marvellous theoretical account of production and distribution.

Thus, Schumpeter's argument in essence is valid: Smith's great achievement was in synthesis, not analysis. Adding one or two key analytical

¹J.A. Schumpeter, History of Economic Analysis, New York: Oxford University Press, 1954, p. 184.

elements of his own, Smith built up his system by a judicious re-interpretation of physiocratic thinking. Originality, progress, creativity - these consist of more than just identifying the constituent elements. They also entail the putting together of these elements into a coherent whole.

Now, in all of this, it will be said and must be admitted that competition was that "connecting principle"¹ which held all the parts of Smith's system together. Here again, the question of originality arises. Though Smith did add a few wrinkles of his own to the subject, these minor innovations do not change the fact that Smith took the idea of competition pretty much as he had found it in the French literature of the 1760s and left it as it was, with no major conceptual alterations to speak of. What is important is not what Smith did to the idea itself but how he integrated it into his economic calculus.

Indeed, much the same thing can be said of the broader concepts of economic liberalism as we find them in Smith's work. The task of reconciling the individual's freedom to pursue his own self-interest with that of the general interest had been dealt with at great length over the preceding twenty years, and by 1767 works such as Le Mercier's L'Ordre Naturel (one of the very few theoretical treatises that Smith was to cite in 1776) had already established the principle of competition as one of the vital concepts in economic liberalism.

Smith added nothing essential to the concept of competition, viewed as a broad principle of political and economic behaviour, that could not already be found in Le Mercier's earlier treatise. What was missing in Le Mercier's and other physiocratic writings was a satisfactory economic calculus to go with the broader principles of behaviour. Any theory of society which depicted most

¹In his posthumously published Essays on Philosophical Subjects (ed. Dugald Stewart, London & Edinburgh, 1795, pp. 20ff.), Smith described philosophy as the "science of the connecting principles of nature," referring to these principles as "the invisible chains which bind together all these disjointed objects" (i.e. of our natural experience). See his Essays Philosophical and Literary, eds. J. Black and J. Hutton, London: Bohn Library, n.d., pp. 327-84, as well as James Bonar's comments in The Tables Turned, London, 1926, pp. 14-16. In fact, nowhere did Smith ever refer to competition as a principle.

of its members as being economically "sterile" or "unproductive" was bound to fail. Smith's greatest single accomplishment was to show how commerce and manufacturing - though they may involve an exchange of equivalents - were still productive, in that market exchange, regulated by competition, allowed for the division of labour to make more productive use of resources.

Thus, The Wealth of Nations is a classic not because it was first to enunciate the fundamental principles of competition and liberalism. In this regard, it came at the end, rather than at the beginning, of the truly liberal intellectual tradition. It is a classic because it gave to economic liberalism its first really sound economic calculus. In a more fully comprehensive history of economic thought, much more attention would be devoted to Smith's calculus than I can give here. So influential has The Wealth of Nations been in shaping economic thought that I shall accord to it far more detailed coverage - for the peculiarities it brings to various competitive themes - than it might otherwise deserve, if only because those peculiarities gained much more prominence by being part of this immensely influential classic.

History can be written and read backwards or forwards. Written forwards, it shows how from a given starting point one thing led to another. Written backwards, it shows how a certain state of affairs was arrived at by selecting those segments from the past which move closer towards the final position to be reached. Up to this point in the narrative, I have tried to present the material as a developing sequence, not as a series of "anticipations." I shall retain that purpose in treating of Smith's work, though in drawing some conclusions from his work, I shall also employ his text to look forward to (that is, to anticipate) some of the problems posed by the classical tradition.

a. The Formation of Smith's Thought, 1751-1776:- After studying classics at Balliol College, Oxford,¹ from 1740 to 1746, Smith returned to Scotland and reputedly was delivering a series of "public" lectures on jurisprudence in Edinburgh from 1748 to 1751. From 1751 to 1763, he occupied the chair of moral philosophy at the University of Glasgow. His first major work, published in 1759, was The Theory of Moral Sentiments. In spite of Professor Scott's prodigious researches into these years of Smith's life, there is no solid evidence to confirm that he had turned seriously to the subject matter of economics before 1761.²

The Theory of Moral Sentiments reveals the mind of a man who is just beginning to entertain an interest in economic questions and who is having first thoughts of writing a book about them.³ Like Mandeville and other moral theorists of that age, he now and again turns incidentally to an economic context to illustrate a moral proposition, but the historian will be hard put to discover

¹In view of what is said below concerning Smith's lack of interest in the subject of economics prior to 1760, these facts should be mentioned: Josiah Tucker studied at St. John's College, Oxford, receiving the degrees of B.A. in 1736, M.A. in 1739 and D.D. in 1755. Smith arrived at Balliol a few years after Tucker left for Bristol (1737). Amazingly enough, there is no firm textual influence of Tucker in Smith's writings, at least, not in regard to Tucker's vital writings from 1748 to 1755. By 1776, Smith seems to have been familiar with Tucker's pamphlets on the colonial question. See W. E. Clark, Josiah Tucker: Economist, New York, 1903, pp. 224-5 and R.L. Schuyler's introduction to Josiah Tucker: A Selection from his Economic and Political Writings, New York, 1931, pp. 16 and 37. Smith's reconstructed "library" contained Tucker's Brief Essay on Trade (6th ed., Glasgow, 1756) and a bound volume of various key pamphlets by Tucker ranging from 1749 to 1757. (See Bonar's Catalogue of the Library of Adam Smith, 2nd ed., London, 1932, pp. 187 and 146-7). Unfortunately, we do not know when Smith acquired them.

²W.R. Scott, Adam Smith as Student and Professor, Glasgow, 1939. Unfortunately this thesis was written before I was able to take advantage of any new material that might have been discovered as part of the projected edition of Smith's work to appear in 1976 from the Oxford University Press, under the auspices of the Scottish Economic Society. Jacob Viner reviewed the mythology built up around Smith's early days in his introduction to the reprint of John Rae's Life of Adam Smith (1895), New York: A.M. Kelley, 1965, but scholarship on Smith's background has produced remarkably little substance to date.

³The Theory of Moral Sentiments, 1st ed., London & Edinburgh, 1759. On pp. 354-55, he seems to be mulling over the possibility of writing a "disquisition" about a "system of public police," concerning among other things economic affairs, stressing the removal of "obstructions," but his reference here to "harmony" and the "invisible hand" (p. 350) have nothing to do with "liberty" (a term which does not appear in this context and only rarely arises elsewhere in the 1759 edition). Apparently, Smith added "liberty" to his "natural Law" philosophy only after having written his treatise on moral sentiments.

in these pages any sign of a coherent philosophy or calculus of economics.

By great good fortune, however, we do possess some solid documentary evidence of the state of Smith's thinking by about 1763-65 en route to The Wealth of Nations, namely, a manuscript entitled "Juris Prudence, or Notes from the Lectures on Justice, Police, Revenue and Arms delivered in the University of Glasgow by Adam Smith," written by an amanuensis or a student of Adam Smith and dated 1765;¹ and another manuscript which Scott has entitled "An Early Draft of Part of the Wealth of Nations."² The exact dating of these MSS is uncertain, but insofar as they are reliably placed in the period from 1761 to 1765, the exact date of origin is unimportant and does not alter the significance of their contents.

What the "Lectures" and "Early Draft" serve to establish is of a dual nature: not only that many of the characteristically Smithian ideas of 1776 were being formulated as early as 1765 (and earlier), but also that Smith was at this earlier period quite familiar with and influenced by ongoing currents in France.

As to the former of these two conclusions, the extended treatment Smith gave to what he had already termed the "division of labour" is perhaps the most noteworthy aspect of the two manuscripts. Beyond this, one could cite such things as his opposition to monopolies, "exclusive privileges" and other "obstructions" to free trade, as well as reference to the idea of general equilibrium, the "natural balance of industry, or a disposition in the people to apply to each species of work precisely in proportion to the demand for that work," as ample evidence that Smith was in step with the liberal and scientific currents of his time.³

It must be said, at the same time, that Smith was not especially ahead of his contemporaries in every respect, but that he was undoubtedly

¹It is published under the title: Lectures on Justice, Police, Revenue and Arms, ed. E. Cannan, Oxford: Clarendon Press, 1896.

²The text is given in Scott, op. cit., pp. 322-56.

³ibid., p. 346.

influenced by ongoing events. For example, by 1764-5 he had not yet fully worked through his labour theory of value; nor had he gone so far as to say that pursuit of self-interest actually promoted the general interest (as Tucker had already done by 1755). Indeed, even by 1764-5 Smith's appeal to what he called "natural liberty" was still rather juristic in its associations, pointing more to the sphere of natural law in the jurisprudential style of Grotius and Pufendorf than in the commercial sense of the French writers at this same time.

Much scholarly ink has been spilled in deciding whether or not (or to what degree) Smith was influenced by the debate in France, with the focus placed upon Smith's peculiarities in spelling: the plural "capitals" (as in the French "capitaux"), "police" for the more usual "policy," and so on.¹ Obviously, Smith was not writing in an intellectual vacuum. That he was more influenced by French than English economic literature, ironically enough, is strongly suggested by the specific case of competition! Throughout the "Draft" and the "Lectures," the word competition appears but once,² and it was apparently misspelled at that! On the other hand, Smith employs the word concurrence in its French rather than its English sense, on three separate and theoretically significant occasions, in both of these early manuscripts. I shall cite these below. Notice that in the third instance, Smith implies that there can be more competition than is "natural."

... as more people would flock to this labour where the wages are high, through this concurrence of labour, the wages would come down.

... It is the concurrence of different labourers which always brings down the price.

... the market price can never, for any considerable time, be either above, or below, that price which is sufficient to encourage the labourer, unless there is some great error in the public police, which prevents the concurrence of labour when the price is too high, or forces a greater concurrence than is

¹See Viner's comments in Rae, op. cit., pp. 132f, for further references.

²"Draft," from Scott, op. cit., p. 333. This, presumably the first recorded reference by Smith (in the hand of his amanuensis), was not only originally misspelled (the 5th and 7th letters of competition having been transposed and then corrected) but even has a faintly mercantilist context, mildly reminiscent of Tucker's recent publications: "... so among great societies, a rich nation must always in every competition of commerce and manufactures have an equal, or superior advantage over a poor one." Where is Hume's theory here?

natural, when the price is too low.¹

By a remarkable coincidence - or is it? - Smith spent the better part of three years, 1764 to 1766, in France and mainly in Toulouse, at the very time that the physiocrats were coalescing into a school and gaining pre-eminence in the salons and intellectual circles of Paris. Thus, Smith was exposed to the full force of the dogmatics of physiocracy at the moment of its maximum acceleration. It does not matter whom Smith may have met in personal conversation while in France; for, as Viner has noted,² Smith's spoken French was limited, and most of what he assimilated was from French literature.

According to his own account, Smith began the first serious drafting of The Wealth of Nations while in Toulouse in 1766. That he was carried along by current physiocratic thought cannot be doubted. This influence becomes all the more apparent when we realize that the full text was written very slowly over a period of almost ten years. Smith was a slow worker and did little revision, and the major shifts in tone and subject matter between the first four books and the last huge Book V (whose inconsistencies with the previous books are now legion) can largely be accounted for by the fading influence that physiocracy exerted over Smith's work after 1770.³

I shall return to this question of physiocratic influence, after surveying the text of The Wealth of Nations for what it has to say on the subject of competition.

¹"Lectures," ed. Cannan, op. cit., pp. 178, 179, and "Draft," from Scott, op. cit., p. 346. I should point out that Smith also uses concur and concurrence in the rather archaic neutral sense (closer to the English meaning of agreement) on several occasions ("Draft," pp. 332, 334, "Lectures," p. 236), such as in "the concurrence of different causes," as well as in his example of two greyhounds running together in pursuit of the same hare ("Lectures," p. 169, "Draft," p. 339), a delightful example which lived on to see the light of day in The Wealth of Nations (Book I, Ch. II). This "running together" of the greyhounds is similar to the "flocking together" of labourers in competition for wages. Smith's archaic usage is quite uncharacteristic of the economic literature of the 1760s and not only reflects his earlier education and familiarity with the Latin and Greek classics but also confirms his relative lack of familiarity with contemporary economic literature in England. And, it is amazing that before Smith reached the classical liberal concept of competition, he passed through the ancient classical (i.e. Latin) and late mercantilist phases in the development of the term!

²Viner in Rae, Life of Adam Smith, (ed. 1965), introduction, p. 129.

³Scott, op. cit., pp. 114, 121 and passim, discusses Smith's slow working habits and probable order of writing of The Wealth of Nations.

b. Competition in "The Wealth of Nations":- In what follows, I shall cite from Cannan's edition of The Wealth of Nations (2 vols., 1904),¹ and all passages originate from the first edition of 1776, unless otherwise indicated. All in all, the word competition and its cognates appear about 150 times throughout his full text, with one or two very minor changes made in subsequent editions, save for several interesting additions to the 3rd edition of 1784. Most of these occurrences (more than one hundred) are concentrated in Books I and IV where, of course, Smith was dealing with the familiar competitive themes of price theory.

Let it be clearly understood at the outset: Smith did not see himself as some new champion of the principle of economic competition, nor more than did he for one instant think or pretend that he had discovered some new principle called competition. That term had already been worked to a "Fair Thee Well" by French theorists in the 1760s. Smith's endorsement was for the System of Natural Liberty, and nowhere in his text is competition proclaimed a principle governing economic behaviour. The closest that competition comes to occupying the center of the stage is in this passage:

All systems either of preference or of restraint, therefore, being thus completely taken away, the obvious and simple system of natural liberty establishes itself of its own accord. Every man, as long as he does not violate the laws of justice, is left perfectly free to pursue his own interest his own way, and to bring both his industry and capital into competition with those of any other man, or order of men.
(I, 184).

Even though the word competition is not consciously or prominently advertised, nor is ever the central focus of Smith's thought patterns, it does subtly acquire a significance in his work because of its strategically active (even if quietly active) role throughout the theoretical portions of his text.

In almost all of his theory on prices and markets, Smith pits

¹An Inquiry into the Nature and Causes of the Wealth of Nations, 2 vols., ed. Edwin Cannan, London: Methuen, 1930, from Smith's 5th edition of 1789 and variant: from previous editions. I shall cite volume and page number within the main text hereafter, for brevity.

competition sharply against monopoly, perhaps more so than in the contemporaneous French literature, and this contrast serves to heighten both the scientific and normative significance he attaches to competition:-

... The price of monopoly is upon every occasion the highest which can be got. The natural price, or the price of free competition, on the contrary, is the lowest ... (etc) (I, 63).

Monopoly, besides, is a great enemy to good management, which can never be universally established but in consequence of that free and universal competition which forces everybody to have recourse to it for the sake of self-defence. (I, 148).

The essentials of Smith's economic calculus - his theories of price, value, production, exchange and distribution - are developed in Book I, starting with Chapter VIII ("Of the Natural and Market Prices of Commodities") and followed by four crucial chapters on wages, profits and rent. In these, Smith was by no means original in assigning to competition the role of an equilibrating and regulating process, and to grasp the theoretical part played by competition in all of this, we need not enter any further into the analytical subtleties Smith brings to his study of the various equalities and inequalities existing between the "natural," "ordinary," "current," "market" and other levels of prices, values, costs, wages, rents and so on.

Suffice it to say that the influence of Cantillon (whom he cites) is very noticeable in Smith's choice of terminology and emphasis but that Smith's articulate expression and comprehensive account of the inter-relationships involved went a long way past anything (save perhaps Turgot's Réflexions) that could be found in the French literature at that time. Though Smith did not follow the French practice by using the word, equilibrium, he nevertheless quite brilliantly invokes the ideas of both partial and general (or single and multi-market) equilibrium, with such terms as balance, equality, and proportion.

Like Cantillon, Smith saw competition as an imperfect process of market equilibration in which the "higgling and bargaining" of buyers and sellers led only to a "sort of rough equality" (I, 32) and whereby the "ordinary rate of profit" varies "more or less with the certainty or uncertainty of the returns,"

(I, 112). The idea that competition is something that can be perfect is not to be found in The Wealth of Nations.¹ Judged by modern standards, Smith does little to support his theoretical claims as to the equilibrating tendencies of competition. These are largely intuitive judgements supported by some plausible common sense, but his account is graphic in its descriptive detail and quite lucid by the standards of his own day. Particularly impressive are his many illustrations of the "deranging" effects of monopoly as compared with the "natural balance" reached through free and open competition.²

So far in this very abbreviated survey of Smith's text, I have touched upon only those very general characteristics of competition which would have most impressed themselves upon the minds of readers in Smith's day insofar as his work made advances beyond the prevailing state of economic analysis. But these few comments hardly begin to exhaust the potential list of observations one could make on the many and varied aspects of competition that Smith alludes to. Admittedly, quite a number of Smith's 140-odd references to competition are either repetitious or else trivial and insignificant. Even if we overlook these, much is still left to be explored.

To round out this summary, I shall merely list three or four of the many items that could be delved into at greater length. Some of this call for critical assessment and interpretation, and therefore will be met again in the sub-section to follow immediately. First, in conformity with the prevailing French fashion, Smith modifies competition with the adjective, free, on about fourteen occasions, but the phrase "free competition" possesses no special or precise meaning which distinguishes it from the meaning of the word competition when standing alone. Second, Smith reinforces the very old idea that competition is

¹In his summary of "The Agricultural Systems" (or physiocracy) in Book IV, Ch. IX, Smith uses the phrase "perfect liberty," and the phrase sticks for a while, but his own phrase is "natural liberty."

²These are found mainly in Book I, Ch. X, pt. II ("Inequalities Occasioned by the Policy of Europe", I, 120-45) and Book IV, Chs. II-VIII. These are surely some of Smith's most stirring and impressive passages which, unfortunately, space prevents me from delving into in detail.

"increased" (or alternatively "reduced") when the number of competitors is increased (or reduced), though on one or two occasions he also suggests that the "eagerness" (i.e. intensity) of competition may vary for reasons having nothing to do with the numbers of competitors (I, 58; II, 136, 239).

Third, Smith devotes a great deal of space to the study of such "dynamic" subjects as economic growth and development, evoking the all-pervading theme of technological change with his phrase, the division of labour. Yet, virtually all of Smith's references to competition are in regard to its role as an equilibrating process. One or two exceptions, where competition is depicted in a more dynamic setting, will be cited in the following sub-section. Finally, one set of comments, added to Book V in the 3rd edition of 1784, are quite uniquely "Smithian" in character, though, as I have alluded to in a previous chapter, they may well have drawn their inspiration from the much earlier work of John Trenchard.¹ Smith brings out a new aspect of the disciplining character of competition when returning to the much discussed subject of incorporated companies and their exclusive monopoly privileges: "bad management" is attributed to the absence of any external competitive discipline (II, 223-248).

c. "The Wealth of Nations" in Retrospect:- Adam Smith's classic work constitutes not only a vast summation, an all-encompassing synthesis of the preceding seventy-five years of economic thought, it also served as the point of departure for much of the economic thought of the next one hundred years. By reading history "forwards," we can see how Smith raised the level of economic speculation to a new plateau clarity and coherence. By reading history "backwards" we can find in the text of The Wealth of Nations the source of many theoretical problems which were to preoccupy men's minds throughout the 19th century.

So influential was The Wealth of Nations to prove, that any full appreciation of its significance must include critical judgements which look both forwards and backwards. The influence of physiocrats and of French writers in

¹See above, Chapter II, section I.

general was noted earlier in this chapter. Smith took their analytical apparatus and improved upon it immensely. Much of 19th century economic thought consists of attempts to improve or revise Smith's theories of value and growth. These subjects bear little upon competitive themes in their technical detail.

But Smith also built upon many of the broader principles of economic liberalism as he had found them in the French literature. Though he was to some extent carried along by their unbounded enthusiasm through the 1760s, Smith's attitude to the same subject is relatively free of the dogmatic excesses and rhetorical appeals to self-evident truths which so detract from the physiocratic contribution. We find no mention of "universal," "absolute" and "immutable" laws in The Wealth of Nations; indeed, Smith does not even use the word law in its scientific sense, and Hollander has suggested¹ that he quite deliberately avoided all the trappings of their "scientific" approach in order to dissociate himself from the dogmatic approbrium under which the "Economistes" had fallen by 1776.

However, Smith did inherit from the French a number of the obvious and unquestioned tenets of liberalism, and since many of these were to have a bearing upon the major doctrinal debates of the 19th century and point to the problematical character of competition, I shall briefly review them here, in anticipation of later discussion.

First, Smith accepted a view which was long in the making, namely, that there was something that could be called "free competition" and that this was a good thing. To repeat, "free competition" was a phrase designed to capture the meaning of free entry into competition, against the background of medieval restrictions and regulations, and the constant use of this unfortunate phraseology gave rise to the belief that competition was essentially freeing in its effects.

¹J.H. Hollander, "The Dawn of a Science," in Adam Smith 1776-1926, ed. J.M. Clark et al, Chicago, 1928, pp. 15-16.

Can we attribute this erroneous implication to the author of The Wealth of Nations? Granted, in formulating his principles for the "natural system of liberty," Smith does insist that "Every man ... is left perfectly free to pursue his own interest his own way" (II, 184), but can we conclude from that alone that Smith saw competition solely as freeing and that there were no compelling or coercive forces involved in his "system of natural liberty"? Certainly not.

In the very opening chapters, in which the concept of the division of labour is introduced, Smith indicates that he is supremely aware of the nature of competitive interdependence. "Without the assistance and co-operation of many thousands, the very meanest person in a civilised country could not be provided," (I, 14) and so each individual in society "stands at all times in need of the co-operation and assistance of great multitudes," (I, 16). But, in pursuit of his or her own self-interest, each individual must appeal not to the "benevolence" but to the self-interest of others (I, 16). Thus, interdependence is a compound of both dependence and independence, neither of which components are absolute,

And Smith provides plenty of examples in which both the freeing and constraining effects are apparent. This duality is unmistakable, for example, when Smith writes:-

... where the competition is free, the rivalry of competitors, who are all endeavouring to jostle one another out of employment, obliges every man to endeavour to execute his work with a certain degree of exactness. (II, 249, my emphasis added).

And throughout the pages of The Wealth of Nations, competition is depicted not only as "obliging" certain types of behaviour; it "forces" (I, 148), "hinders" (II, 78, 108), "regulates" (II, 351), "disciplines" (II, 252-3), and in various other ways Smith intimates that it compels, coerces, and constrains as much as it frees.

Another possible erroneous and misleading impression can be gained

from The Wealth of Nations, that competition is solely equilibrating in tendency and thereby a principle of order and stability, rather than of change. Once again, this is an impression which is built up unconsciously by Smith and was largely inherited from the French writers and their concern with equilibrium. This type of imbalance in emphasis in Smith's text may come as a surprise, for Smith was pre-eminently a theorist of economic change as well as of equilibrium, and his work on growth is unquestionably a major contribution to economic thought, to say nothing of the concept of division of labour which is virtually synonymous with technological change and progress.

Why, then, have I alleged that Smith presented competition almost solely in its equilibrating aspects? Quite simply because in all of the 140-odd occurrences of competition and its cognates throughout The Wealth of Nations, there are only one or two occasions where the dynamic and dis-equilibrating effects of competition can be traced, whereas throughout all of his discussion of the division of labour and of material progress, the idea of competition is noticeably^e by its absence. Smith's chief theorem was that the division of labour is limited by the extent of the market and that the extent of the market depends upon capital accumulation.

There are, however, one or two face-saving passages in which the common-sense idea of competition as a dis-equilibrating process is quite clearly indicated. The two examples to follow were added to the 3rd edition of 1784:-

... The increase of demand ... encourages production, and thereby increases the competition of the producers, who, in order to undersell one another, have recourse to new divisions of labour and new improvements of art which might never otherwise have been thought of. (II, 239).

... To buy in one market, in order to sell, with profit, in another, when there are many competitors in both; to watch over, not only the occasional variations in the demand, but the much greater and more frequent variations in the competition, ..., is a species of warfare of which the operations are continually changing, and which can scarce ever be conducted successfully without such an unremitting exertion of vigilance and attention as cannot long be expected from the directors of a joint stock company. (II, 245).

To these vivid and revealing passages, one could add a few more examples from

both The Theory of Moral Sentiments and The Wealth of Nations which directly or indirectly relate the ideas of ambition, striving for excellence and hence progress, change and improvement, to the phraseologies of "emulation," "rivals" and "rivalship" and thus to competition.¹

However, these few stray exceptions serve not to change the basic imbalance in Smith's text but only to confirm that the imbalance was not a deliberate attempt to portray competition as solely equilibrating but only an unintended impression created by his choice of theoretical arguments. Had he been asked whether competition was any more equilibrating in tendency than dis-equilibrating, well ..., we can only guess what his answer might have been.

There remain several more problematic features which lie deeply rooted in the fertile ground of Smith's work and which would take many years to come to the surface and be weeded out. Most of the following items center upon the ambiguities and subtleties of competitive, co-operative and conflictual grouping and group inter-action. The limits imposed by space here require that I pass over these intricate and far-reaching problems very briefly.

Smith very forcefully advanced the view that large-scale organizations, employing large sums of capital and many individuals, were economically inefficient. This argument, in effect added only to the 3rd edition in 1784 (II, 223-248), was not the familiar classical argument against the "deranging" effects of monopoly, but a more modern and forward-looking case concerning managerial efficiency. Smith believed that larger organizations were less competitive and less competent to engage in dynamic enterprise because their leaders lacked the motive, the ability, and the necessary stimulus to direct day-to-day operations in the same way that more flexible small-scale enterprises could adapt and innovate.

Undoubtedly, Smith drew this broad conclusion on the basis of the older overseas trading companies, and must have been unaware of contemporary

¹The Theory of Moral Sentiments, 10th ed., London, 1804, Vol. I, pp. 98-9, 120 and 234; also The Wealth of Nations, ed. Cannan, II, 249ff.

developments in the field of manufacturing, especially in the dynamic developments of cotton manufactures which gave the Industrial Revolution its greatest single stimulus. By 1848, John Stuart Mill was to provide a more balanced assessment of large-scale economic organization, wherein he concluded that Smith's position was an "over-statement of a true principle,"¹ and by 1912 Professor Scott was to charge Adam Smith with an inadequate presentation of the facts on the overseas companies themselves.²

Even by the 1970s, empirical evidence has by no means made the true relationships between scale and efficiency clear, but Smith's negative attitude towards large-scale organization was accompanied by a more serious theoretical ambiguity. In his "System of Natural Liberty," he interpreted natural to mean the "natural effort of every individual to better his own condition" in such a way that pursuit of self-interest was pitted against not only the "folly of human laws" (II, 43) but also against "human institutions" which had somehow "disturbed the natural course of things," (I, 358).

Now, whatever these statements may have been intended to imply about freedom, individuality, and independence, Smith also observed that it was the "usual, and one may say, the natural state of things" for employers (i.e. masters) to be in "a sort of tacit, but constant and uniform combination, not to raise the wages of labour above their actual rate," (I, 68); that the "natural genius" of regulated companies is to "confine the competition to as small a number of persons as possible," (II, 225); that it is "always the interest of the dealers" in any branch of trade to "widen the market and to narrow the competition," (I, 250).

In other words, in the pursuit of self-interest, Smith recognized that "natural" could mean many things. The natural pattern of competitive grouping is not clear. Thus, like Josiah Tucker before him, Smith did not totally reject the

¹J.S. Mill, Principles of Political Economy, ed. W.J. Ashley, London, 1909, p. 140.

²W.R. Scott, The Constitution and Finance of Joint-Stock Companies to 1720, 3 vols., Cambridge, 1912, Vol. I, pp. 448-58.

mercantilist point of view,

... The interest of a nation in its commercial relations to foreign nations is, like that of a merchant with regard to the different people with whom he deals, to buy as cheap and to sell as dear as possible. (I, 429),

but instead, he corrected some of its errors and adapted its logic to the changing circumstances of international trade in the 18th century. Thus, under former conditions of trade it might have been wise to establish joint stock companies with temporary monopoly privileges (II, 224, 245) and the Act of Navigation may have been the "wisest of all the commercial regulations of England," (I, 429). But the logic of the situation in the 18th century demanded that there be "the most perfect freedom of trade" for national gain to be maximized, for international trade was now too open for single national companies to exert any monopoly power over prices; they merely restricted a nation's productive capacity.

By 1776, mercantilism was a thing of the past. Classical liberalism put the individual in the forefront. And yet, looking to the future with the benefit of historical hindsight, we can now see that the new and intricate problem that classicism was to pose did not concern the individual versus the nation, but one class or "order of society" (as Smith expressed it) standing in relation to another. Again, the influence of the French literature is apparent. The question posed was this: Is the "class" relation one of harmony or conflict? The physiocrats contended that society was fundamentally harmonious, but the policies they put forward did little to create or maintain this impression.

One of the reasons why The Wealth of Nations eventually found such wide support was that Smith rose above the physiocrats' rather narrow class loyalties and with a fair degree of dispassionate objectivity he portrayed each of the three major orders or classes, as he understood them, in favourable terms whereby each had its legitimate role and economic function to play. Each was a "productive" class, even if Smith himself may have retained a certain lingering sympathy towards the landed classes and a certain suspicion, tinged with admiration, towards those often "mean and rapacious" classes of masters,

merchants and monopolizers whose interest it was to "deceive and even to oppress the public."

Did Smith portray class relations as harmonious or conflictual? Perhaps the seeming inconsistencies that we can find in his various passages on this subject are a reflection of that very ambivalence which is so firmly lodged within the idea of competitive interdependence. Is it artificial to speak of "class competition"? One of Smith's theories attributed the falling rate of profits to the increasing "competition between different capitals" (I, 335).¹ His analysis of market behaviour showed how competition tended to equalize the rate of profit between different trades, just as it did for the rate of wages, but what kind of competition was it that lowered the average rate of profits throughout the whole society in relation to the average level of wages?

This was a theoretical issue which was to perplex classical theorists in the decades to come.

2. Classicism in the Making

The familiar adjective, classical, like such other labels as mercantilist, liberal, and socialist, can be used to convey a very narrow or a very broad range of meanings. At one extreme, it can be stretched out to cover a body of economic thought with a span of more than one hundred years, from Adam Smith to J.E. Cairnes. At the other extreme, it can be whittled down to a small circle of writers centering around David Ricardo.

To trace the evolving ideas on competition, I do not want to impose any restrictive definition of my own upon this term, classical, in its wider applications throughout the full scope of economic thought. However, in characterizing the classical attitude towards competition, I shall approximate Marshall's choice of dates. He gave fifty years, 1770 to 1820, to what he called the "classical epoch."²

¹The texts from Smith and the ensuing debate are discussed below, section 2. For Smith's texts, see notes

²Memorials of Alfred Marshall, ed. A.C. Pigou, London, 1925, p. 374.

Commencing in the early 1770s (at which time the mercantile concept of competition had been vanquished), the classical attitude towards competition extends to the mid-1820s and, for a few writers, into the early 1830s. By way of broad generalization, the classical concept of competition focussed on the bargaining behaviour of individual buyers and sellers of goods and services in settling upon prices in open market exchange. The classical attitude towards competition was that of an unquestioned (and hence undefended) belief that such competition would result in the right set of prices being reached in equilibrium. This manner of stating what the classical concept of competition was may seem to belabour the obvious. What I wish to stress is that I have offered no precise definition, merely a loose generalization, as to how classical theorists conceived of competition. What matters more is that a general consensus existed, from the 1770s to the 1820s, unstated and unchallenged, that competition led to an equilibrium set of prices with important normative characteristics.

As we have already seen in the previous chapter, Le Trosne had given expression to this new attitude in 1777 when he granted that the various forces of the market must be taken into account in order to show how prices were established but insisted all the same that one must go further than that to find the causes underlying the level of equilibrium price, "la cause ultérieure de la valeur."¹ The quintessence of classicism, then, is this search for the cause of value, and in this search competition served as a convenient analytical principle. It was not a focus for debate, nor even a contentious issue.

This growing concern with value was already apparent in the late physiocratic literature as well as in the analytically precise approach adopted by many of the Italian writers from the 1750s to the 1780s.² Adam Smith gave the

¹See above, Ch. II, section 4, note page

²The Baron, Pietro Custodi, assembled the works of Galiani, Beccaria, Ortes and Verri in the series of Scrittori classici italiani (Milan, 1803-05, Parte moderna, 41 vols.). Of particular curiosity is Verri's Meditazioni of 1771 which drew some seemingly absurd conclusions about an entire economy or system of market from some very sharp analysis of single-market price behaviour. Though Verri did not explore the theme of competition, his theory gave rise to a long drawn out debate on the nature of supply and demand, with inklings towards techniques of mathematical analysis. See "The Milanese School" in R.D. Theocharis, Early Developments in Mathematical Economics, London: McMillan, 1961, pp. 21-57.

subject a great boost with his new labour theory, and his influence on classical (and post-physiocratic) thought in France was felt by the early 1780s in Isnard's Traité des Richesses (1781).¹ Like some of the Italian writers, Isnard was groping already towards a more explicitly mathematical approach to analysis of value and price, wherein competition plays a rather secondary role.

Doubtless, the turmoil of the Revolutionary and Napoleonic periods explain why the development of economic thought from 1776 to 1815 is so chaotic and discontinuous and why the truly classical literature emerged in full force through the ten years or so following 1814-15. We are thus faced with another of those great gaps in time, separating one critical episode in this history from another. The years from 1776 to 1815 constitute a period of gestation, of classicism in the making, and all that I propose to do in the remainder of this section is to touch upon a few of the highlights from this interlude which will preserve some sense of continuity, binding The Wealth of Nations to the more important classical thought which it gave rise to only after a lapse of more than thirty years from its initial appearance.

The theoretical initiative that France had seized in the 1750s had once more crossed the channel, in 1776, this time back to Great Britain (and more precisely to Scotland), but it would begin to acquire a momentum only after the turn of the century. So, before turning to the British scene once again, I shall quickly survey a few indicators of trends on the continent.

The first translation of The Wealth of Nations was German, published in 1776 and 1778 in Leipzig. Volume I was reviewed in the Göttingische gelehrte Anzeigen of 1777 by J.G.H. Feder, a professor at Göttingen.² Of all the German universities at this time, Göttingen was foremost among those open to the liberal currents of thought emanating from England and France, and hence Feder's review

¹A.N. Isnard, Traité des Richesses, 2 vols., London & Lausanne, 1781.

²See C.W. Hasek, The Introduction of Adam Smith's Doctrines into Germany, Vol. CXVII, no. 2 in series of Studies in History, Economics and Public Law, New York: Columbia University Press, 1925, pp. 63-67. See also M. Palyi, "The Introduction of Adam Smith on the Continent," in Adam Smith 1776-1926, pp. 184-5.

is on the whole quite favourable to Smith's work. However, Feder felt obliged to enter a strong note of doubt regarding what he called "excessive competition" and the "evils" that outweigh the advantages of "complete freedom" in the economic sphere.¹

Feder's initial response was to be typical of German commentators and theorists thereafter. Great interest was shown in Smith's theories of value, capital accumulation, income distribution, and various other elements of his economic calculus, but equally great efforts were made to divorce this scientific apparatus from its liberal and philosophical trappings. For a brief spell, there were one or two avid proponents of the system of natural liberty - Lüder and Kraus in particular² - but most of the new crop of German theorists, who drew upon Smith's analytical structure in order to free themselves from the limitations of cameralism, adopted the pattern set by Sartorius' Abhandlungen (1806). Smith's scientific schema was dissociated from its liberal underpinnings.³

In France, Smith's triumph was more complete, even if political events caused some delay in its official proclamation. By 1790, two rather unsatisfactory translations had been published, superseded in 1802 by the definitive version of Garnier. By 1796, Garnier had described The Wealth of Nations as "l'ouvrage le plu

¹Hasek, op. cit., p. 64. I was unable to obtain the Göttingen journal and so rely upon Hasek's account and translations.

²A.F. Lüder (Über Nationalökonomie und Staatswirtschaft, nach Adam Smith, 2 vols., Berlin, 1800-02) followed Smith's reasoning and wording closely and was an unqualified proponent of his system of natural liberty and free competition (pp. 90-1) but was quite lacking in any originality of thought. Chr. Jacob Kraus was important as a teacher of Smith's ideas at Königsberg but published little during his lifetime. Students assembled his lectures, published posthumously as Staatswirtschaft, 5 vols., Königsberg, 1808-11. Other early German "classicists" like Hufeland, Soden, Lütz, Jacob and Krug, but especially Sartorius (see note below), did not follow Lüder and Kraus in regard to the liberal components of Smith's work.

³Georg Sartorius (1766-1828) began as an enthusiastic and unqualified supporter of Smith's system of thought (in his Handbuch der Staatswirtschaft, Berlin, 1796, see pp. 21-2 on "Die Concurrrenz"), but expressed doubts in his Von den Elementen des National-Reichthums, Göttingen, 1806, and the further qualifications he gave to the doctrine of free competition in his Abhandlungen (Göttingen, 1806, Vol. I only, in which see essay IV, pp. 199-225 passim) set the pattern for orthodox German classical thought thereafter. However, Sartorius repeated his praise for Smith's great analytical and synthetic achievements, as did even his opponents, such as Adam Müller. On this latter point, see Palyi, op. cit., pp. 196-7.

parfait et le plus complet qui existe sur l'économie politique," but went on to complain that it lacked "ordre et méthode."¹ Garnier was not the only Frenchman who wanted to give some Cartesian polish to the rough-hewn lines of Smith's Newtonian masterpiece, but this Gallic search for geometric simplicity was all too often achieved by superficial gloss, a price paid in exchange for Smith's more pragmatic, down-to-earth realism.

Needless to say, Garnier was very much in favour of Smith's system of natural liberty, but "la concurrence" remains pretty much in the background of his Abrégé Élémentaire of 1796 in which the classical penchant for value theory was already coming to the fore. The first decade of the 19th century saw a short-lived revival of economic thought in France, and of special note are these three works: Canard's Principes d'Economie Politique (1801), Sismondi's De la Richesse Commerciale (1803), and J. B. Say's Traité d'Economie Politique (1803).

Canard's Principes (Ch. III, "De la Détermination du Prix des Choses") presents a very crude algebraic formulation of the "principe d'équilibre." His grand "Équation des déterminations" incorporates "la concurrence" of buyers and sellers by employing the symbols, N and n , for their respective numbers.² Canard's awkward attempt to build a mathematical theory of price around the notion of competitive exchange came in for much criticism, both immediate (Horner, Sismondi) and distant (Cournot, Jevons, Walras). His technique was simplistic, his logical reasoning vague, his theoretical grasp lacking originality and clarity. In effect, Canard was merely translating into simple algebraic terms the ideas that scholasts had enunciated verbally. Nevertheless, Canard was taking the first precarious steps in the direction of later mathematical theories.

Sismondi's De la Richesse Commerciale is quite an estimable work when

¹G. Garnier, Abrégé Élémentaire des Principes de l'Economie Politique, Paris, 1796, preface p. v.

²N.F. Canard, Principes d'Economie Politique, Paris, 1801, p. 29. Francis Horner offered a very incisive review of Canard's work in the Edinburgh Review, Vol. I, no. II, Jan. 1803, pp. 431-50, for which see The Economic Writings of Francis Horner, ed. F.W. Fetter, London, 1957, pp. 57-76. Even though Horner's broad judgement of mathematical economics may have been a bit too general and premature, his criticisms of Canard's shortcomings were quite just.

set alongside J.B. Say's more celebrated treatise. Unlike most classical texts to follow, it remains quite faithful to the balance of coverage given in The Wealth of Nations to such things as exclusive privileges of chartered companies, tacit combinations of masters against workmen, and so on, in addition to the more familiar topics of free trade and value theory. Of course, like Smith, Sismondi made much use of the idea of competition to explain price behaviour,¹ and there is no hint of his radical change of view which was to come in 1819.

From most accounts of J.B. Say's special position in the history of economic thought, one might expect to find the idea of competition prominently displayed throughout his Traité (1st ed., 1803), and especially so in his treatment of the role of the entrepreneur and in his "théorie des débouchés" or Law of Markets. Such is not the case. Say had of course assimilated Smith's classical concept of competition and we can find occasional references to "la concurrence" sprinkled throughout Say's text. But as to the law of markets and the role of the entrepreneur, Say's arguments turn on the semantic issues of value theory. His attempts to demonstrate the naturally balancing or equilibrating tendencies of a system of markets provide only the faintest of indications of any dynamic sequences. Even when he eventually defended his law of markets against Sismondi's attacks in 1820, Say confirmed that his real interest was in the semantics of value theory and not in the behavioural content of competitive exchange.²

On the other hand, the general gist of Say's Traité was to re-inforce the belief in the efficacy of a system of openly competitive markets in the co-ordinating of aggregate supplies (or production flows) with aggregate demand (or

¹J.C.L. Simonde [de Sismondi], De la Richesse Commerciale, ou Principes d'Economie Politique, 2 vols., Geneva, 1803, Vol. I, Book I, Ch. III, p. 63.

²J.B. Say, Traité d'Economie Politique (1803), 2nd ed., 2 vols., Paris, 1814, especially Book I, Ch. XV, "Des Débouchés," pp. 143ff. See also Letter no. IV of his Lettres à M. Malthus, Paris & London, 1820, pp. 127-52 on Sismondi.

consumption flows), and thus his work is a further stepping-stone from Boisguillebert's theory of proportional prices towards Walras's theory of general equilibrium

To conclude this account of French classicism in the making, I should add that J. B. Say's popularization of Adam Smith was by no means in its ascent by 1803 with the first edition of the Traité. Historically, Say's 2nd edition of 1814 is far the more important work. As in Germany, anti-liberal views were being expressed. Dutens' Analyse Raisonnée (1804) presents an updated version of the balance-of-trade doctrine and a generally interventionist attitude, even though the classical concept of competition pervades its analytical apparatus, a rather curious amalgam which was still noticeable in Ganilh's Dictionnaire Analytique as late as 1826.¹

Classicism in Great Britain was much slower to emerge out of its formative stages into a mature body of doctrine, but when it had done so, between 1815 and 1825, it took economic analysis much further than had its French counterpart. The Wealth of Nations engendered remarkably little debate during Smith's own life time,² and it is equally astounding how little Smith revised his massive work over subsequent editions to 1789.

A few years after Smith's death in 1790, Dugald Stewart published his "Account of the Life and Writings of Adam Smith." This event did not mark the beginning of Smith's ascendancy, only the reviving interest shown in economic subjects. The more ambitious theoretical treatises to follow - such as Gray's Essential Principles (1797), Wakefield's Essay upon Political OEconomy (1799 and

¹J. Dutens, Analyse Raisonnée des Principes de l'Economie Politique, Paris, 1804; compare Ch. VII on "Valeur" with Ch. XVI on "Commerce." Similarly, compare the item "Concurrence" with those of "Balances" and "Commerce" in Chas. Ganilh's Dictionnaire Analytique d'Economie Politique, Paris, 1826.

²Aside from the political aspects of the colonial question, Bentham opposed Smith's case for a legal limit to interest rates (Defense of Usury, London, 1787) and Anderson opposed Smith's case for free trade in grain (see above, Ch. II, ~~note~~ page 35). To my knowledge, the only sizable treatise to support Smith's system during his lifetime was B. Vaughan's (?) New and Old Principles of Trade Compared, London, 1788. This is not to say that there weren't many other supporters.

1804), and Lauderdale's Inquiry into Public Wealth (1804) - were still engaged in the pre-classical argument about wealth, with a strange mixture of mercantilist, physiocratic and Smithian ideas, and were sufficiently retrospective in their outlooks that they called forth another edition of Mortimer's Elements of Commerce, not published since 1780.¹

Evidently, the most talented writers and social theorists during this period were attracted to fields other than political economy. Bentham's Principles of Morals and Legislation (1789),² Ferguson's Principles of Moral and Political Science (1793), Godwin's Inquiry into Political Justice (1793), and especially Malthus's first Essay on the Principle of Population (1798) spring to mind as the dominant works. Needless to say, Malthus had constructed one of the pillars of the classical edifice in 1798 when he claimed that population tended to grow faster than the food supply, but Malthus's first Essay was not an economic treatise. Smith is mentioned often and The Wealth of Nations is cited as one of Malthus's chief sources, but Smith's influence is not particularly marked and competition is not woven into Malthus's argumentation. Perhaps the most noteworthy feature of Malthus's Essay is its constant reference to those "fixed laws of our nature" which Malthus believed governed the universe.³ Doubtless, Malthus's appeal to the geometric ratio of population growth went a long way towards creating the intellectual atmosphere in which economic "laws" were treated as the proper subject of inquiry for political economists.

Classical economic theory in Great Britain only began to coalesce

¹T. Mortimer's Lectures on the Elements of Commerce, London, 1801 was in essence a slightly revised edition of his earlier Elements (1st ed., 1772) for which see above, Ch. II, note pages 36-7.

²Of course, Bentham also wrote a Manual of Political Economy (1793-95). Though his economic analysis is on the whole rather inferior, in this and other early works (such as the Defense of Usury, 1789, and Defense of a Maximum, 1801), Bentham makes frequent appeal to competition in the spirit of Smith's system of natural liberty. I have relied upon the selections in Jeremy Bentham's Economic Writings, ed. W. Stark, 3 vols., London: Geo. Allen & Unwin, 1952.

³T.R. Malthus, An Essay on the Principle of Population, 1st ed., London, 1798, ed. A. Flew, London: Pelican Classics, 1970, p. 70.

with the appearance of James Mill on the scene. In reply to a series of pamphlets advocating restrictive measures, Mill entered the debate with his Essay on the Impolicy of a Bounty (1804) in support of Smith's system, built upon "a very obvious principle," namely (Mill wrote) that "it is nothing but that common competition which regulates every trade."¹ The next few years saw Spence's Britain Independent of Commerce (1807), Chalmer's Enquiry into Natural Resources (1808), Torrens's The Economists Refuted (1808), and Mill's own Commerce Defended (1808) in which the older-styled debate between physiocracy, mercantilism and liberalism is settled in favour of the latter.

Over the course of this extended controversy, competition had been left in the background for the most part. This state of affairs was not to last for very long. As Hartwell has pointed out, Ricardo was the first economist to use the word, law, as regards economic data and "was undoubtedly responsible for the habit of thinking about economic laws as universal generalizations to explain and analyse economic events."² Indeed, by putting his finger on an idea which was later to be interpreted as the "law" of diminishing returns, Ricardo had made the first discernible move towards the fundamental idea of marginal analysis as early as 1810 or 1811.³

It is entirely fitting, then, that Ricardo should have provided the first recorded occasion (that I have been able to find in my researches to date) of a reference to what he termed the "general law of competition," in correspondence with Malthus during 1811, shortly after their first face to face conversation.⁴ Quite possibly, Malthus himself had used this mode of expression

¹James Mill, Selected Economic Writings, ed. D. Winch, Oliver & Boyd: Edinburgh and London, 1966, p. 58.

²See R.M. Hartwell's introduction to Ricardo's Principles of Political Economy and Taxation, London: Pelican Classics, 1971, p. 24.

³See Ricardo's "Notes on Bentham" (circa 1810-11) in The Works and Correspondence of David Ricardo, ed. P. Sraffa, 10 vols., Cambridge: University Press, 1951-73, Vol. III, p. 287, and Sraffa's comments, Vol. IV, p. 7 and 7n5.

⁴See Ricardo's letter to Malthus, 18 June 1811, in Works, Vol. VI, pp. 24-5.

prior to Ricardo or else employed a similar style in reference to other laws which led Ricardo to this manner of phrasing. Malthus does not refer himself to the law of competition in correspondence with Ricardo at this point in time (he did so later), whereas throughout the currency debate of 1810-12 Ricardo had mentioned competition several times for its equilibrating effects in money markets, though he does not actually cite it as a "law."

Notwithstanding these facts, Torrens was (to my knowledge) the first to make reference to the "unalterable laws of competition" in print.¹ Now, it may well be that the reason why Ricardo never actually referred to competition as a "law" himself in print is that he wished to avoid the rather extravagant trappings that so mark Torrens's presentation of the concept. Whatever the explanation, the year 1815 witnessed both the first published treatment of the "laws" of diminishing returns and of competition, and gave way to a ten-year period which can be truly described as the "classical" decade in economics.

3. The Classical Decade, 1815-1825

Though Adam Smith is commonly treated as a classical economist along with Ricardo, Malthus, and the others, we should bear in mind that a full forty-one years stand between the first edition of The Wealth of Nations and the first edition of Ricardo's Principles of Political Economy. A whole generation separates Smith from his main followers, and the personal links between him and them are tenuous.² People such as Ricardo (born 1772), J.B. Say (born 1767), Malthus (born 1766) and Torrens (born 1780) did not acquire a familiarity with Smith's work as part of an ongoing tradition of classical thought. At various points in time, they "discovered" Smith's masterpiece and built upon its foundations in their own subsequent work, drawing from it whatever suited their special

¹R. Torrens, An Essay on the External Corn Trade, London, 1815, p. 16.

²This is even so in the case of those who could be said to have been his contemporaries, such as Dugald Stewart and Jeremy Bentham, as well as those Scots of the first generation to propagate his views, in particular James Mill, Francis Horner and J.R. McCulloch.

purposes.¹

After many years of political turmoil, and after one or two false starts, classicism got firmly under way in 1814. Buchanan published his edition of The Wealth of Nations, J. B. Say re-issued his Traité, and a flood of pamphlets started up, in connection with agricultural scarcity and high food prices, among which was Malthus's Observations on the Effects of the Corn Laws. But 1815 proved to be the pivotal year with the almost simultaneous announcement of the law of diminishing returns by Ricardo, West and Torrens, in addition to Malthus.

Of these celebrated pamphlets of 1814-15, only Torren's Essay on the External Corn Trade proclaimed competition to be a law. The "unalterable laws of competition" are likened to "the principle of gravitation, which, the instant restraint is removed, draws all things to their proper level," so that although market prices may fluctuate in response to changes in supply and demand, yet their "movements are governed by fixed and determined laws," namely, the "invariable laws of competition."²

It must be said that of all the classical economists in England, Torrens most nearly approaches the physiocrats for their unbounded enthusiasm and inflated theoretical claims, but it must also be said of Torrens, in all fairness to him, that he brought a certain analytical flair to abstract economics which lent itself to the scientific developments of the age. Unfortunately, Torrens, like many of the Italian analysts, lacked the ability to synthesize his partial insights and was therefore capable of drawing some rather strange general conclusions, especially in regard to the subject of labour combinations, a subject which is intimately bound up with all the ambiguities and perplexities of competitive grouping.³

¹For example, both J.B. Say and Ricardo chanced upon copies of The Wealth of Nations during the 1790s and were thereupon drawn to the study of theoretical Economics. See Hartwell's introduction, op. cit., p. 35 and Chas. Comte et al on J.B. Say in Political Economy: A Historical Perspective, ed. H.C. Recktenwald, London: Collier-McMillan, 1973, pp. 101-02.

²Torrens, op. cit., 1st ed., 1815, p. 16 and 2nd ed., 1820, pp. 29 and 61.

³Torrens, On Wages and Combination, London, 1834. This subject is treated below, in Chapter IV, section 2.

Over the course of the next ten years or so, Torrens's Essay on the External Corn Trade grew from one edition to the next to treatise-like proportions. This work, as well as his Essay on the Production of Wealth (1821) did much to instil into the minds of economists of that time the law-like character of competition as a central scientific principle, because of its "equalizing" tendencies.¹ Thus, in 1820 Malthus's Principles of Political Economy makes frequent and interchangeable reference to both the "principle of competition" and the "inevitable laws of supply and demand,"² while James Mill mentions competition as both a "law" and a "useful principle" in his Elements of Political Economy (1821).³ J.R. McCulloch was perhaps second only to Torrens for his enthusiastic espousal of the "great and constantly acting principle of competition."⁴

All of these statements were made during the ten year period from 1815 to 1824, and they constitute what might be termed, broadly speaking, a consensus of opinion on the scientific status of competitive market exchange. With one minor exception to which I shall turn in a moment, the classical writers did not question the law-like character of competition, nor did they look upon it as a contentious matter. The laws of competition, held responsible for equating prices to costs of production and for equalizing rates of return to similar factors of production, went for the most part unchallenged and were cited in support of various policies to be adopted, serving as a convenient set of analytical assumptions.

¹Torrens, An Essay on the Production of Wealth, London, 1821, p. 27 and passim. Torrens made mention of the "equalizing" tendencies of competition earlier in his "Strictures on Mr. Ricardo's Doctrine respecting Exchangeable Value," Edinburgh Magazine, Vol. III, Oct. 1818, p. 336.

²Malthus, Principles of Political Economy, London, 1820, pp. 63-75, 304ff, 328.

³James Mill, Elements of Political Economy (1821), ed. Winch, op. cit., pp. 257, 291. Mill also referred to "the natural and beneficent laws of competition" in his History of British India (3rd ed., 1826) in Winch, op. cit., p. 409.

⁴J.R. McCulloch, "Political Economy," Supplement to Encyclopaedia Britannica, 6th ed., Edinburgh, 1824, Vol. VI, p. 255 and Principles of Political Economy, 1st ed., Edinburgh, 1825, p. 132.

By this, I do not mean that the classical economists were theoretically complacent. Far from it. For one thing, we may speak of them collectively as if they constituted a closely knit group, but they hardly constituted a unified "school" of thought in the manner of the physiocrats. Instead they were very much in dispute with one another. And this leads to a second point. The theoretical issues that they pursued were in large part "aggregative" in nature, treating of a whole economy in terms of its major sub-divisions of inputs (land, labour and capital) and outputs (consumption and investment), and they viewed the problems of economic growth and distribution in such a way that competition seemed to have a rather limited role to play in the scheme of things. This reasoning will be developed and illustrated later in this section.

But before doing so, we might illustrate how the classical economists were given to disputations amongst themselves and yet fundamentally agreed on the nature and role of competition.

In his Principles of Political Economy and Taxation (1817), Ricardo uses the word competition and its cognates about 30 times.¹ Not once does he speak of competition as a law or principle, though he does make it very clear from the outset that competition is a vital postulate in his theory:-

In speaking then of commodities, of their exchangeable value, and of the laws which regulate their relative prices, we mean always such commodities only as can be increased in quantity by the exertion of human industry, and on the production of which competition operates without restraint.

Furthermore, Ricardo does attest to the beneficial role played by competition in the distributing of income amongst individuals:-

These then are the laws by which wages are regulated, and by which the happiness of far the greatest part of every community is governed. Like all other contrasts, wages should be left to the fair and free competition of the market, and should never be controlled by the interference of the legislature.²

¹Ricardo added three more references to competition in the 3rd ed. of 1821.

²This and the previous passage are from Ricardo's 1st ed. Principles, from Works, Vol. I, pp. 12 and 105, my emphasis added.

Without doubt, Ricardo endorsed Smith's system of natural liberty, both in his Principles and in other pamphlets from 1810 to 1822.¹ Yet, it is valid to say that Ricardo's main interest is not with competition as a prescriptive principle for economic policies, but as an analytical abstraction, an extreme hypothetical case in which to investigate the quantitative inter-relationships subsisting between such things as prices, costs, values, and production. In his pamphlet of 1815, An Essay on the Profits of Stock, Ricardo revealed this concern for the effects that an extreme form of competition would have upon prices and profits when he employed the qualifying phrase: "Wherever competition can have its full effect,"² an idea which recurs in the first passage cited above.

A further aspect of Ricardo's abstract and scientific approach to his subject is this: Ricardo was not especially anxious to demonstrate how equilibrium was reached, and hence not particularly interested in competition as a behavioural process. Ricardo wanted to explore the quantitative or mathematical properties of the resulting equilibrium, and for that he merely assumed that competition brought that equilibrium into being. For example, in speaking of capital markets, he refers to the "strong tendency to equalize the rate of profits of all [industries]" but admits: "It is perhaps very difficult to trace the steps by which this change [i.e. market adjustment to equilibrium] is effected," adding simply that "the principle which apportions capital to each trade in the precise amount that it is required is more active than is generally supposed."³

Thus, we can see in Ricardo's work unmistakable signs of a tendency which were to become more marked in the neoclassical period: the appeal to competition as an abstract heuristic device to explore the quantitative propertie

¹See, for example, Works, Vol. III, p. 56 (1810) and Vol. IV, p. 217 (1822).

²Works, Vol. IV, pp. 19-20.

³ibid, Vol. I, pp. 88-89.

of equilibrium. And, given this abstract penchant, it is entirely suitable that Ricardo had also been among the first to develop economic theory along the lines of diminishing returns to scale and even to conceive of varying proportions and scales of inputs and outputs.

With these thoughts in mind, let us compare Ricardo's outlook to that of Malthus. Commencing with their initial correspondence in 1811, the topic of competition enters into their discussion of value and price, and already by 1815 Ricardo was beginning to show some resistance to the main emphasis Malthus put on supply and demand to explain value.¹ By 1817, Ricardo asserted (against J. B. Say rather than Malthus) in his Principles that "the real and ultimate regulator of the relative value of any two commodities, is the cost of production, and not the respective quantities which may be produced, nor the competition amongst the purchasers," and later re-iterated the point that "It is the cost of production which must ultimately regulate the price of commodities, and not, as has been often said, the proportion between supply and demand."²

Now, in this groping towards a more fully explicit mathematical approach to the problems of economic theory, Ricardo was a little unfortunate in his choice of phrasing, and a recurrent theme throughout his correspondence with Malthus, as well as in his "Notes on Malthus," is the idea that the disagreement between them was essentially a verbal dispute.³ Where Malthus was primarily concerned with short-run fluctuations in price, responding to the immediate pressures of supply and demand, Ricardo was looking for the long-run and more stable forces, or what he termed "natural" levels of price as opposed to shifts due to "accidental causes."⁴ More importantly, Ricardo was concerned with what he thought were "ultimate" rather than "superficial" causes

¹See Ricardo's letter to Malthus, 8 May 1815, Works, Vol. VI, pp. 228-29.

²ibid, Vol. I, pp. 344, 382, my emphasis added.

³See ibid, Vol. VIII, Correspondence 1819-1821, passim pp. 202-07, 228-9, 272-286, as well as Ricardo's "Notes on Malthus," ibid, Vol. II, pp. 24-5, 38-9, 45-53.

⁴ibid, Vol. I, pp. 91-2.

of value and price - what Le Trosne had termed "la cause ultérieure de la valeur" which confused the idea of causality with mathematical entailment.

Confronted by these vagaries, Malthus quite misunderstood Ricardo's argument and, overlooking the subtleties of his case, misrepresented Ricardo's position when in his own Principles of 1820 he (Malthus) wrote: "Mr. Ricardo expressly rejects ... that very principle of competition brought forward by Adam Smith," namely, that supply and demand together determine profits.¹ In their subsequent correspondence, from 1820 to 1822, this source of misunderstanding or disagreement was apparently resolved or at least clarified to Malthus's satisfaction. The passage referring to Ricardo, cited immediately above, was removed from the second edition of Malthus's Principles,² and as early as 1821 Malthus even went so far as to say that he inclined more to Ricardo's explanation of value.³

Much of this discussion between Malthus and Ricardo on the relations between price, value, cost, supply, demand and competition did turn essentially upon semantic or terminological issues. But their debate did touch upon very genuine issues which were to rise up again in another way and which were more intricate than Malthus seemed to believe in 1821. We can reflect upon the utter complexity of the matter by noting that it was Ricardo who had in 1817 accepted Say's law of markets, and Malthus who in 1820 had rejected Say's law while at the same time accusing Ricardo of having abandoned Smith's principle of competition! Apparently, in Malthus's mind, the efficacy of competition in a single market in bringing about a stable equilibrium price level had nothing to do with the efficacy of a system of open and inter-related markets to ensure a stable aggregate growth at full employment.

¹Malthus, Principles (1820), p. 311, my emphasis added.

²Malthus, Principles (2nd ed., 1836, posthumous), London: L.S.E. Reprint of Scarce Works on Political Economy, 1936, p. 281. I should add, however, that the authenticity of this revised edition has been put in doubt by some.

³Letter of Malthus to Ricardo, 13 Sept. 1821, in Ricardo, Works, Vol. IX, pp. 64-5.

Yet, this is the problem that Sismondi had raised in his Nouveaux Principes (1819),¹ and similar perplexities made their way into Ricardo's own 3rd edition Principles. In order to appreciate the nature of these new problems and the new doubts that ensued from 1821 onwards concerning the true status of competition, we must recognize that elements of micro-economic and macro-economic analysis were being inter-twined in such a way that ambiguities were created. In sorting these out, I shall make use of a terminology which, though not found in the classical literature itself, does help greatly to clarify matters.²

The concept of income distribution was paramount in the minds of most classical theorists, even more so than in the mind of Adam Smith who gave equal weight to the concept of resource allocation. Moreover, the classical people were principally concerned with the macro-economic (or aggregative) problems of growth and stability, rather than with the micro-economic problems of industrial structure such as concerned Adam Smith. Hence, as I have commented earlier, competition was not a central focus for debate amongst classical writers. At most, it was a vital but auxiliary principle.

Nevertheless, in treating of income distribution, the classical theorists did adopt Smith's tripartite division of income into three classes - both functional and social classes of income - wages, profits and rent. And, like Smith they thought in terms of divisions of income between individuals as individuals and between individuals grouped into these broader social and functional classes. Given these distinctions, they studied not only individual levels of prices, wages, rents, and profits, but also average levels of these for industries and for entire classes. The challenge their texts pose for the modern

¹Sismondi's Nouveaux Principes is discussed below in Ch. IV, section 3.

²George Ramsey employed the terminology of "primary" and "secondary distribution" in his Essay on the Distribution of Wealth (London & Edinburgh, 1836, p. 76), and it was in fact his work which first suggested this terminology to my mind. However, I should point out that he uses these terms in a different sense. For him, primary distribution is between owners of wealth (eg. land-owners) and secondary distribution is that division made by each owner amongst those dependent upon him (eg. employees, members of his family).

reader is that of discerning the true gist of their reasoning, since they dealt with more concepts than they had special terms for these concepts, and much ambiguity results.

Let us say that primary distribution refers to the division of income amongst the three broad classes of income earners: capitalists receiving profits, landowners receiving rents, and labourers receiving wages. And, distinct from this, secondary distribution refers to the division of income amongst the various individuals comprising any one class: that is, profits amongst capitalists; or wages amongst labourers, and so on.

Theorists during the classical decade were virtually unanimous in agreeing that competition governed or regulated secondary distribution through its "equalizing" tendencies, as indeed did many theorists before them. But this was not their main object of interest. Adam Smith had established this characteristic of open market competition to everyone's satisfaction. During the years 1815-1825, the major theoretical battles concerned primary distribution and its relationship to economic growth and stability. Immediately, we must ask: Did competition enter into their account of primary distribution and if so, how?

Once again, we turn back to Adam Smith; for, he was on this issue, as on most others, the point of departure for classical theory. In his chapter, "Of Stock Lent at Interest," (Book II, Ch. IV) Smith argued that "As capitals increase in any country, the profits which can be made by employing them necessarily diminish." His next sentence nicely suggests the reason as declining marginal productivity of capital: "It becomes gradually more and more difficult to find within the country a profitable method of employing any new capital." But this appeal to a technological cause is immediately followed by a behavioural explanation: "There arises in consequence a competition between different capitals, the owner of one endeavouring to get possession of that employment which is occupied by another," and the result is "Their competition raises the wages of

labour and sinks the profits of stock."¹

The clear implication of Smith's theory of the falling rate of profits (in an average, economy-wide, sense) is that competition plays a part in the primary distribution of income between wages and profits considered as a whole, though in conjunction with other causes. In a previous chapter, "Of the Profits of Stock," (Book I, Ch. IX) he had shown in one concise passage how competition relates to both primary and secondary distribution, invoking what some logicians might describe as the fallacy of composition:-

The increase of stock, which raises wages, tends to lower profit. When the stocks of many rich merchants are turned into the same trade, their mutual competition naturally tends to lower its profit; and when there is a like increase of stock in all the different trades carried on in the same society, the same competition must produce the same effect in them all.²

The problem of explaining primary distribution, which Smith had here touched upon, is an immensely complicated subject involving a vast array of competitive, co-operative and conflictual forms of interdependence. It is no wonder that classical theorists, following Smith's dual explanation in terms of both diminishing returns and increasing "competition of capitals," encountered many difficulties of a logical as well as semantic and conceptual nature. They were moving towards a more explicitly mathematical formulation, and Ricardo's approach proved highly influential because he seemed to succeed in reducing a great many variables to a relatively simple formula for primary distribution.

Limitations of space prevent me from delving into the details of Ricardo's brilliant and ingenious theory of income distribution, but a few of the prominent features of his theory call for comment. Needless to say, Ricardo did appeal to competition in its classical role of secondary income distribution, that is, equalizing rates of return amongst similar factors of production. However, Ricardo indicates from the outset (in his preface of 1817) that "the principal problem in Political Economy" was to "determine the laws which regulate

¹Smith, The Wealth of Nations, ed. Cannan, Vol. I, p. 235.

²ibid, Vol. I, p. 89.

this distribution," meaning the primary distribution of "the produce of the earth ... among three classes of the community," - proprietors, owners of stock and labourers.¹

Now, if we accept the distinction between a social constraint (placed by man upon man) and a natural constraint (placed upon man by nature), then it can be said with some validity that Ricardo highlighted natural constraints in his theory. These natural constraints were both biological (population growth and the subsistence level for survival) as well as technological (the diminishing fertility of soil and the ratio of grain-as-input to grain-as-output), and they were in 1817 empirically justified as simplifying assumptions from which Ricardo was able to construct a fairly coherent theory and to deduce some remarkable conclusions.

With the passage of time, Ricardo's theoretical system came to be construed as "naturalistic," that is to say, tending to view income distribution as being governed solely by natural constraints and hence lying outside the realm of human and social intervention. Quite apart from this caricature which some of Ricardo's later followers may have advanced in a more severe form,² his own text does not support such an extreme interpretation. Ricardo may have been searching for the "ultimates" lying behind the mere superficialities of market behaviour, but nowhere does he explicitly question Smith's claim that increased competition of capitals lowers profits over the long run, and in one passage he even follows Smith's manner of phrasing when he writes: "An accumulation of capital naturally produces an increased competition among the employers of labour

¹Ricardo, Preface to 1st ed., Principles, in Works, Vol. I, p. 5.

²J.S. Mill was probably reacting against the cruder "naturalistic" interpretations given to Ricardo's theories by some of his followers, when in his Principles (1848) he (Mill) argued that the production of wealth was subject to "physical laws of nature" while the distribution of wealth depended upon laws and customs of society, that is, on "human institution" alone. See his Principles of Political Economy, ed. Ashley, pp. 21, 199-200. The matter is discussed below in Ch. IV.

and a consequent rise in its price."¹

Ricardo's new chapter, "On Machinery," added to the 3rd edition of his Principles in 1821, did much to raise doubts about the classical synthesis, as the next few years would demonstrate. By analyzing machinery and labour as substitute factors of production (and not merely complementary factors), Ricardo had drawn out the conflictual aspect imbedded in the relationship of competitive interdependence between employers (or owners of capital) and employees. In what seems to have been a rather spur-of-the-moment decision, influenced by his reading of John Barton's pamphlet of 1817,² Ricardo jumped to the conclusion that the substituting of machinery for human labour was "often injurious to the interests of the class of labourers."³

Now, however we may judge the validity of this claim in an historical context, the fact remains that Ricardo had tacked this chapter onto his previous theory without making any thoroughgoing adjustments. The new chapter, standing by itself, left things very much up in the air, and was in many ways logically inconsistent with the remainder of his text.⁴ We know from Ricardo's conversations and correspondence with Sismondi in 1822 that he did not undergo some last-minute fundamental conversion but that he did remain an adherent to what he called the "system of free competition,"⁵ and yet Ricardo did leave open the possibility that class competition was a meaningful and relevant concept when he observed: "Machinery and labour are in constant competition."⁶

¹Ricardo, Principles, in Works, Vol. I, p. 163.

²Barton, Observations on the Circumstances which Influence the Conditions of the Labouring Classes of Society, London, 1817, reprinted in his Economic Writings ed. G. Sotiroff, Regina, 1962, Vol. I.

³Ricardo, Principles (3rd ed., 1821), in Works, Vol. I, p. 388.

⁴These logical inconsistencies are ably discussed by M. Blaug in his Economic Theory in Retrospect, 2nd ed., London: Heinemann, 1968, pp. 137f.

⁵See Ricardo's On Protection to Agriculture (London, 1822) in Works, Vol. IV, pp. 217-18, 243-44, and passim, as well his correspondence from Geneva during his visit with Sismondi, in Works, Vol. IX, 218-20, 235-6, 243-4, 248.

⁶Ricardo, Principles (3rd ed., 1821), in Works, Vol. I, p. 395.

Sadly, Ricardo's sudden and premature death in 1823 meant that others would have to puzzle out the implications of his words. Ricardo's personal charm and objective attitude towards economic theory had done much to preserve a sense of unity amongst people like McCulloch, Malthus, Torrens and James Mill. After 1823, the classical consensus quickly became unstuck.

As early as 1824, McCulloch expressly rejected the view that competition entered into the distributing of income between the major class groupings, though of course he retained the principle for secondary distribution. He wrote:-

... the principle of competition could never be productive of a general fall in the rate of profit. Competition will prevent any one individual from obtaining a higher rate of profit than his neighbours; but no one will say that competition diminishes the productiveness of industry, and it is on this that the rate of profit must always depend.¹

Now, one could not begin to explore the role of competition (as a social constraint) as it affects profits in primary distribution unless one first draws a number of necessary distinctions, say, as between (1) the average rate of profit as a return on capital per unit of time and (2) the proportion of total profits to total wages and total rents in the total income of a period of time. The discussion requires a careful and explicit specification of the terms of reference.

By 1821, Malthus had been persuaded to accept a position much closer to Ricardo's own, than had been the case in his Principles of 1820. However, Ricardo had passed from the scene by 1824, and with McCulloch's statement of position, the swords were drawn and the battle engaged. Malthus answered McCulloch in an anonymous and very aggressive review, pitting what he termed "the new school of political economy" (that is, "Ricardian" theory à la McCulloch) against the older political economy of Adam Smith.²

¹J.R. McCulloch, "Political Economy" (1824), op. cit., p. 269.

²Malthus' anonymous Review of McCulloch's "Essay on Political Economy, Supplement to the Encyclopaedia Britannica," in The Quarterly Review, Vol. XXX, Jan. 1824, pp. 297-334.

First, he re-opened the debate he had waged with Ricardo (from 1815 to 1821) as to whether prices and values were determined by supply and demand (i.e. competition) or by the quantity of labour worked up in commodities, but this much discussed issue added nothing new to the theme of competition by 1825. But more pointedly, Malthus attributed to this "new school" the view that the diminishing productivity of land was the sole regulator of profits "to the entire exclusion of the cause stated by Adam Smith, namely, the relative abundance and competition of capital."¹ Malthus's ensuing critique of McCulloch's position combines insight with ambiguity, and shows both how close and how far the classical economists were in 1825 to enunciating a precise economic calculus. What matters most about his reasoning for this history is the concept of competition his argument implies, a concept which quite definitely makes competition a part of the theoretical account of primary income distribution.

For example, in defending Smith's theory of falling profits, he writes:

... If the competition of capital in any particular department of industry may so lower the value of the produce as to occasion a larger proportion of the produce to be paid to the labourer, there seems to be no reason why the competition of increasing capital in all departments should not so lower the value of the mass of commodities, compared with labour, as to award generally a larger proportion of what is divided between the labourers and the capitalists to the labourers, and thus occasion a general fall in profits.²

At this point, Malthus qualifies the theory given by Smith with the newer principle of population, but we can readily see how vital a role Malthus gives to competition when in discussing the "variations" in the shares of total income going to wages, rents and profits, he writes:-

¹ibid, p. 308. Malthus's main argument follows on pp. 320-331.

²ibid, p. 326.

... the principle of the competition of capital not only gives the true explanation of all these variations, but equally applies to those variations which arise from the diminished productiveness of labour on the land, ...

and, again, he concludes:-

In denying, therefore, the effects of the relative competition of capital on profits, and referring exclusively to the relative productiveness of labour, the friends of the new school have rejected a principle which will account for almost every variation which can possibly occur.¹

The precise details of Malthus's theory do not matter here, because unfortunately he did not specify precisely what he meant by phrases such as "the competition of capital" and "the principle of competition." Rather than saying that Malthus had evoked the idea of class competition, we would be more accurate in saying simply that Malthus saw competition (of some undefined sort) partly explaining primary income distribution (as I have defined it).

Malthus's attack upon the "new school" in the Quarterly Review (1824) elicited a rejoinder from the youthful John Stuart Mill in the Westminster Review in the following year. By 1825, tempers had become a bit frayed, and Mill's spirited counter-attack, cleverly turning the anonymous Malthus of the Quarterly Review against the publicly accredited Malthus of the Principles of 1820, revealed not only how heated the debate had become but also how truly involuted the discourse had grown, wherein the limitations of language were all too apparent in a subject that demanded a more rigorously logical and semantically precise frame.

Mill's reasoning in the Westminster Review article is not always easy to follow, but what is interesting is the way he touches momentarily upon the meaning of competition and the ambiguity surrounding it throughout the foregoing debate, when he states that the "new school" (on whose behalf he writes) do not comprehend "how there can be such a thing as competition of capital, unless it be competition for labour."² And, ingeniously, Mill tries to transform Malthus's

¹ ibid, p. 328.

² J.S. Mill (unsigned), "The Quarterly Review on Political Economy," from Westminster Review, Vol. III, Jan. 1825, pp. 213-32, reprinted in Mill's Collected Works, ed. J. M. Robson, Toronto: University Press, 1967, Vol. IV, p. 37.

logical argument into the very shape in which it can be found in Ricardo's text.¹ But, I must stop here; for the argument had already passed the point of diminishing intellectual returns. The classical decade was drawing to a close.

The year 1825, like 1815, is pivotal in the history of classical economics. Not only was the classical consensus becoming unstuck from within. Two other ominous signs appeared in that year. Bailey's Critical Dissertation on Value shook some of the foundations of Ricardo's value theory and raised a new set of questions, while John Gray's furious opening blast against competition in his Lecture on Human Happiness was a portent of things to come over the next twenty-five years from a wide variety of critics. Chapter IV will be devoted chiefly to this "socialist" onslaught upon the "capitalist" system.

The major contributions to classicism - those of Ricardo, Malthus, Torrens, McCulloch, the elder Mill, and others² - in the field of theory had been made by 1825. This does not mean that classicism suddenly ceased in 1825. For a few years, it seemed to flounder, possibly because it lacked the intellectual leadership of a Ricardo, but classical troops began to re-group by 1832 or 1833. By the 1850s, it had become clear that classical theory had weathered the socialist storm, having been forcefully re-affirmed in 1848.

¹I must confess that I could not follow Mill's reasoning here. After citing the quantity theory of money to distinguish between a fall in prices and a fall in profits, he goes on: "That there may be, and always is, a competition of capital for labour, is most true: this is the only competition of capital which Mr. Malthus acknowledges; and this competition has undoubtedly a tendency to raise wages, and, therefore, to lower profits; the limit to the rise of wages being the ratio between capital and population; wages, therefore, depend upon the ratio between population and capital, and profits depend upon wages: and this is the real doctrine of the 'new school'." (ibid, pp. 37-8). At any rate, Mill seems to attribute a role for competition in primary distribution for both his own and Malthus's theory.

²Unfortunately, space has prevented me from commenting upon the many writers of this period - people such as Craig, Cazenove, West, Tooke, Lauderdale, Read, Marcet, Rooke, and De Quincey - whose works I have in the main consulted, or even exploring in any detail the texts of such important theorists as Malthus, Torrens, James Mill and McCulloch. Of the minor theorists listed, Sir Edward West in particular had some sharp comments to make upon the ambiguities of competition in Smith's theory of falling profits, though he did not draw any major conclusions himself. See West's Essay on the Application of Capital to Land, London, 1815, pp. 20-22 and his pamphlet, The Price of Corn and the Wages of Labour, London, 1826, pp. 20-25.

Through the 1860s and 1870s, classicism slowly gave way to its natural successor, neoclassicism. However, we ought not to think of classical economics as just a passing phase in the history of economics, but as a permanent link between past and present. To do so, we must distinguish between its historically contingent aspects and its more enduring qualities. Adam Smith put the concepts of production and exchange on a solid theoretical foundation. Ricardo and his contemporaries, building upon those foundations, explored many elements of the economic logic which connected variations in prices, production and income with variations in the proportions between various types of inputs and outputs, and the law of diminishing returns is only one example of this analysis which points clearly towards the marginalism of the second half of the 19th century. And, in all of this, the classical concept of competition served as that necessary source of order and regulation which made systematic analysis possible.

True, by 1825, the need for a more rigorous formulation of the logic was becoming very painfully clear. But we must not under-estimate the genuine progress that had been made from 1776 to 1825. Rome was not built in a day, and if we think the classical advance was limited, then comparison with progress that has been made over similar durations of time prior to 1776 and since 1825 should correct that misapprehension.

Who knows? Had the scientific tendencies in classical thought not been arrested by the grand ideological battle that was to ensue for the next twenty-five years, then classical theorists may have progressed much faster than they did. However, the ideological battle was fought over several fundamental issues which did turn on the conception one makes of competitive interdependence, and it is to that battle that we must now direct our attention.

Chapter IV

REACTIONS AND COUNTER-REACTIONS

1. Competition in the Great Battle of Ideas

Over the course of the fifty-year period from the mid-1770s to the mid-1820s, competition as a word drawn from common usage was slowly hardening into a scientific and technical term. With its verbal associations becoming more fixed and rigid, the word was losing that sort of pliability so necessary for common usage, permitting a small and active vocabulary to be adaptable to changing circumstances and yet still retain a sense of continuity from day to day.

However, even by 1825 this process of verbal petrification was far from complete. Just as Adam Smith, vigorous opponent though he was to the older mercantilist doctrine, could still refer casually and naturally to the "competition between foreign and domestic industry" in discussing international trade,¹ so too could Robert Owen refer to the "competition of other states," as well as to the more abstract idea of putting one goal of public policy "in competition with" another,² while Ricardo could write of machinery being "in constant competition with" labour.³

Thus, by the 1820s, the classical concept of competition had become familiarized, but it was not so rigidly enforced or super-imposed upon economic discussion that all other concepts were entirely excluded.

To review the situation, we can say that the classical concept of competition envisaged the activities which took place between "individual" buyers and sellers exchanging goods and services in the context of the open market. In its long-run effects, this type of activity was thought to be "equalising" (i.e. equilibrating) in its tendencies, and hence the "principle"

¹Adam Smith, An Inquiry into the Nature and Causes of the Wealth of Nations, 2 vols., ed. Edwin Cannan, London: Methuen, 1930, vol. I, p. 429.

²Robert Owen, Observations on the Effect of the Manufacturing System, London, 1815, p. 4 and A New View of Society, London, 1813, p. 10.

³David Ricardo, The Works and Correspondence, ed. P. Sraffa, in 10 vols., Cambridge: University Press, 1951-73, vol. I, p. 395.

or "law" of "free" competition was held out as the regulator of economic behaviour, allocating resources and distributing income in conjunction with several other kinds of constraints which together constituted "supply and demand."

The classical attitude towards competition was ^{the unquestioning belief} that the results or effects of this open market exchange were just and beneficent, ensuring equality of income distribution and efficiency of resource allocation. Prior to 1825, these normative claims for competition were made largely without any qualification. Classical theorists had been aiming for abstraction and generality.

But once having been endowed with this law-like status as a beneficent regulator of economic affairs, competition soon became an obvious target for a wide variety of critics to seize upon as the source for any and all difficulties that might arise in the social, political, and economic scene. It was only after these criticisms were directed with full force against competition that the term itself hardened into a larger-than-life symbol, that is, a symbol with fixed and rigid cognitive associations no longer adaptable to changing circumstances and a symbol burdened with enormous emotive significance.

This shift in status from that of a relatively quiet but active analytical term to that of a grand symbol, a shift which occurred from the 1820s onwards, is evident in certain linguistic styles. At the outset, classical writers depicted competition merely as a type of market behaviour. During the 1820s, though, French critics such as Fourier and Sismondi wrote not merely of "la concurrence" but of something much grander in its implications:- "le régime de la concurrence." In English, this soon became the "system of competition," ushering in the great battle of ideas, Systems, Ideologies, and all the paraphernalia of ismatic thinking. As a result, the simpler idea of competition as a type of behaviour became confused with this so-called System of Competition, a loosely defined bundle of ideas which included such things as the characteristic institutions of "Capitalism" (such as private property and the laws of contract and exchange) and the social ethos of "Individualism" comprising the norms of individual responsibility alongside freedom.

Thus, the manner in which competition hardened into a larger-than-life symbol was determined as much by the peculiar nature of the criticisms directed against the classical concept as by the emphasis classical writers themselves gave to the economic understanding of this chosen term. But here we must be very careful to distinguish and delineate the different types of reaction that eventually set in. Otherwise, we miss the full significance of this period of economic thought.

In classical theory, competition was individualized (in terms of grouping) and was freeing, equalising and equilibrating in its tendencies. With a very long and mature historical hindsight to guide us, we can now see how these properties ascribed to competition might be challenged and clarified.¹

However, the many attacks upon classical competition during the first half of the 19th century concentrated upon some of these properties while leaving others relatively unexplored. In retrospect, we can see how critics pinpointed a number of the issues raised by classical theory, but completely missed or else only vaguely-intended at others. For example, whereas the classical scheme of things had competition as an "equalising" process, many critics were to argue that in fact competition created inequalities and even aggravated those that already existed. Similarly, they were to argue that competition, far from leading towards an equilibrium or stable balance, was really de-stabilising in tendency. It was a principle of chaos, not of order.

Opponents of classicism also questioned the view that competition was freeing in its effects. Though their language was not always precise and their arguments not always cogent, the clear implication of their case was often that competition was a coercive force. The irony is that in asserting this counter-claim the opponents of classicism did not realize that much of the classical scientific appeal to competition was based on its constraining effects as a regulator and a source of discipline. Because classical theorists themselves had stressed the freeing aspects of competition, at the verbally conscious level, even their critics remained unaware of this essentially dual nature of competition.

¹See below, Chapter VII, sections 2-5.

Indeed, most of the criticisms raised against the principle during the period up to 1848 fall short precisely because they failed to take into account the inherently ambivalent character of competitive interdependence. Thus, the dualities and tensions embedded in the common-sense idea were split off and dissociated and treated as polar opposites belonging to apparently different and opposed principles. In this way, they erred by placing the twin ideas of co-operation and association in direct contrast to competition by interpreting the latter as a form of pure conflict. This false antithesis drew attention away from the fact that competition usually involves an element of co-operation and is the process whereby social conflicts are resolved.

As a result, the most serious thematic problem at issue during this period concerned the complicated notion of competitive grouping. Rather than deny the individualized interpretation of competitive striving, critics of classicism preferred to split the dualities of competition into (1) co-operation of an ideally pure form between members within a single "class" and (2) conflict between different and opposed classes. Thus, class competition was construed as class conflict, and the individualized manner of interpreting competition went unchallenged.

By so doing, the great battle of ideas led not to a new set of concepts but to an implacably rigid hardening of older concepts. Critics tried to turn the "beneficent" principle into the very embodiment of "evil" itself. At the emotive plane, then, the classical attitude was fiercely attacked; at the cognitive level, the classical concept was retained, and only the conclusions drawn from it were altered. Unfortunately, this clash of ideologies did not solve any of the deeper problems connected with the notions of freedom, independence, pursuit of self-interest, and inter-dependence. The meaning of competition was fossilized.

In the classifying of economic writers of the 19th century, one historical convention has been to divide the field according to the political spectrum of left, center and right. By this scheme of things, it might be said

that classical theorists began as radical liberal reformers attempting to break down mercantile obstructions to individual freedom, but eventually found themselves opposed on both sides:- (a) by "socialists" who wished to push economic and/or political reform much further and much faster, and (b) by "conservatives" who resisted both of these reformist movements and who even urged for a return to some of the values and institutions of a former age.

As convenient as this classification scheme is, it does not apply very well in every case. Indeed, prior to the 1850s, disagreements within each of the separate camps were just as intense and just as fiercely disputed as the more fundamental differences which existed between these three broad schools of thought. Even by 1850, the now traditional labels of liberal, conservative and socialist, with all their various subdivisions, were not yet clearly delineated. Before 1848, the intellectual arena presented a very fragmented and disorganized array of over-lapping feuds and alliances, and unlike the previous one hundred years, it is very difficult to piece together a satisfactory chronological account of all the developing trends as they unfold alongside one another.

If I retain the familiar labels, it is because they do assist in grouping writers together under a common banner which often corresponds to a very distinct and distinguishable attitude towards competition and which thus facilitates the treatment of this period's literature with a certain degree of thematic coherence.

Because classicism in its most robust form had been confined largely to France and Great Britain, it is to the literature of these two nations that we must look for the most severely critical reactions. On the whole, up to 1848, critics of classicism maintained the intellectual initiative. Following the events of 1848-9, and with the publication of John Stuart Mill's Principles in 1848, classicism was re-affirmed during the 1850s. In the next two sections, I shall survey the various streams of reaction up to 1848.

2. Reactions in Great Britain

Serious critical comment upon competition in England from the 1820s to the mid-century is sporadic rather than sustained. It reflects the intensity of ongoing political events rather than any continuing intellectual debate. The mid-1820s and mid-1830s in particular saw a flurry of socialist pamphlets which together capture all that is vital in this stream of thought.

As the founder of the "associationist" branch of English socialism, Robert Owen has often been described as pitting the principle of co-operation against that of competition. Yet, one must be careful in distinguishing Owen's views from those of his many followers. Owen's first series of essays and pamphlets from 1813 to 1820, contain only a few trifling references to competition, and only one of these properly constitutes a condemnation of the idea.¹ But these early writings had appeared before the storm had really broken in the mid-1820s. When Owen returned to the literary arena with the publication of his Book of the New Moral World in 1836, he revealed the same reticence in directing any negative criticism towards the vices of competition, more anxious to strike a positive note by stressing the virtues of co-operation.²

Owen's general emphasis upon the harmonious possibilities of human association probably accounts for his falling out with the recalcitrant editor, J.E. Smith, of the Owenite organ, The Crisis, a bi-weekly newspaper which struck a rather strident note of hostility towards what it called "the system of competition or private property."³ As a successful industrialist, a dreamer as well as a man of action, Owen was quite out of step with the purely negative criticisms of the "competitive system" which many of his followers and interpreters favoured.

¹In his Observations (1815), Owen casts the "spirit of competition" (p. 4) into a very negative light, but all other allusions to competition are relatively neutral in the emotive sense. Of course, in retrospect, it was easy for reviewers and commentators to link up his criticisms with the growing attacks upon competition made by others.

²On one occasion, he does refer to "a false interest which diffuses a spirit of jealousy and competition," etc. See The Book of the New Moral World, London, 1836, p. 84.

³See, for example, the editorial (by J.E. Smith) in The Crisis, vol. IV, 12th April, 1834, p. 1, as well as vol. I, 14th July, 1832, p. 71 for some fireworks.

Of these followers and proponents of co-operation, the most theoretically ambitious was William Thompson. His Inquiry into the Principles of the Distribution of Wealth (1824) is a massive disquisition, tiresomely repetitious, but of textbook proportions and design, advancing some important ideas on the labour theory of value. More importantly for this history, Thompson explores many of the complex ambiguities of group identity and group conflict. Even though he overlooks many of the essential properties of competition and thus fails to resolve the underlying issues, his treatment of the theme of co-operation is most instructive in the way it illustrates the classic problems involved.

Thompson is not opposed to the idea of competition per se. He concedes some of the "immense advantages of the entire freedom of individual competition," (p. 366)¹ particularly in regard to the fostering of technological progress, productive efficiency, and (under severe conditions of equality), a certain justice in the distribution of wealth. What Thompson does most strenuously object to is what he calls the "unequal" competition waged by those who possess capital against those who do not, a form of competition which he asserts is waged "through the tortuous expedients of insecurity," (p. 251). It is a recurrent theme throughout his treatise that competition between unequals breeds insecurity.

But Thompson went on to insist that even with an "undeviating adherence to free competition under equal security," there would be limits to the proper scope for "individual" competition beyond which various "evils" would arise from such things as ignorance, prejudice, and so on, (pp. 368ff.). So, Thompson's ultimate allegiance is to what he calls, rather portentously, "the system of Voluntary Equality of Wealth by mutual co-operation." Since Thompson's work stands as an illustrative test case for so many other theories in the socialist tradition, it will be useful to consider his arguments in some detail.

¹Here and in what follows I am citing Thompson from his Inquiry into the Principles of the Distribution of Wealth, London, 1824.

Thompson begins with a critique of the system of income distribution that he thought prevailed in 1824. The community is divided into three groups: employers as owners of capital, productive labourers, and the community at large in the role of consumers. With this rather awkward schema, he proceeds to identify three "species of competition," (pp. 246 et seq.). Capitalists, in their search for profit, try to suppress competition both between themselves as producers (in order to raise prices of consumer goods) and between themselves as employers in the market for labour, in order to depress wages. For obscure reasons, he concludes that the first endeavour fails on account of "new adventurers" entering the field with lower prices, but that capitalists as a whole - in combination with "idle consumers" who are the "influential few" - succeed in maintaining high profits with low prices by achieving low levels of wages through the third "species" of competition, namely, "competition of the labourers with each other." (p. 247).

Of course, Thompson's logical argumentation was quite primitive and inadequate, but what matters most is that he still looks upon competition as a process which takes place between the members of the same class, not between whole classes construed as larger competitive units - and the resulting distribution of wealth is interpreted as a violation of the "natural laws" of distribution quite simply because the first two species of competition were suppressed (p. 248). At moments, Thompson seems to be bordering on the idea of class competition but does not quite make this conceptual breakthrough.

How, then, does Thompson interpret the role of competition within his own system? First, he calls for the establishment of various "co-operating communities" which act as both units of production and as units of consumption, that is to say, each community internally organizes its own productive activities and decides upon the method of distributing consumer goods amongst its members. However, in addition, Thompson recognizes the advantages of specialization and so he also introduces into his system the possibility of exchanges of surplus output between the various communities. Since he wanted to replace the competitive with the co-operative principle of income distribution, two questions immediately arise: How is income distributed amongst members within each community and how

are exchanges of produce brought about between separate communities according to Thompson's much advertised principle?

To his credit, Thompson does at least acknowledge the possibility that "competition would spring up between communities," and so proceeds to consider "popular objections" to the effect that "the establishment of these co-operating communities would not root out the principle of competition." (pp. 522-32). But Thompson's proffered answer merely begs the central issue. He suggests that any such competition between communities would be "altogether banished by mutual co-operation" insofar as each community consisted only of one class, laborers, and that exchanges between communities would not lead to "under-selling" but would be mutually agreed according to the co-operative principle of "a just equivalent of labor for labor" (p. 525), that is, products being exchanged in ratios reflecting the labor content of the goods and nothing more.

Obviously, the crucial problem, then, was how to place a measurable value upon labor content. Here, Thompson became vague: "If no exact estimate can be found, mutual good faith will arrange, to the satisfaction of both parties, the apprehended amount of the labor to be exchanged as represented by the commodities."¹ Thus, as if by the stroke of some magic wand, Thompson believed that "the principle of competition, with all its mysteries, falsehoods, and circumventings, has been banished," (p. 526)! Clearly, Thompson's "mutual good faith" was a fudge for the idea of fair competitive bargaining between each community pursuing its own communal self-interest. In spite of this, Thompson thought that competition was thereby avoided, because "in exchanging, the communities are mere laborers, desirous of a fair equivalent in labor for what their labor has produced."

In his Inquiry of 1824, Thompson did not broach the other issue, as to how the communal income was to be divided amongst each member. In responding to Hodgskin's pamphlet of 1825 (discussed immediately below), Thompson was forced to consider this genuine problem which his system posed, and he did so at some

¹ibid, p. 526, my emphasis added.

length in a second work in 1827 to which I shall turn shortly. But first, two other pamphlets merit some attention. Both appeared in the pivotal year of 1825 and both stand in the tradition of Ricardian socialism: Hodgskin's Labour Defended and Gray's Lecture on Human Happiness.

Of these two very energetic pamphlets, Thomas Hodgskin's is written on a higher intellectual plane, though the brunt of his attack is directed against private property which he construes as a source of unearned income for idlers. Hodgskin does not refer directly to competition at all, and only comes close to doing so when he writes of the "contest" between capital and labour, between masters and journeymen, and so on.¹ However, Hodgskin did say that there was "no principle or rule for dividing the produce of joint labour among the different individuals who concur in production," and so he could see no alternative but to leave the distribution of income (all of which was to go to labour) to the "unfettered judgements of the labourers themselves," that is to say, "the wages of individual labour would be justly settled by what Dr Smith calls the 'higgling of the market'."² Even though Hodgskin defended labour's right to combination, this final appeal to open market bargaining provoked Thompson's angry outburst of 1827.

In stark contrast to Hodgskin's cool logical argumentation, John Gray's Lecture on Human Happiness stands as perhaps the most furious attack upon the "system of individual competition" to be found in the English literature. Though he opposes private property, too, "COMPETITION" (in very emphatically upper-case letters) was Gray's chief villain of the piece. Unfortunately, Gray's theoretical inspiration does not quite reach the level of his rhetorical hysteria. Even so, his pamphlet carries some significance by its stress on the compelling effects of competitive behaviour.

Thus, in the section entitled "Competition: the Limit of Production,"³

¹Thomas Hodgskin, Labour Defended against the Claims of Capital (1825), ed. G.D.H. Cole, London, 1922, pp. 21, 100 and 106.

²ibid, pp. 83-86.

³John Gray, A Lecture on Human Happiness (1825), L.S.E. Reprint, London, 1931, pp. 59-72.

Gray draws out the conflictual aspects of the case when he regrets the fact that capital is all too often brought into competition with labour rather than "being brought to act in conjunction with it."¹ Alluding to the familiar theme of interdependence, he misses the essential ambivalence of that concept when he describes the "division of interests of men" as the "curse" of the human race, arguing simply that "UNITY OF INTEREST" would solve everything. To an unusual degree, Gray saw only one side of every argument and hence, while stressing the "compelling" and "limiting" effects of competition, he did not grasp the idea that what was compelling for one individual might be freeing for another, and that competitive striving expands as well as limits production, in various different ways. On the whole, Gray's theoretical statements seem remarkably naive:-

... demand is limited by competition: abolish IT, and demand shall be equal to production though it be increased a thousand fold. It is competition, then, and nothing but competition, which limits the annual income of the country.²

In all fairness to him it should be added that by 1831, Gray had revised his thinking somewhat, as his new book, The Social System, was to show. Here, Gray still maintained that all competition for (or with) capital should be abolished, but in the sphere of human endeavour in general he admitted that competition was "the very spirit of excellence in everything we undertake."³

The real climax in the development of Ricardian socialism comes with William Thompson's meandering and improvised pamphlet, Labor Rewarded (1827), which was written in answer to Hodgskin's Labour Defended. Thompson took great offense to Hodgskin's compromised version of socialism whereby wages would be settled in the open market. Virtually every one of Thompson's 119 pages of text is filled with explicit allusions to the compound "evils" of the "System of Individual Competition," and so only a slight summary of Thompson's many views on the subject can be given.

¹ ibid, p. 61.

² ibid, p. 67.

³ John Gray, The Social System, Edinburgh, 1831, p. 232. In fairness to Gray, I should add, however, that he did still argue: "I do object to competition in the employment of capital," retaining some of his former case against the principle.

In this rambling essay, Thompson wrote as if thinking out loud, struggling heroically with each new problem as it came to his mind. And problems do abound in Thompson's attempt to evade the seemingly all-pervading conceptual net of competition.

His tirade consists of a lengthy cataloguing of the "evils" he ascribed to "individual competition": inequalities, insecurity, injustice, force (i.e. coercion), fraud, opposition, the engendering of the spirit of envy and jealousy, and so on. But Thompson's underlying concern, to which he kept returning without being able to solve satisfactorily, was how to abolish and replace this principle with some other better alternative whereby labor would receive "the whole product of its exertions" and whereby the "greatest sum of happiness" would be achieved for all laborers. He tried to list a set of criteria for measuring the just reward for labor, including such things as "hardship," "real utility," "muscular effort," "abundant produce," etc., and the question as to how these criteria were to be applied in practice was raised but not answered.¹ Thompson merely insisted that:

... under the system of labor by competition and isolated exertion, it is impossible to establish any just or beneficent mode of remuneration or wages, on any rational principles whatever.²

Thompson recognized correctly that all competitive striving entails some form of coercion or force, but what Thompson failed to recognize is that such competitive striving can lead to a resolution of conflicts, that market bargaining can lead to mutually acceptable exchanges. Moreover, he failed to recognize that in virtually all social contacts, initial differences of opinion arise. Hence, he made the false antithesis, by contrasting the so-called "isolated exertions" of "individual competition" with his own avowed panacea of "mutual co-operation" based on "voluntary agreement", leading to "united exertions."³ Like most utopian socialists, then, Thompson tried to "solve" the

¹William Thompson, Labor Rewarded - The Claims of Labor and Capital Conciliated, London, 1827, p. 34.

²ibid, p. 35.

³ibid, pp. 33-35, 51, 54 and passim.

problems of social conflict by assuming that somehow they could be presumed not to exist at the outset! In other words, by instituting the system of co-operation, "force" would be removed, all arrangements would be arrived at by "voluntary agreement" and in contrast to the rule of competition, "every man for himself," Thompson argued that "every man for every man (himself included) is the basis of Mutual Co-operation."¹ Interpersonal conflicts of interest were merely assumed not to exist! There were, in effect, no problems or decisions to be resolved.

However faithful Thompson remained to his principle of co-operation, he was at least candid enough to admit that at each new turn "another host of difficulties remains." This becomes readily apparent in his analysis of labour combinations, an institutional expedient that he found unacceptable.² Here, Thompson was on the verge of enunciating the problem of competitive grouping; for, each combination (or group of united labourers) would inevitably find themselves in opposition to some other combination of labourers in their search for higher wages, but unfortunately this thematic point did not lead him to any clear conclusions.

Before leaving Thompson, I should add that his pamphlet re-inforced the trend towards confusing competition (understood as a behavioural process) with the so-called "System of Competition" which comprised such conceptually distant ideas as the institutions of private property and legal inheritance. And, strangely enough, his choice of terminology strengthens the hold of the classical concept of competition as an "individualized" phenomenon, in spite of his many remarks on labour combinations and their competitive relationships.

The few short years, 1824 to 1827, saw the most vital contributions of Ricardian Socialism to the debate on economic theory. To my knowledge, the English socialist literature of the 1830s offered nothing markedly new or original to the subject of competition. Two works of this decade merit brief mention. The anonymous Prize Essay on the Comparative Merits of Competition and Co-operation (1834) offers some intelligent comment upon the respective merits and shortcomings

¹ ibid, pp. 18, 32 and 33.

² ibid, pp. 75 et seq.

of competition in its opening pages, wherein many of the dualities are nicely sketched. However, this writer eventually succumbs to the principle of co-operation, making of it the same kind of false panacea that Thompson had done years before.¹

Finally, J. F. Bray's treatise, Labour's Wrongs and Labour's Remedy (1839), is a closely reasoned account of the labour theory of value and its many theoretical implications. For Bray, competition was an "ever-active and ever-warring principle" which was "perpetually bringing individuals and classes into hostile collision," but only under the "present system."² Unfortunately, when Bray came to his preferred alternative of a "perfect union of interests and reciprocity of benefits," he ducked the issue as to how this utopia was to be realized, merely saying that it would be "useless to enter into minute details of what could and should be done under a new social system such as that under consideration."³

This is a fitting note to end the sketch of the socialist critique, since the socialist reaction never got much past criticising. While its negative response to classicism did serve to bring out characteristics and potentialities in the idea of competition that hitherto had been ignored or glossed over, the socialists failed in their challenge because they could not identify an alternative.

At the same time, classical theorists were beginning to feel the force of the socialist attack by the mid-1820s. By 1819, Torrens could peremptorily dismiss Robert Owen's views,⁴ but by 1826 J.R. McCulloch felt obliged to answer to the claims of socialist writers and activists in response to the wave of labour

¹Anonymous, A Prize Essay on the Comparative Merits of Competition and Co-operation as the Best Principle for the Basis of Society, London, 1834.

²J.F. Bray, Labour's Wrongs and Labour's Remedy, Leeds, 1839, pp. 119 and 122.

³ibid, pp. 118 and 161.

⁴"Mr. Owen's Plans for Relieving the National Distress," Edinburgh Review, Vol. XXXII, Oct. 1819, pp. 453-77.

combinations and strikes of 1824 and 1825. This he did in the form of a lengthy treatise, his Essay on the Circumstances which Determine the Rate of Wages (1826). McCulloch's Essay is an important work because it shows for the first time how classical theory was being forced into awkward corners. No longer on the offensive, it was being adapted into a defensive posture.

McCulloch's analysis of combinations is based mainly upon Adam Smith's work, but to this he added one other essential ingredient, Malthus's principle of population. Like Smith, McCulloch opposed monopolies and exclusive privileges as the "suspension" of the principle of free competition, whereas he judged that "peaceful and voluntary combinations" amongst workmen were a natural outcome of "fair and free competition."¹ The worker's right to combine was parallel to the capitalist's right to invest in a corporate venture with other capitalists; indeed, McCulloch even argued that where wages had been "unduly depressed" such combinations of workers for purposes of wage-bargaining were "the only means" whereby workers might do themselves justice.²

With these propositions in mind, it might seem that McCulloch had given a role to competition in his account of primary income distribution, that is, since labour combinations could influence the level of wages relative to the level of profits. But the theoretical implications are far more complicated than this initial sketch might first lead one to believe. Though McCulloch's full text does not leave the matter perfectly clear and unambiguous, we can clarify much of his reasoning by some judicious interpreting of his arguments.

McCulloch makes what turns out to be a crucial distinction between "fair" competition, or "unfettered" competition (in which workmen do not try to "forcibly prevent others from working") and what we might call "unfair" competition, though McCulloch himself does not use the adjective "unfair" but speaks instead of "violent" and "illegal" means to restrict the supply of labour. To see why this

¹J.R. McCulloch, An Essay on the Circumstances which Determine the Rate of Wages and the Condition of the Labouring Classes, Edinburgh, 1826, pp. 184-5, 256-7.

²ibid, p. 188.

distinction is crucial, we must examine McCulloch's simplified theory of primary income distribution (in which rent, land, and diminishing returns are left out of the picture for convenience). Average levels of wages and profits are determined in the long run by the "ratio" between capital and population, where capital is understood as a "fund" to be advanced to support labourers and hence treated as the demand variable for labour, and population is taken as the proximate measure of the supply of labour.

To derive from this ratio the respective levels of wages and profits, McCulloch drew upon the old idea of "subsistence" as the minimum possible level of wages capable of supporting a given level of population. With the principle of population acting over the long run, this minimum level also became the maximum level of wages as well, and hence the "natural" or long-run equilibrium rate. When total subsistence wages were subtracted from total produce, what was left was total profit distributed amongst capitalists at the "natural" (also "common or ordinary") rate.¹

From this account, it would seem that in McCulloch's simplified version of Ricardian theory, primary income distribution was still determined solely by "natural" constraints and that competition served merely to ensure equality in secondary distribution of profits amongst capitalists and wages amongst workers. Competition merely leads to a stable long-run equilibrium result which is essentially determined by such things as subsistence, population size and growth as well as productivity of labour and capital.

However, McCulloch argued that "violent" and "illegal" methods could obstruct this result, but only (according to McCulloch) in the short run. Any attempt to maintain either wages or profits above or below their natural levels would be futile in the long run, since these efforts would inevitably entail other adjustments through the population mechanism. "Unfair" competition is not only unjust but can result only in short-run disruption. "It is the extreme of ignorance and folly," he writes, "to suppose that any combination can have the effect to

¹ ibid, pp. 112, 187, and 205.

maintain wages at an artificial elevation."¹

If we interpret McCulloch unsympathetically, then, what he seems to be saying leads to a curious dilemma: If no combination - fair or unfair - to alter the wage level above the natural rate in the long run can succeed, then why was it necessary to have any form of competition, any form of active pursuit of self-interest, whether it be isolated or concerted with others, if the long-run result is inevitable in any case? The exercise of free will seems to be pointless when human behaviour is totally determined by "natural" constraints.

A more sympathetic interpretation might be to say that McCulloch believed that only through "fair" competition could a long-run stable equilibrium be achieved, and with "unfair" competition, instability would ensue. Whichever way we choose to interpret McCulloch's case, the important fact remains: McCulloch built his argument upon the fundamental distinction between "fair" and "unfair" forms of competitive pursuit of self-interest, though he may not have been aware of the degree of importance of this distinction. As well, McCulloch left open the possibility that not all forms of competition are "individualized" in terms of competitive grouping.

Though he had been writing on economic subjects as early as 1816,² McCulloch's major theoretical works began to appear only after the death of Ricardo, that is to say, by 1824, at the tail-end of the classical decade; and already by 1826 his Essay on wages represented an early sign of the classical counter-reaction against the socialist attack. But that counter-reaction was slow to set in, and the field was generally open to a wide variety of critics of classicism through the remainder of the 1820s and into the early 1830s. While the socialist storm raged during the first five years or so, there was little if any

¹ ibid, p. 204.

² Items are listed from 1816 onwards by D.P. O'Brien in his immense bibliography of McCulloch's writings (J.R. McCulloch: A Study in Classical Economics, London: Geo. Allen & Unwin, 1970).

active defense of the principle of competition by prominent classical theorists.¹

It was only by 1832 or 1833 that the first discernible signs of a revival in classical theory are to be found. And, we may gauge the degree to which the critical onslaught upon competition had been received by noting that McCulloch dropped his references to the "constantly acting principle of competition" in the 2nd edition of his Principles.² Before turning to the classical revival of the 1830s, we should bear in mind that alongside the socialist writings, there were other currents of thought throughout the latter half of the 1820s and early 1830s. For example, Samuel Bailey's Critical Dissertation on Value (1825) had given rise to a large number of "anti-Ricardian" treatises on value theory and surveys upon that subject.³ Bailey had nothing special to say about competition itself, save that he stressed the importance of variations in market structure and behaviour upon the formation of values and prices, thereby swinging the emphasis away from Ricardo's approach back towards Malthus's. Yet, the ensuing literature on value theory contained very little comment upon competitive themes, and even though the specific features of Ricardo's value theory were critically re-examined, it

¹Ricardo had died in 1823. James Mill published nothing of consequence on economics after the 3rd edition of his Elements (1826). The youthful John Stuart Mill published nothing on economics after 1825 until the 1840s. Malthus confined himself to quiet topics in value theory (The Measure of Value, 1823, and Definitions in Political Economy, 1827). Torrens re-issued enlarged versions of his Essay on the External Corn Trade (1815) in 1826 and 1827, adding a short appendix on the subject of combinations in the 5th ed. of 1829, subsequently expanded into his full-length essay On Wages and Combination (1834). One important new figure, Nassau Senior, was lecturing at Oxford from 1826 to 1830, and much of this lecture material was subsequently incorporated in his Outline of the Science of Political Economy (1836), a work which contains very little direct and explicit reference to competition. In addition, he published several small pamphlets and lectures during the period from 1827 to 1830 (see his Selected Writings on Economics, A Volume of Pamphlets, 1827-1852, New York: A.M. Kelley, 1966), in which the subject of competition is not directly broached.

²Compare the first edition of McCulloch's Principles of Political Economy, Edinburgh, 1825, p. 246 with the second edition of 1830, p. 295 where the "constantly acting principle of competition" is revised to read "the leading or constant principles with respect to value."

³During the latter 1820s, these were mainly directed against Ricardo's theory of rent (for example, T.P. Thompson's The True Theory of Rent, 1826) but they grew more wide-ranging and systematic: Samuel Read's Political Economy, Edinburgh, 1829; C.F. Cotterill's Examination of the Doctrines of Value, London, 1831; and John Cazenove's Outlines of Political Economy, London, 1832, to name but a few.

is equally true to say that Ricardo's abstract style of analysis was still being employed by many.

Another group of writers displayed what might be called a conservative reaction to classical theory, being neither socialist nor liberal nor even truly mercantilist in their commitments, but critics of classical competition all the same. For example, T.R. Edmunds's Practical, Moral and Political Economy (1828) advances the bold assertion that "the chief obstacle to divisions of labour is the much vaunted principle of private or individual competition."¹ Adam Smith's study of the division of labour, limited by the "extent of the market," was such as to suggest that division of labour led to a perpetual fragmenting of productive activity into increasingly specialised small-scale units co-ordinated by market exchange, instead of leading to larger productive units co-ordinating separate but sequential steps in production "under one roof" by so-called vertical integration. Hence, "individualized" competition was not replaced by competition between larger competitive units, as technology progressed with expanding markets.

Edmunds challenged this view of things by arguing that efficiency depended as much upon scale of production as upon choice of technology. He refers to the "well-known fact" that "a large capital always yields a higher rate of profit than a smaller capital employed in the same trade" because it is "more than proportionally powerful."² Thus, for increasing efficiency it was necessary to have a "collecting together of the capitals of many individuals" into joint stock companies, and as a result he felt that the "principle of private competition" was "injurious" to the whole community in that it held back the rationalization of industry into the most efficient units of production.³

¹T.R. Edmunds, Practical, Moral and Political Economy, London, 1828, p. 72, his emphasis.

²ibid, pp. 78 and 80.

³ibid, p. 75.

Having nicely enunciated the idea of increasing returns to scale,¹ Edmunds called for the "most perfect freedom of action" not for individuals but for companies. Unfortunately, Edmunds's treatise was otherwise not especially distinguished, and his study of economies of scale had no visible impact upon subsequent thought about the nature of economic competition.

Edward Cayley, in his pamphlet on Corn, Trade, Wages and Rent (1826), typifies the growing conservative reaction against the movement for free trade in grain. Though most of his references to competition are incidental, he does nevertheless reveal a faint return to the mercantilist attitude towards the "mad struggle of competition," the "mad competition of money to find profitable investment," and the problems of international trade, wherein he thought "a limit must be attached to the principle of competition." However, both this and his later treatise, On Commercial Economy (1830), display little theoretical skill.² Much the same could be said of William Atkinson's The Reason for Protecting Home Trade, or the Principle of Free Trade Refuted (1833) and his various other published works. His slightly bizarre style of reasoning, founded on a rather mystical "law of PROPORTION," is of interest mainly because it pits the principle of "co-operation, co-action, or conjunction" against the opposing principle of competition or "confliction" - the latter being, in Atkinson's mind, very definitely a bad thing.³

On the whole, the conservative reaction led nowhere, theoretically speaking, because those who adopted this attitude were generally not interested in, or skilled at, elaborating theoretical systems, however suggestive they may have been on matters of detail of a practical nature. The scientific attitude towards

¹Nassau Senior may well have done so before Edmunds. I have not consulted the MSS. of Senior's Oxford lectures, but according to M. Bowley (see her Bibliography of Senior's work in Nassau Senior and Classical Economics, London, 1937), the portions of Senior's Outline (1836) dealing with production costs and increasing returns to scale in manufacturing (pp. 95-102) derived from his third course of lectures delivered in 1828-29.

²Cayley's position in Corn, Trade, Wages and Rent, London, 1826, was elaborated upon at greater length in his treatise, On Commercial Economy, London, 1830. For his comments on competition, see that latter especially, pp. 63, 189, 194 and 240.

³In addition to his The Reason for Protecting Home Trade, London, 1833, see also Atkinson's The State of the Science of Political Economy Investigated, London, 1838, and his Principles of Political Economy, London, 1840 (especially pp. 163ff.).

the study of economics had been ushered in, during the 18th century, with the liberal philosophical outlook on human affairs, and the concept of free competition had provided the much needed sense of order in human affairs whereby that scientific study seemed feasible. It is not surprising then that the renewal of a scientific interest in economics in the 1830s came as a parallel development with the revival of liberal thinking, though these did not always march happily together, hand in hand. The most extravagant re-affirming of faith in classical competition came from a ^{Radical (Liberal)} ~~Henry~~ M.P., G.P. Scrope, an ardent advocate of free trade and social reform, as much opposed to Malthusian population theory as to Owenite policies for co-operation. From this unusual blend came the least restrained passages of appeal to the classical concept of competition, and at times Scrope seemed almost to be caricaturing the idea, as when he wrote in all seriousness:-

... Competition is the soul of industry, the animating spirit of production, the ever-present, all-pervading elastic principle, which like the power of gravitation on the atmosphere and ocean fills every vacuum in the market of exchanges.¹

However, the 1830s were generally not a period when grand principles were proclaimed and grand syntheses written. Instead, the mood of the period was exploratory, and Nassau Senior's Outline of Political Economy (1836) best illustrates the continuing interest in competition as an abstract scientific principle in the style of Ricardo's earlier work.² Senior never focusses his attention upon competition for its own sake, but in a few remarks he captures the essence of the hypothetical approach to competition as an abstract ideal in the analysis of value. He states that if free competition is to be "perfect" in its operation, then there must be no "disturbing causes" and "full information" is necessary, adding that "it is obvious that these suppositions have no resemblance

¹G. Poulett Scrope, Principles of Political Economy, 1st ed., London, 1833, p. 200.

²Nassau Senior's Outline of the Science of Political Economy, London, 1836, first appeared in the Encyclopedia Metropolitana (in 1836) but was drawn from his lectures delivered at Oxford (1826-30), and passed through six editions (to 1872) with very minor changes. I am citing from the edition London: Geo. Allen & Unwin, 1938.

to the truth."¹ But Senior goes on to justify his hypothesis as follows: "we do not mean to state that any such commodities exist, but that if they did exist, such would be the laws by which their price would be regulated."² Here, Senior's phraseology follows very closely that of Ricardo's competitive postulate: "when competition operates without constraint."

There would be little point in continuing this discussion of the literature of the 1830s. I have found nothing vitally new throughout the great numbers of treatises written and published over this decade, that is, in regard to competitive topics. Of course, the period was very alive to new ideas, both in England and elsewhere. Aside from such names as Senior, Longfield, Cournot, Thünen, Rossi, and the elder Walras - all of whom showed considerable flair in analysis - one could also mention W.F. Lloyd's casual enunciation of marginal utility in his Lecture on the Notion of Value (1834), but alas, no new doctrines emerged at this time (Cournot, of course, being re-discovered later in the 1860s). By the 1840s, economic thought had become rather stagnant again.

3. Reactions on the Continent

In France, the negative reaction to classical theory came sooner, but took longer to grow into a concerted attack. Socialism in France only began to accelerate by the late 1830s, just as its counterpart in England was losing its momentum. Throughout the 1840s, the various proponents of socialism in France waged war upon classicism at a feverish pitch, reaching a tremendous climax around 1848 and dying down rather suddenly after the revolutionary events of that year.

Critics generally respond to those features of an intellectual system which their opponents have themselves highlighted. Hence, in England socialist theorists tried to adapt Smith's labour theory of value to question the view that competition was equalising in tendency. In France, the emphasis was different. As

¹ ibid, p. 102 (ed. 1938).

² ibid, p. 114.

the leading classical proponent, J.B. Say had put great store in the automatically self-equilibrating tendencies of open market competition. The focus had been on dynamic stability rather than on the precise character of economic equilibrium itself. Inevitably, then, critics of classical theory in France depicted the faults of competition in terms of its de-stabilizing or chaotic tendencies. In both France and Great Britain, where competition had been associated with freedom or "liberté," reactions to classicism generally amplified all the conflictual and compelling or coercive possibilities inherent in the notion of competitive interdependence.

Since most of this literature is of a highly rhetorical and emotional nature, and is seldom closely reasoned, it will be sufficient to scan the horizon rather hastily, citing a few prominent people and the key phrases they employed.

Charles Fourier was quite possibly the first to send out negative waves when, in his Théorie des Quatre Mouvements (1808), he made some angry but passing allusions to "la concurrence anarchique" and to "la frénésie de concurrence," allusions to the de-stabilising potential in competition.¹ He did not draw any sharply delineated conclusions, and by 1822 his next major work, Théorie de l'Unité Universelle, merely pitted "la vraie concurrence" against "la fausse concurrence" in such a way that there seemed to be at least some redeeming virtues in the concept. However, out of his bizarre speculations I could find little of substantive interest beyond a few brief epithets he carelessly tossed about, such as the contrast between "la concurrence INSOLIDAIRE, MENSONGERE, COMPLICATIVE," and "la concurrence SOLIDAIRE, VERIDIQUE, REDUCTIVE."²

Fourier's only notable follower in the years to come was Victor Considérant. The latter's La Destinée sociale (1834) remained faithful to Fourier's strange terminology and train of thought, but it lacks any significant comment upon competition. Considérant's later work, Principes du Socialisme (1847), returns to

¹Charles Fourier, Théorie des Quatre Mouvements et des Destinées Générales, "à Leipzig" (i.e. really Lyons), 1808, pp. 311-66 passim.

²Fourier, Théorie de l'Unité Universelle (1822), from OEuvres Complètes de Ch. Fourier, in 6 vols., Paris, 1841-48, Vol. II, pp. xi-xii.

a more conventional mould and merely expresses ideas upon the compelling and chaotic properties of competition which other writers had already made very familiar by the early 1840s.

Another prominent personage amongst the first generation of critics was Saint-Simon whose numerous writings ranged over a wide field. Like Robert Owen, Saint-Simon's penchant for religious mysticism seems to have precluded any negative rantings against the competitive principle. Throughout his lengthy OEuvres, the idea is scarcely to be found, though shortly after his death, one of his many avid followers, Saint-Amand Bazard, made his disapproval of the classical principle quite emphatic throughout his lengthy summary of La Doctrine saint-simonienne (1826-28).¹

In spite of the ferocity of the socialist barrage upon the classical citadel, the most threatening gesture came not from a socialist but from a first-generation liberal turned conservative: J.C.L. Simonde de Sismondi. In his Nouveaux Principes d'Economie Politique (1819), Sismondi did not delve very far into the precise logic of market dynamics, only about as far as did J.B. Say with his Law of Markets. Merely matching assertion with counter-assertion, Sismondi saw in the introduction of new machinery the source of all economic difficulties: unemployment, over-production leading to slackening demand and under-consumption. But whereas J.B. Say had appealed very little to "la concurrence" in enunciating his "théorie des débouchés", Sismondi now held that principle out as "un des axiomes sur lesquels on a le plus insisté en économie politique."² Rather than advocating social revolution, Sismondi called for government intervention, entitling one of his chapters: "Comment le gouvernement doit protéger la population contre les effets de la concurrence."³ As a nobleman who had formerly spoken out in favour of Adam Smith's system of natural liberty, Sismondi commanded wider

¹This was included in OEuvres de Saint-Simon et d'Enfantin, 2nd ed., 47 vols., Paris, 1865-78, Vols. XLI and XLII (1877).

²Sismondi, Nouveaux Principes d'Economie Politique, 2 vols., Paris, 1819, Vol. I, p. 378. See also Vol. I, p. 304 of the new edition by G. Sotiroff, Paris, 1951.

³Ibid, Book VII, ch. VII, Vol. II, pp. 335-44 of 1819 ed., pp. 225-32 of 1951 ed.

attention from classical writers (among whom were none other than J.B. Say and David Ricardo) than did a host of other lesser figures on the intellectual landscape.

Sismondi was supported by no active followers in the literary arena, but his Nouveaux Principes did acquire some currency, appearing in a second edition by 1827. The sense of unease that his work created can be seen in the various lectures given by J.A. Blanqui and P. Rossi at the Collège de France in Paris during the 1830s. Both men were basically liberal in sentiment and, while retaining competition as an analytical concept, both nevertheless felt obliged to enter some qualifications regarding its application to practical affairs.¹ This tendency is even more pronounced in the course of lectures given by Michel Chevalier during the 1840s. To appreciate the restraint Chevalier showed, we must first return to developments in the socialist movement.

We can gain some impression of the hysterical fury that this movement had managed to produce by the late 1830s by examining Louis Blanc's stupendous tirade, L'Organisation du Travail, which had appeared initially in a serialised form in 1839 and went through numerous published editions from 1841 onwards.² Now, Blanc was on the whole a sane individual, and so his manner of expression is a barometer of the times. For him, competition - like money - was the root of all evil, a "principle of tyranny," a "cowardly and brutal" principle which created "prodigious confusion." One chapter is entitled: "La Concurrence est pour le Peuple un Système d'Extinction."³ To counter this ultimately malevolent force, Blanc advocated a rather vague form of centralized control and direction over economic activities, but his analysis is so superficial that one cannot even begin

¹See J.A. Blanqui, Cours d'Economie industrielle, 3 vols., Paris, 1837-39, and M. Pellegrino Rossi, Cours d'Economie Politique, Bruxelles, 1840. Rossi's abstract approach, like Senior's, is to be noted on p. 163n1.

²Unfortunately, the earliest version I have been able to consult is the 2nd ed. of 1845, so I cannot properly assess Blanc's originality on some points of detail, such as on his claim as to the self-extinguishing character of competition.

³ibid (2nd. ed., 1845), pp. 7-57. The English phrases are drawn from the translation of 1848 (The Organization of Labour, London, 1848, pp. 25, 39 and 29).

to look for any alternative principle in his work which would grapple with the issues of conflict resolution. Like so much of the ideological literature of both sides of the great battle, Blanc's efforts generated more heat than light.

Almost, but not quite, the same judgement can be handed down for the most powerful intellects drawn into the socialist current of the 1840s, namely, Karl Marx and Pierre-Joseph Proudhon. In his first major work, Qu'est-ce que la Propriété? (1840), Proudhon did not broach the subject of competition directly, though he was already characterising "liberté" as "anarchie." However, in a second book, Systèmes des Contradictions Economiques (1846), Proudhon advanced the argument that competition was a self-defeating, self-destroying process in which there were an increasing number of victims and an decreasing number of survivors: "N'est-il pas évident, d'une évidence immédiate et intuitive, que la Concurrence Détruit la Concurrence?" he wrote dramatically.¹ This claim seemed to fit the circumstances of the day, in a rather loose fashion, in that the rapid rise of bankruptcies and foreclosures of the 1840s only added to the already apparent tendency towards industrial concentration into large financial and productive units - but in truth Proudhon's assertion only called for a better understanding of what economic competition consisted in, by way of competitive units and types of competitive interaction.

In the heated intellectual atmosphere of the 1840s, this type of coolly articulated analysis was not forthcoming, either in Proudhon's own writings or in those critical replies that were addressed to his work. With his anarchist philosophy, Proudhon was satisfied to say that competition could never be eliminated and so had to be perfected under different institutional arrangements.²

¹P.-J. Proudhon, Système des Contradictions Economiques, ou Philosophie de la Misère (1846), from Oeuvres Complètes de P.-J. Proudhon, eds. C. Bouglé and H. Moysset, Paris, 1923, Vol. I, p. 209. Unfortunately, my knowledge of the French literature of this period is too limited for me to say whether or not Proudhon was first to advance this argument. Quite likely, the huge periodical literature of the period brought this theme forward before 1846. For example, Blanc refers to a related idea casually, as if it were already currently fashionable.

²This is a general impression gleaned from several of Proudhon's later works, though it is supported by A. Ritter's commentary, The Political Thought of Pierre-Joseph Proudhon, Princeton: University Press, 1969, pp. 122-24.

Proudhon's Contradictions brought forth Karl Marx's scathingly sarcastic retort, La Misère de la Philosophie (1847), in which Marx scoffed at Proudhon's method of applying the Hegelian dialectic.

In this, his first book on economics, Marx was straining to score clever and witty points against Proudhon on matters pertaining to methodology. The fact remains that in substance Marx did not challenge Proudhon's underlying case as to the self-contradictory nature of competition. In various other articles, pamphlets and books written alone or jointly with Engels during the 1840s, Marx brings to the subject of competition nothing especially unusual. All that need be said here is that Marx's writings at this stage were far more replete with angry allusions to competition than were his later and more mature productions of the 1850s and 1860s when he turned his attention to the subject of value theory and had rather less to say about market behaviour as such.¹

It was against this general background of ideological fervour in the 1840s that otherwise liberally minded men like Michel Chevalier began to entertain genuine doubts about the much alleged social benefits of the competitive principle. In his first course of lectures, delivered during 1841-43, Chevalier upheld the virtues of liberty but felt obliged to open his remarks with a firm note of qualification regarding "la concurrence illimité."² In following up this idea, he entered upon a lengthy and detailed factual survey on the various forms of

¹I have perused a fair selection of the early MSS and publications of Marx and Engels, though during the past few years the stream of new material seems to have been endless. In addition to Marx's La Misère de la Philosophie, the most relevant items are their joint publications, Die deutsche Ideologie (written in 1845-46, first published 1932, English translation, London: Lawrence & Wishart, 1965, selections) and "Lohnarbeit und Kapital," from the Neue Rheinische Zeitung (1849), translated as "Wages, Labour and Capital," in Marx and Engels, Selected Works, 2 vols., Moscow, 1962, Vol. II, pp. 74-97. Their Communist Manifesto contains but one single reference to competition. The various references to competition in The German Ideology are suggestive but do not add up to any clearly defined position. This early material (like the later productions of the 1850s and 1860s) is quite lacking in interest or originality. Engels' own Die Lage der arbeitenden Klasse in England, Leipzig, 1845, is filled with some typically virulent comment upon competition and to judge by this work, one imagines that Engels was in large part responsible for much of the competitive phraseology in their joint writings up to 1850. For some further comment on Marx, see below, Chapter VI, section 4.

²M. Chevalier, Cours d'Economie Politique, 3 vols., Paris, 1842-50, Vol. I, p. 17.

government intervention, especially in the spheres of transport and public works, which he believed to be examples where the principle of competition had been superseded. On the other hand, Chevalier, observed that competition, in all its diversity, could never really be suppressed or completely eliminated from economic affairs, because it was the inevitable outcome of "personnalité" as well as "liberté."¹ One clear example Chevalier explored in detail was the possibility of competition between public and private enterprises,² but Chevalier did not draw any major conclusions such as would undermine the classical concept.

Chevalier was not alone among the advocates of industrial liberty who, during the 1840s, entertained serious reservations about competition, reservations which were later dropped or ignored during the counter-reactionary decades of the 1850s and 1860s. One could cite such others as Joseph Garnier, Gustav de Molinari and A.E. Cherbuliez in this respect,³ though one must be very careful to differentiate the attitude towards "liberté" from the attitude towards "concurrence" during this period. During the heat of the battle in the late 1840s, these two concepts were mildly dissociated from one another, as we can detect by the absence of any prominent phraseology of "libre concurrence," a phraseology which was to be revived in the 1850s.

However, even at the most severe moments, classical competition had its defendants, Dunoyer and Bastiat. Even though these two writers were active before 1850, it will be more useful to consider their works in section 5, below, where the character of the counter-reaction will be studied.

¹ ibid, Vol. II, p. 127.

² ibid, Lessons VI and VII of Vol. II.

³ There are some interesting comparisons to be made between the literature of the late 1840s and that of the 1850s and 1860s. Compare, for example, Joseph Garnier's 1st ed. Eléments de l'Economie Politique (Paris, 1846) with the 4th ed. of 1860; Gustave de Molinari's Etudes Economiques (Paris, 1846) with his numerous writings from the post-1848 period (for example, his Questions D'Economie Politique, 2 vols., Paris and Bruxelles, 1861); or A.-E. Cherbuliez's Le Socialisme, C'Est la Barbarie (2nd. ed., Paris, 1848) with his Précis de la Science Economique, 2 vols., Paris, 1862.

In the meantime, a few concluding words should be devoted to trends elsewhere than in France and England. The classical liberal tradition had been founded in these two nations, and we should not be too surprised to find different patterns of response in other countries. In view of their rising prominence during the latter half of the century, both Germany and the United States call for some comment.

In America, the scientific attitude towards (and academic study of) economics was slow to gain ground following the emergence of the classical tradition in Great Britain. In assimilating the classics during the 1820s and 1830s, American writers had adopted a rather quietly neutral position regarding the normative status of competition, simply because the idea did not bear very directly upon any of the most pressing economic debates of the day. Thus, by the mid-century, there was no discernible reaction and hence no discernible counter-reaction to speak of. We can appreciate this fact best by considering that H.C. Carey's numerous publications on economics contain little or nothing of direct relevance to competitive themes, even though Carey is best known for his views on economic "harmony."¹ And this general impression is confirmed when we consider the example of the German-born Friedrich List.

Before emigrating to America, where he lived from 1825 to 1832, List had already shown signs of the economic nationalism that he was to advocate on his return to Germany. While in America, List wrote his Outlines of American Political Economy (1827), a series of letters on economics in which the few references he makes to competition are quite incidental, pointing faintly towards his remarks to come later in the 1840s.²

As we have seen in a previous chapter, economists in Germany accepted the classical apparatus of price theory only with much reluctance regarding its

¹H.C. Carey, Principles of Social Science, 3 vols., Philadelphia, 1858; also his earlier Principles of Political Economy, 3 vols., Philadelphia, 1837-40, and his The Past, the Present, and the Future, London, 1848, contain little of interest. I have not yet been able to consult his The Harmony of Interests (1850).

²Outlines of American Political Economy (1827) from The Life of Friedrich List, ed. M.E. Hirst, London, 1909.

liberal implications. In general, their reluctance was in regard to the concepts of freedom and especially that of individuality. For them, the grouping problem was of supreme importance, insofar as they could not take a well-defined and well-co-ordinated national economy for granted. With this problem of national identity in mind, List constructed a theoretical account of international trade and economic development which stood at odds with the classical liberal doctrine.

In his treatise, Das nationale System der politischen Okonomie (1841), List advocated freer movement and economic exchange within German principalities, but challenged the classical liberal theory of international trade by insisting that exchanges between nations of unequal strength tended to aggravate rather than eliminate those inequalities.¹ Thus, in a sense, List combined liberal with mercantilist doctrines, though for political reasons he put the balance of his case against the so-called "cosmopolitan" system of Adam Smith.

Prior to 1848, socialism was almost non-existent as a concerted movement in Germany. The first serious socialist writers it produced - Marx, Lassalle and Rodbertus - generally chose targets other than competition against which to direct their intellectual hostilities, probably because there had never been a strong indigenous support of that principle amongst the classical theorists in their own country.² On the other hand, List's style of nationalism was founded in part upon a questioning of the benefits of individualized competition, and his theoretical framework, vague and inadequate though it was, proved a very attractive alternative for the growing number of historical economists in the 1840s and 1850s - Knies and Hildebrand in particular - and it is this latter group, not the socialists, who represented the most influential opponents to classical competition in Germany during the latter half of the 19th century.

¹Das nationale System der politischen Okonomie (1844), ed. A. Sommer, Berlin, 1930, and The National System of Political Economy, tr. S.S. Lloyd, 1885, reprinted by A.M. Kelley, New York, 1966.

²This is best illustrated by K.H. Rau's Lehrbuch der politischen Okonomie, 3 vols., 1826-37 which became the German "classic" compromise between the older style of Cameralism and the newer analytical approach of Adam Smith and Ricardo.

4. John Stuart Mill's Re-Statement of Classicism

It is perhaps coincidental that the very year to witness the sudden climax of political unrest on the continent should also produce the new synthesis of classical economics which was to stand as the leading textbook on the subject for the next twenty years and more.

Since the late 1830s, political economy had been more or less in a stagnating state of affairs in England (at least in the theoretical sphere). And yet, just as the initiative seemed to have been regained by French writers up to 1848, that initiative passed once more across the Channel, and once again, in contrast to the French style of extravagant over-statement, the science of economics received a more pragmatic and down-to-earth reformulation in the hands of an Englishman.

However, we should bear in mind that John Stuart Mill began work on his Principles of Political Economy as early as 1844 and was quite alive to the intellectual and political currents then prevailing in France when he undertook this task. What is so noteworthy - even remarkable - about his performance, and especially in regard to the specific themes of competition, is the great diversity of viewpoints Mill adopted in an age which had seen so much rigid simplification. Mill's Principles scans a very wide horizon, reaching across the fields of historical and contemporary fact, theoretical concepts, scientific methodology, institutional analysis as well as political debate.

In so short a space as I have, it is difficult to do justice to the full complexity of his views in any one of these broad categories of speculation. Nevertheless, some attempt must be made to cover the full range of his thinking, since it is this very comprehensiveness of treatment that gives Mill's textbook its unique character and position in the history of economic thought. As an eclectic, Mill drew from many sources and, on points of detail, had many forerunners, but it was his very attempt at synthesis that marks Mill's Principles as one of the crucial turning points in this history.

Probably the best known statement Mill ever made on the subject was that "only through the principle of competition has political economy any pretension to the character of a science."¹ As they appear in his text, Mill seemed to have attached no great importance to these words. Indeed, they come almost as a throwaway line, as a subordinate clause in a longer sentence of a chapter whose very purport was ostensibly to argue that in regulating economic affairs competition did not exercise an "unlimited sway," and that another "conflicting principle," Custom, was of equally great influence. (See Book II, Ch. IV, "Of Competition and Custom.") However, Mill leaves no doubt as to his reasons why the character of political economy has any scientific pretensions on the strength of the competitive principle.

We can consider his position in terms of a very neat syllogism whose elements are drawn from various places throughout the text. His major premise is that in the study of economic affairs, "the question of Value is fundamental," (p. 436). "Almost every speculation respecting the economical interests of a society," he wrote, "implies some theory of value." To this, he added the crucial minor premise that only insofar as "values and prices are determined by competition alone," could they be "reduced to any assignable law," (p. 440). Mill was careful to insist that political economy as a science dealt not with "merely temporary truths" but with "permanent and universal laws," (p. 436).

With these premises, Mill went on to give the classic rationale of the principle of competition as an heuristic fiction with which to explore and develop the calculus of economic logic. His reasoning went as follows:

... So far as rents, profits, wages, prices, are determined by competition, laws may be assigned for them. Assume competition to be their exclusive regulator, and principles of broad generality and scientific precision may be laid down, according to which they will be regulated. The political economist justly deems this his proper business: and as an abstract or hypothetical science, political economy cannot be required to do, and indeed cannot do, anything more. (p. 242).

¹Mill, Principles of Political Economy (1848), ed. W. J. Ashley, London, 1909, p. 242. Hereafter, I shall cite from Ashley's edition, all citations being from the 1st ed. of 1848 unless otherwise noted.

This classic statement came as an afterthought, not as a recently discovered or newly adopted position, but as an articulation of the scientific attitude and approach he had learnt from Ricardo, whose competitive postulate for value theory he quite consciously repeated as part of the minor premise given above. We can see that this rationale was an afterthought, because Mill introduced the argument only to make another point: that political economists had generally fallen into the habit of exaggerating the effects of competition, treating mere "tendencies" all too often as realities (p. 242). Other economists before Mill, in particular two economists who shared Ricardo's abstract analytical bent, Senior and Rossi,¹ had vaguely intimated this scientific interpretation^t in the course of their work, but no one had expressed the case quite so explicitly as Mill had done in 1848.

This item alone would have made Mill's Principles something of a milestone in the long journey towards the 20th century scientific attitudes, but Mill saw in the idea of competition more than just a scientific significance. In practical terms, Mill put considerable weight upon the idea that competition was an "unfailing test" of productive efficiency, and throughout his many passages on this theme of productive efficiency, we can discern at least two vital aspects in which competition acts as a source of discipline in sorting out more efficient from less efficient arrangements; both as regards managerial efficiency in the organizing and co-ordinating of productive effort and in the determination of the scale of output.² These distinct aspects of efficiency are worth mentioning, because Mill did make a sharp and definite break with Adam Smith on the subject of large-scale organization.

¹ Like Senior, Rossi stressed that competition was only "un tendance" (see note 1 page 155 above). I should add here that Mill was very familiar with the French literature.

² For competition as an "unfailing test" of efficiency, see Mill's Principles, pp. 134, 142, 790, 793 and 932; for its role in selection of personnel for their leadership qualities, see pp. 136-40; and for the relationship between scale and efficiency, see pp. 134 and 142. As an indication of Mill's influence, mention could be made of G.J. Stigler's appeal to Mill as a source of inspiration for his so-called "survivor technique" for estimating economies of scale ("The Economies of Scale," Journal of Law and Economics, Vol. I, Oct. 1958), though it must be said that Stigler's technique is not sound.

In contrast to Smith's antipathy to what he had termed vaguely the interference of "human institutions," Mill took great pains to elucidate the possible advantages and "greater capacity" of "united actions," wherever individual effort is "amenable to discipline" and is capable of "adhering to plans concerted beforehand" in a "combined undertaking," or, in other words, the advantages of co-ordinated, co-operative endeavour.¹ And, wisely, he recognized that the improvements in the "business capacities" of the population as a whole represented one of the most reliable indicators of the general progress of society (p. 698).

But when Mill parted company with Adam Smith, describing the latter's judgements on joint-stock companies as an over-statement of a true principle (p. 140) he did not jump to the opposite extreme of praising bigness per se. In fact, Mill's analysis of this issue is a model of cautious indecision, an exercise in balancing up various "countervailing considerations" in a field of inquiry which, still in the 20th century, has not been satisfactorily settled, after mountains of empirical evidence have been surveyed.²

Mill was not sentimental about the disappearance of inefficient small-scale enterprises in the wake of their more efficient bigger brothers (p. 136), nor was he entirely convinced of the unmixed blessings of large-scale organization and bureaucratic leadership (pp. 790 and 950). And, while he saw in Senior's views about increasing returns to scaleⁱⁿ manufacturing a reasonable empirical generalization exemplifying a more abstract analytical principle of efficiency, he wisely declined to agree with Senior that this "tendency" was an "inherent law" setting manufactures apart from agriculture in some universal sense (p. 703).

In short, Mill had progressed beyond Adam Smith's treatment of the division of labour by recognizing that greater efficiency through increased

¹Mill, Principles, p. 698.

²Mill's discussion is contained mainly in Book I, ch. IX, "Of Production on a Large, and Production on a Small Scale."

specialization (or sub-division of labours) often required a type of co-ordinating not merely through a system of market exchanges but also through what he called, vaguely, the "combination of labour" into larger "units" of production (p. 132); yet, he laid down no rigid rules about scale-economies, and in the light of 20th century investigations, Mill's caution was warranted.

Thus, Mill had very ably identified the source of profound ambiguities that lay deeply rooted in such notions as division of labour, increased efficiency through co-operation, combination and scale: but he did not carry these insights to their far-reaching conclusions about the indeterminateness of competitive grouping. Mill retained the classical concept of competition, predicting that "for a considerable time to come," economists would be concerned chiefly with "a society founded on private property and individual competition," (p. 217, from 2nd. ed. of 1852) as if the unit of this "individual" competition were well-defined.

The ambiguities of competitive grouping and of competitive interdependence led Mill into difficulties when examining the subject of primary income distribution. He attached great importance to the idea that whereas the laws of production "partake of the character of physical truths" with their "necessary conditions," the laws of income distribution were a matter "solely of human institutions" or of the "laws and customs of society." (pp. 199-200 and p. 21). The irony is that in applying ~~the~~ classical theories, Mill drew conclusions which on balance seemed to reverse this distinction. Having shown very persuasively that productive efficiency is affected by business organization as much as by scale, natural resources, and so on, that is to say, by varying social and institutional arrangements, Mill proceeded to treat of income distribution in a manner which suggested the inevitability of natural constraints. In particular, Mill argued with McCulloch, Torrens and Senior that labour combinations designed to raise wages were futile exercises, given the logic of the principle of population and the accompanying constraints imposed in the form of the capital/population ratio.¹

¹This discussion is to be found mainly in Book II, chs. XI-XIII.

Mill has been much abused for adopting this dichotomy between production and distribution as he did; but out of it came, I think, two patterns of thought which are rather modern. First, Mill's dichotomy lends itself to another distinction: that between the "natural" constraints (or "necessities" as he put it) of technology, biology, resource endowments, and so on (all taken as "given" for some analytical purposes) and the "social" constraints (comprising such things as laws, customs, tastes and preferences, or "social arrangements"). And, in this two-fold division of constraints which taken together determine an equilibrium, the idea of competition is pre-eminently a social constraint, or "the" principal social constraint of economic theory.

There are inklings of another modern trend of thought in Mill's text, and this trend also points to the fundamental distinctions he drew between the productive and the distributive sides to economic affairs. This trend centers around Mill's normative attitude towards competition, an attitude that can be summed up, very imperfectly, as follows: Whereas Mill certainly defended the virtues of competition considered as a source of productive efficiency, he nevertheless entertained serious misgivings about competition as a guarantor of distributive justice.

That Mill readily and openly acknowledged his doubts concerning the shortcomings of competition is undeniable and highly significant. In answer to the socialist critique, Mill made it clear that his own defense of the principle was based not on a priori grounds but on the pragmatic approach of weighing up the various pros and cons:

I do not pretend that there are no inconveniences in competition, or that the moral objections urged against it by Socialist writers, as a source of jealousy and hostility among those engaged in the same occupation, are altogether groundless. But if competition has its evils, it prevents greater evils.¹

Nor did Mill look upon it as a universal or inevitable phenomenon. Not only did he conclude that competition in the economic sphere of life arose at a "comparatively modern period," (p. 243), there is also the strong hint that in his version

¹Mill, Principles, p. 793, added to the 2nd ed. of 1852.

of the ideal state of the future - the stationary state - the competitive "struggling to get on, ... the trampling, crushing, elbowing, and treading on each other's heels" would be absent (p. 748).

Now, from the many judgements Mill renders throughout his Principles, it is an easy task to show that he saw in competition a beneficial source of productive efficiency; it is far less easy to show that his qualms about that concept originated in the sphere of income distribution. The textual evidence is indirect but persuasive nonetheless. Mill had made a special point of contrasting competition and custom (that is, habit or traditional behaviour) as "conflicting principles," and it was in this context that he wrote: "Custom is the most powerful protector of the weak against the strong," (p. 243).

With this contrast in mind, Mill gave an able account of the nature of competitive interdependence and ambivalence as one could hope for:

... But though the law of the strongest decides, it is not the interest nor in general the practice of the strongest to strain that law to the utmost, and every relaxation of it has a tendency to become a custom, and every custom a right.¹

And, behind this insight lay two others: Between sellers and buyers, there is "an opposition of immediate interest" (p. 708), whereas at the same time "conjoint action is possible just in proportion as human beings can rely on each other," (p. 110). Thus, such values as "liberality" and "generosity" alone ~~cannot~~ "preclude taking the utmost advantage of competition," (p. 404) because even enlightened self-interest dictates that a certain degree of self-restraint be maintained. From these various comments, one can piece together the underlying implication of Mill's argument: Competition, when unchecked by "customary" restraints, yields an unjust distribution of income.

This survey of Mill's Principles has been wide in its coverage, but it scarcely begins to comprehend the many subtleties and applications

¹ ibid, p. 793, from the 2nd ed. of 1852.

of the principle that are to be found throughout his full text. I hope it has served to establish three broad impressions: Mill made explicit the hypothetical character of competition in its role of scientific principle; he retained the classical concept of competition (individualized market exchange) throughout his theories of production and distribution; and yet adopted a rather ambivalent attitude towards the normative status of the principle, defending it only on pragmatic and historically contingent grounds.

To these three generalities, I would like to add another couple of conclusions which bear indirectly upon the developing themes of competitive doctrine. Marx accused Mill of trying to reconcile the irreconcilable, ascribing to his work a "shallow syncretism." There is much force behind Marx's claim only insofar as we can find numerous inconsistencies throughout Mill's work, but Marx missed the point. Mill was trying - however successfully or unsuccessfully - to reconcile reconcilables. Marx, on the other hand, tried to turn various real tensions, competitively co-existing features of economic life, into quasi-logical "contradictions" which could only be "resolved" (if that is the correct term) by some ill-defined transformation of thesis and antithesis into synthesis. In other words, in place of Mill's pragmatism, Marx held out obscurantism.

Secondly, during the onset of neoclassicism in the 1870s, Mill's theoretical structure underwent a rather heavy-handed and severely critical working over by Jevons and others, before Marshall set the record straight. Yet, the fact remains that the weakest aspect of Mill's Principles is its logical rigour. As Blaug has written very tactfully, "the tone of [Mill's] book subtly suggests the unimportance of rigorous analysis for its own sake."¹ People like Ricardo and Senior had already carried the classical style and verbal techniques of analysis (treating of variations in ratios or proportions of inputs and outputs) about as far as they could go without the introduction of explicitly mathematical forms of logic. Mill tried conscientiously to carry this tradition forward, but his efforts served only to emphasize the growing need for mathematical logic.

¹M. Blaug, Economic Theory in Retrospect, 2nd ed., London; Heinemann, p. 180.

At various points, Mill alluded to the possibilities. The relationship between supply and demand, he wrote, should be construed not as a ratio but as an equation (p. 448), and the cost of labour is "in the language of mathematics, a function of three variables," (p. 420). The classical achievement was to have delineated the essential theoretical categories; the neoclassical achievement was to express the classical logic in an explicit mathematical calculus. If Mill's own logic of 1848 was deficient in many ways, it can be said with equal validity that he had caught a glimpse of things to come and helped restore a sense of orderliness and scientific coherence which allowed the neoclassical breakthroughs to occur.

It is a measure of Mill's long-run influence that the scientific attitude towards competition that he had enunciated in 1848 still constituted a consensus view more than a hundred years later.

5. The Counter-Reaction

For ten years or so, following 1848, the general run of economic thought seems from our vantage point in time to have moved backwards rather than forwards. Scientific thought does not flourish in an atmosphere of literary and political hysteria. The 1850s, then, is a period when order was being restored. Worrisome and repetitious re-assurances about fundamental values gradually gave way to a sense of complacency which in turn led to the more adventuresome and exploratory thought of the 1860s.

Even though Mill's Principles was soon acknowledged the best statement on the subject for this period, the guiding spirit of the counter-reaction was Frédéric Bastiat, whose meteoric literary career lasted only from 1845 to the year of his death (1850). Bastiat was one of those who had spoken up in defense of old liberal values during the heat of the crisis - and not afterwards, like Chevalier, Garnier, and many others who had waited for the peaceful and subdued atmosphere of the 1850s to proclaim their allegiances. Alongside Bastiat, one could also name Charles Dunoyer who had been engaged in the battle to defend industrial liberty much earlier than Bastiat. Conscientious in the gathering of empirical data, Dunoyer lacked the flamboyance of Bastiat and his work never quite

reached the same prominence as the latter's.¹

In this history, Bastiat's Harmonies Economiques (1850) constitutes something of a pinnacle. His strategy was to fight fire with fire, meeting the most absurd of the socialists' allegations (such as that competition was a totally destructive force) with equally absurd counter-allegations, at times depicting competition as the ultimate social panacea, or the "indomitable humanitarian force" and the "most progressive, the most egalitarian, the most universally leveling of all the laws to which Providence has entrusted the progress of human society."²

To be fair, Bastiat did enter the qualifying words, "I do not deny, I recognize and deplore as much as others, the suffering that competition has inflicted on men,"³ but this cautionary note stands rather insignificantly alone amongst his oft-repeated assertions that "in this wonderful mechanism the interplay of various aspects of competition, apparently so antagonistic, brings about, as its singular and reassuring result, a balance that is favourable to all simultaneously."⁴ The key word here is "balance," because what is so at fault with Bastiat's judgements is its very lack of balance. Both he and his most inveterate foes were obliged to acknowledge exceptions, pros and cons to their case, but when weighing up these pros and cons they both managed to arrive at such opposite and distorted results.

¹As co-editor of Le Censeur Européen (Paris, 1817-20) with Chas. Comte, Dunoyer had favourably reviewed J.B. Say's Traité in 1817 (also in 1815 in the earlier Le Censeur, vol. VII). Dunoyer's three major works pursued the theme of industrial liberty in endless detail: L'Industrie et la Morale, Paris, 1825; Nouveau Traité de l'Economie Sociale, 2 vols., Paris, 1830, and De la Liberté du Travail, 3 vols., Paris, 1845. Considering his central theme, Dunoyer had rather little to say specifically in regard to competition.

²Bastiat, Economic Harmonies, ed. G.B. de Huszar, London: Van Nostrand, 1964, pp. 286-89.

³ibid., p. 315.

⁴ibid., p. 305.

Thus it was that Bastiat, like Dunoyer before him, had argued himself into an awkward corner. By placing their case solely upon the virtues of liberty, they ran into difficulties when confronted by the assertion that "free competition" was compelling and coercive. Dunoyer had attempted to surmount this genuine and profound dilemma of liberalism as early as 1825 when, in his L'Industrie et la Morale, he argued: "La concurrence, loin de m'empêcher d'agir, me stimule à mieux faire."¹ Yet, even the idea of a stimulus contains coercive as well as motivating implications, and the only viable resolution of the liberal dilemma was to avoid placing sole emphasis upon the single principle of freedom itself and to recognize that certain forms of constraint are socially necessary and desirable. Bastiat, Dunoyer, and the counter-reactionaries of the 1850s missed this simple but far-reaching truth. The "discipline" of the market, in classical terms, was prime facie a form of beneficial constraint ensuring efficiency.

The counter-reactionary attitude was at its most outspoken in France, where the ideological battle of the 1840s had been most fiercely waged. One can find a few isolated examples of this mood in Germany and America, but generally speaking, the intellectual currents in these countries moved over different ground, and the idea of competition was still not the heart of any ongoing debate. In Great Britain, the counter-reaction was of a far more subdued character, probably because Mill's Principles proved so successful in bringing to the study of economics a pragmatic and empirical frame of mind.

There were, of course, a few writers who did adopt something of a complacent attitude about the inherent virtues of competition, during those years of afterglow, the 1850s, when the intellectual ferment had quieted down. One could mention in this respect writers such as Newman, Rickards, and Jennings.² And, it may be worth noting John Stuart Mill's reaction to F.W. Newman's Lectures

¹Dunoyer, L'Industrie et la Morale, 1825, p. 349.

²See F.W. Newman, Lectures on Political Economy, London, 1851; G.K. Rickards, Three Lectures, Oxford & London, 1852; and R. Jennings, Natural Elements of Political Economy, London, 1855.

on Political Economy (1851) which he reviewed in the same year of its appearance. Just as in his later "Chapters on Socialism," Mill made no concessions to false sentiment, insisting that economic problems were far more complex than Newman had represented them. "Socialists may be over-confident," Mill wrote, "but they are no such fools as Mr. Newman takes them for."¹

With that thought in mind, what can be said by way of a concluding summary of this turbulent period of reactions and counter-reactions, stretching as it does over at least three decades and more, from the 1820s to the 1860s? Several general conclusions can be drawn.

First, a number of genuine intellectual problems posed by the classical concept of competition had been uncovered - problems concerning the definition of competitive units, the proof of the alleged equilibrating tendencies, and so on - but these problems were not examined to bear as effectively as they might have been, because the ideological attack had been conducted altogether on too emotional a basis. Opposing sets of values were indiscriminately hurled against one another, and there was no possibility of coherent analysis or effective synthesis when the only results forthcoming were exaggerated distortions.

Thus, the classical concept of competition survived, because the socialists were unable to provide any comprehensive alternative. The principle of co-operation or association - without any account being taken of the manner in which conflicts were to be resolved - amounted to mere wishful thinking. On the other hand, free and open market competition promised some semblance of order and system, whereby individual striving was reconciled with community objectives. The strength of this scientific appeal to order and system can be measured by what followed in the neoclassical era.

However, the great battle of ideas did have one lingering effect. The classical concept of competition stood, but the classical attitude towards that

¹"Review of Newman's Political Economy," from Westminster Review, vol. LVI, Oct. 1851, cited from Mill's Essays on Economics and Society, Vol. IV of Collected Works, ed. J.M. Robson, University of Toronto Press, 1967, p. 446.

concept was shaken. Mill's defense was conscious and deliberate, based not on a priori reasoning but on pragmatic assessment of empirical evidence. As time passed, Mill's ambivalent and highly qualified attitude towards the mixed blessings of competition became a permanent and recognizable feature of the neoclassical tradition, just as did Mill's scientific attitude towards competition as a useful hypothesis to be explored, rather than as a larger-than-life symbol to be worshipped.

Chapter V

THE TRANSITION TO NEOCLASSICISM

1. The Nature of the Transition

By the middle or late 1850s, it had become apparent that the bulk of classical theory had survived the battering given to it by a generation of critics. Yet, by the early 1870s, this same body of theory was proclaimed to have been overthrown - for rather different reasons - by men such as W. Stanley Jevons and Léon Walras.

In some important respects, the claims of Jevons and Walras were correct. Both Malthusian population theory and Ricardian value theory were to disappear from the scene. A more mature historical perspective altered this hasty judgement. The earlier classical body of theory had been extended and revised, indeed renewed and revitalized, rather than abandoned or overthrown. How can this be so? If the value theory had been changed, then it was the very idea of competition which preserved the sense of continuity running from classical to neoclassical patterns of thought.

Like their forerunners, the theorists of the 1870s still wanted to explain the workings of the production of wealth and the distribution of income by reference to market exchange, exchange regulated by the competition of buyers and sellers. This similarity is so obvious that it can easily be overlooked and its importance minimized. Standing one hundred years apart, the two great syntheses of Adam Smith and Léon Walras, however different in method and detail, are remarkably of the same mind when highlighting the equilibrating and regulating tendencies of competitive behaviour.

Given the doubts raised by the battle of ideologies throughout the intervening years, this simple but grand similarity between classicism and neoclassicism ought not to be taken for granted. It needs to be explained, for the similarity also masks some equally important differences. These differences may be classified conveniently into three distinct but inter-connected types,

concerning respectively questions of (1) technique, or methods of reasoning; (2) conceptual emphasis; and (3) the "status" given to the competitive postulate.

The transition from classical to neoclassical modes of thought was as much a matter of technique or method as it was of substantive doctrine. Or, as some one has once quipped, the so-called "marginal utility revolution" had more to do with the adjective than the noun. The concept of the marginal relationship and the techniques of the differential calculus marched hand in hand together. Jevons not only exaggerated the doctrinal differences between himself and Ricardo, he also overlooked the fact that both the marginal revolution and the development of mathematical methods were a continuous and natural, if much delayed, outgrowth of classical theory, in particular, of the law of diminishing returns and the whole conception of looking at the economic problem in terms of varying the ratios of inputs and outputs.

What the onset of neoclassicism meant was an intensifying of the appeal to the methods of pure logic, in mathematical form, at the expense of direct empirical support for theories. But this drift towards abstraction was already apparent in the 1830s in the works of Senior, Rossi, Thünen and others. All of the ~~early~~ proponents of the mathematical method had insisted that economic theory required something more than a mere consensus amongst those who propounded it. Theory stood in need of proof, a logical or deductive demonstration of its inherent validity.

Thus, Cournot never tired of exclaiming that while everybody had a "vague" idea of the effects of competition, the theory based upon that idea had to be formulated more precisely and demonstrated more rigorously.¹ In the same vein, Dupuit argued in 1861 that the principle of commercial liberty required not only "le droit de la force" but also "l'autorité de la raison."² The mathematical

¹Cournot made this same point in all three of his economic treatises: Recherches (1838), p. 88; Principes (1863), p. 106; and Revue Sommaire (1877), p. 172.

²Jules Dupuit, "La Liberté Commerciale. Son Principe et Ses Conséquences," Revue Européenne, Vol. XI, 15 sept. 1860, p. 347. This series of articles (from September to October, pp. 347-380, 592-623, and 834-858) was published in book-form as La Liberté Commerciale, Paris, 1861.

approach may have seemed to have burst suddenly upon the scene, in the first few years of the 1870s, according to the enthusiastic reports of Jevons and Walras. Of course, we know that it had been brewing for a long time, and even amongst the practitioners of the established tradition in the 1860s there was a cautious move towards an elementary use of algebraic symbol and inference. The grand texts of Courcelle-Seneuil and Cherbuliez, building upon Mill's foundations, are noteworthy examples,¹ and even Karl Marx himself followed their lead through the 1860s, juggling his simple ratios into all sorts of contortions.²

However, in what follows, the actual details of the mathematical formulation are not of the first order of importance. The proper role of mathematical logic in economic thought will be commented upon throughout the course of this history, and its intimate relationship with the evolving patterns of competitive theory will be indicated. If the neoclassical achievement were to be construed simply as the exercise of "translating" the "verbal" logic of classicism into a more explicitly mathematical language, then the apparent opposition of people like Jevons and Walras towards their classical forerunners would now seem rather shallow and lacking in substance. But such is not quite the case.

On the one hand, the full-blown appeal to mathematics did not lead to a direct "translation" of the classical concept of competition into its mathematically equivalent form, but was accompanied by a number of subtle but

¹See J.-G. Courcelle-Seneuil, Traité Théorique et Pratique des Entreprises Industrielles, Commerciales et Agricoles (1854), 2nd ed., Paris, 1857, and also Traité Théorique et Pratique d'Economie Politique, 2 vols., Paris, 1858-59, esp. Vol. I, pp. 242-58 and 274-75; and A.-E. Cherbuliez, Précis de la Science Economique, 2 vols., Paris, 1862, esp. Vol. I, pp. 208-18. Both writers expressed their debt to J.S. Mill and their work is very much an extension of his analysis.

²Marx, Capital: A Critique of Political Economy, Vol. I, Capitalist Production, London: Lawrence & Wishart, 1970. Marx was obviously familiar with some of the texts of Courcelle and Cherbuliez (both of whom he cites), and much of his opening discussion on value seems to have been written with their terminology and train of thought in mind, though of course with rather different conclusions. The algebraic contortions through which Marx put his C's, V's, and S's were on about the same level of mathematical sophistication as were the Frenchmen's treatment of supply and demand, with their A's and B's, or O's and D's ("offre et demande").

genuine shifts in conceptual emphasis. Indeed, we might even say that many of these alterations were not so much the incidental accompaniment to the mathematics as they were the necessary prerequisites dictated by the very nature of the mathematical methods employed.

Thus, the growing tendency to ascribe to competition all sorts of "perfect" or "ideal" attributes was less an attempt to uncover the "real" or "essential" meaning behind the word than it was to accommodate it to the severe requirements of simplicity imposed by a rather simple form of mathematical logic. In place of the realistic pictures of competitive behaviour sketched by Cantillon and Adam Smith, neoclassical analysts found themselves placing more and more reliance upon such things as perfect knowledge and mobility of resources, "limitless" numbers of competitors, price uniformity and product homogeneity, as well as more outrightly mathematical considerations - such as infinite "divisibility" of the product - which on the face of it had nothing to do with the meaning of competition.

This search after the "translatable" possibilities inherent in the arcane notion of a "perfect" type of competition often led these enthusiastic and adventuresome pioneers of the new mathematical method into some rather questionable exercises in "abstraction," that is, in their attempt to imagine the unimaginable. But we must try to judge their efforts in a proper historical context. After all, they were attempting to make a huge conceptual and methodological leap beyond the "verbal" logic of classicism into the more demanding realm of pure logic.

The great classical achievement had been to identify the fundamental categories of an economic calculus, based on market exchange: inputs transformed into outputs by production organized into combined units of effort, the resulting wealth being distributed for purposes of investment and consumption. The classical economists had explored these concepts in their semantic subtleties and their institutional settings, but they were only groping towards an explicit account of the quantitative logic of production and exchange in equilibrium.

We can best understand why neoclassical theorists found themselves in their rather strange exercises of "abstraction" if we accept that their primary underlying purpose was to articulate as precisely and rigorously as possible a full description of the quantitative nature of equilibrium. However, they were perhaps not as aware of this underlying purpose as completely as I have just indicated, because through force of habit and the scientific tradition they felt that what was needed was not merely a description of equilibrium, but also a theory about how that equilibrium result was to be achieved. A unique equilibrium result¹ arrived at from a unique set of market circumstances was sought after, and the classical concept of competition offered the promise of this orderly and systematic connection between market circumstance and market result: only, the notion of a competitive form of market exchange needed to be "perfected."

In this way, competition served as a connecting link, a source of continuity between two traditions. But this common principle also brought with it a new sort of dilemma confronting the neoclassical people. For, on the other hand, they were troubled by a range of issues concerning the status of the competitive postulate. Now, by "status," I mean quite simply the various reasons why they - like their classical predecessors - believed this competitive postulate was of supreme scientific importance. Profound doubts about its status still linger on well into the 20th century. Even though the issue was discussed critically only by the 20th century, we can trace the origins of this debate back to this transitional period from classical to neoclassical modes of thought.

Though classicism had survived the ideological warfare of the second quarter of the 19th century, it was nevertheless left with some battle scars. Neoclassical theorists were most anxious to render the scientific content of the former body of theory more rigorous, but at the same time they showed a growing hesitation about giving the competitive principle a thoroughgoing prescriptive

¹The question of uniqueness is confused somewhat, insofar as both partial and general equilibrium concepts are involved, since cases such as monopoly also offered the hope of unique equilibrium results in the partial or single-market sense, but apparently not so in the general equilibrium sense.

endorsement, that is, as a guide to economic policy. For classical writers, living between the 1770s and the 1820s, competition was not only a normative principle, but very much an empirical reality. Prior to the 1820s, there had been no felt need to speak of the competitive model as an ideal abstraction or as a hypothetical case: it was an acceptable empirical generalization.

For several reasons, neoclassical writers from the 1870s onwards could no longer adopt this outlook: (1) the mathematical method led them into types of abstract conceptual frameworks which were growing more and more remote from the realities of visible, day-to-day, economic behaviour; (2) institutional changes in the form of larger units of production made even the previous classical model seem less directly applicable to contemporary affairs; and (3) following upon Mill's re-statement of classicism there were strong lingering doubts about the beneficence of the competitive principle, especially in regard to the distribution of income.

Why, then, did neoclassical theorists so tenaciously hold on to the principle of competition, and on what basis did they argue its scientific status? Clearly, they saw in that principle the only promise of a regularity and order which could yield the equilibrium result they were trying to articulate, and the criterion of scientific acceptability they increasingly relied upon was that of pure reason and the rigour of logical argument, not the force of direct empirical evidence.

Once again it is necessary to state that this change of emphasis was neither sudden nor especially consciously designed, but came about so slowly as to be almost imperceptible to those who carried forward the older patterns of thought, into their newer forms. To see how this was done, let us turn now to some of the more crucial steps along the way.

2. The Transition in Great Britain

Traditionally, John Stuart Mill's partial renunciation of the so-called Wages Fund Doctrine in 1869, in response to the criticisms of F.D. Longe and W.T. Thornton, is taken as the turning-point away from classical towards neoclassical theory. Indirectly, much of this debate hinged on the ambiguities of competitive grouping and competitive interdependence, with the familiar problem of labour combinations at issue in this dispute.¹

However, the debate over the wages-fund theory never developed in such a way as to throw light on the subject of competition. In his Refutation of the Wage-Fund Theory (1866), Longe made known his dislike of classical competition, but that is about all we can say of his work,² while Thornton himself seemed not to recognize in labour combinations an alternate form of competitive striving and so thus tended to retain the classical concept of individualized competition.³ On the other hand, Thornton's "New Theory of Supply and Demand" (1866) did strike a near-mortal blow at classical orthodoxy, created a temporary panic amongst those who wished to preserve economy theory as a scientific pursuit, and ultimately hastened the onset of neoclassicism. What did Thornton do?

Quite simply, Thornton questioned the long held (or long implied) view that there was some singular and unique market process called "competition" which led to some singular and unique market result called "equilibrium," and thus cast doubt upon the law-like character of the great classical principle. Thornton

¹The key titles are: F.D. Longe, A Refutation of the Wage-Fund Theory of Modern Political Economy, London, 1866; W.T. Thornton, "A New Theory of Supply and Demand," The Fortnightly Review, Vol. VI, pp. 420-34, 1st Oct. 1866 and "What Determines the Price of Labour or Rate of Wages?", ibid, Vol. VII, pp. 551-66, 1st May 1867, both substantially reprinted in Thornton's On Labour, London, 1869, and Mill's reply, "Thornton on Labour and its Claims," The Fortnightly Review, n.s., Vol. V, May 1869, pp. 505-518 and June 1869, pp. 680-700. This debate was still raging by the late 1870s in the pages of The Fortnightly Review. For Sidgwick's article of 1879, see below, pp.196-7.

²Save to say that Longe (in his Refutation, 1866, p. 55) put his finger on the idea which Cairnes was later to promote under the phrase "non-competing groups." For Cairnes' work, see below, pp.194-5.

³This is a general impression, but see in particular Thornton, On Labour, p. 83.

readily granted that "it is always competition, and competition alone, which determines price," and that competition indirectly reflects the state of supply and demand, but - and here was his main point - these relationships between market price, competition, and supply and demand do not present themselves to us "in any uniform or regular manner."¹ In a startlingly frank manner, he wrote:-

Everyone is in the habit of saying, and no doubt everyone thinks he knows that price depends on supply and demand. No doubt, therefore, everyone also thinks he knows what supply and demand really are, and in what manner it is that they determine price.

But, Thornton went on,

... the knowledge which everyone thus supposes himself to possess is really possessed by no one, for ... firstly, no definitions of supply and demand have ever been given which do not require more or less of correction or amplification; and ... secondly, no definitions of them can be given, consistently with which it is possible for them to determine price.²

Moreover, Thornton was quite undaunted by these, his "conclusions inconclusive." "Vague, loose, they must be confessed to be; ascertaining nothing, prescribing nothing, leaving almost everything to be settled by individual judgment or caprice; yet perhaps not on that account the less valuable." For, as he put it, "if little can be learnt from them, much may be unlearned."³ Thornton's case was against those who were "searching after the unsearchable, seeking for some invariable rule for inevitable variations, straining after precision where to be precise is necessarily to be wrong." There were no "inexorable," "immutable," or "eternal laws" by which market price was "governed," and Thornton was in no way discouraged by the thought that "no such despotic laws do or can exist."⁴

¹ Thornton, "A New Theory," op. cit., p. 433. The key portions of his argument are made on pp. 429-34.

² Thornton, On Labour, p. 43.

³ Thornton, "A New Theory," p. 434.

⁴ ibid, p. 434.

To support this unprecedented outlook, Thornton examined in graphic detail various specific examples of market bargaining, indicating the innumerable possibilities and uncertainties of the process, comparing alternative methods of conducting sales (such as the "Dutch" and "English" forms of auction¹), and emphasizing the vagaries of what were called "supply" and "demand." Much of this analysis will now seem unnecessarily obscure, but on the whole Thornton succeeded in making his point and his work had an enormous impact on economic thinking over the next several years.

Now, in the pale of history, Thornton's name has almost been forgotten. At best, he is remembered for having elicited Mill's partial renunciation of the wages-fund doctrine, and for this his word carried great weight at the time. His treatise, On Labour (1869), was widely cited well into the 1870s and his study of labour institutions found an almost immediate response in Germany.² Undoubtedly, the reason why Thornton was eventually forgotten is that he left no positive or constructive achievement behind him as part of a growing body of economic theory. His influence was to be a beneficially negative one. By incisively questioning what had become, by default, an almost complacently held view about the workings of market exchange, Thornton's incisive analysis represented a sharp spur to those who were more constructively minded and who were determined to retain and improve upon classical theory.

Ironically, Thornton's challenge hastened the re-appearance of the very "scientific" outlook he had so forcefully derided. The whole thrust of his work was to show that competition was not a law-like principle giving rise to uniformities in behaviour but that it was by its very nature diversifying. "Price he wrote, "cannot possibly be subjected to law" because it was an effect of that "ever-changing chameleon, human character."³ The new generation of neoclassicists

¹Thornton, On Labour, pp. 47 et seq.

²Namely, in Lujo Brentano's Arbeitergilden der Gegenwart, Leipzig, 1871. See also Brentano's review of Thornton in "On the History and Development of Gilds," Toulmin Smith's English Gilds, London, 1870.

³Thornton, "A New Theory," p. 434.

were to see in Thornton's work a direct assault upon the very essence of the scientific enterprise, the search for regularities; and so, eventually, they were forced into the position of construing the competitive postulate not as a general, comprehensive, all-encompassing description of reality, but as a very special case, an hypothesis which captured all the scientifically important characteristics of competition, a "perfect" competition with equilibrating tendencies.

But this realization was slow in coming, and we must not under-estimate the immense, if relatively short-lived, influence that Thornton's skeptical outlook exerted over economists at that time. Hodgson's Lectures in Economic Science (1870), Macdonnell's Survey of Political Economy (1871), Marriott's Grammar of Political Economy (1874) and Musgrave's Studies in Political Economy (1875) all refer to Thornton's book or else discuss at length the ambiguities and uncertainties in the notions of supply, demand and competition.¹ J.E. Cairnes's book, Some Leading Principles of Political Economy (1874), treated at great length of the meaning of supply and demand, and Cairnes was concerned throughout to reconcile the views of Thornton with the Principles of Mill.² As late as 1877, Shadwell's System of Political Economy still refers to Thornton's critique as that "rude shock" given to economic science.³

These writers, in the main, were surveying the groundwork of political economy in the older classical style. It would be both false and unfair to say that they lacked the independence of mind to push beyond the confines of the older classics, for their writings have been, unfortunately, unjustly ignored. However,

¹W.B. Hodgson and others, Symposium on Competition, from Lectures on Economic Science, ed. Hodgson, London, 1870, pp. 1-28; John Macdonnell, A Survey of Political Economy, Edinburgh, 1871, esp. pp. 211-12; Maj.-Gen. W.F. Marriott, A Grammar of Political Economy, London, 1874, Ch. XXI, pp. 245-58 (an untroubled summary of prevailing theory); A. Musgrave, Studies in Political Economy, London, 1875. I should perhaps mention here that another prominent writer from the 1850s to the 1880s, H.D. Macleod, had rather little to say on the subject of competition.

²J.E. Cairnes, Some Leading Principles of Political Economy, London, 1874, esp. Parts I and II. Cairnes is discussed below in section 3.

³J.L. Shadwell, A System of Political Economy, pp. iii and 131.

subsequent trends were to throw the limelight upon a new generation of theorists bent on "picking up the fragments of a shattered science," as Jevons put it,¹ by bringing to bear the methods of mathematics upon the older body of theory.

One such advocate, and an important transitional figure in this process, was the electrical engineer, Fleeming Jenkin, whose paper, "Trades-Unions: How Far Legitimate,"² was a direct rebuttal of Thornton's views of labour combinations and of the relationship of competition to supply and demand. Two years later, Jenkin published a second paper, "The Graphic Representation of the Laws of Supply and Demand" (1870), in which he elaborated upon the former, sketching the familiar "curves" of supply and demand on their price-quantity co-ordinates.³

Jenkin entered into a detailed discussion of several of the semantically obscure distinctions concerning supply, demand and competition which Thornton had tried to super-impose upon the subject. It must be said that Jenkin's theoretical reasoning was not on a high level, and that his many assertions (often weakly supported) lacked conviction, but a sympathetic interpretation of his case would stress the distinction he attempted to draw between the role of competition in actually "ascertaining" or bringing about an equilibrium level of price, and the role of supply and demand schedules in defining (he used the verb "to determine") what that level of price must be.⁴

As to his repeated assertions that competition would bring about this

¹W.S. Jevons, The Theory of Political Economy (1871), 2nd ed., London, 1879, preface, p. lvi.

²This first appeared in The North British Review, March 1868, then in Jenkin's Papers, Literary, Scientific (etc.), ed. S. Colvin and J.A. Ewing, in 2 vols., London, 1887, from which it was reprinted in The Graphic Representation of the Laws of Supply and Demand and Other Essays on Political Economy (by Jenkin), London: L.S.E., 1931, pp. 3-75.

³This appeared in Recess Studies, ed. Sir Alexander Grant, Edinburgh, 1870. I am citing from the reprint by L.S.E., details for which see the previous note.

⁴This is perhaps too free an interpretation of Jenkin's text; but, otherwise, it is difficult to understand what he was intending by his distinction, so carefully drawn, between "ascertaining" and "determining."

uniquely defined equilibrium price, no matter what type of market or form of auction was involved - referring here to Thornton's text - Jenkin was not very lucid or convincing in his all too brief and casual demonstration. Indeed, he offered rather few clues as to how his demand and supply curves were to be derived. Jenkin granted to Thornton that "men are too much in the habit of speaking of laws of political economy, without attaching to the word law the same rigid meaning which it bears in physical science," but when all is said and done Jenkin could do little more than re-affirm his faith in the scientific quest of economic "laws" which (he wrote) "admit of being stated as accurately, and defined in the same manner, as any mathematical laws affecting quantities of any description."¹

However, Jenkin's papers were suggestive and they did prove to be influential. As early as 1862, W. Stanley Jevons had delivered his "Notice of a General Mathematical Theory of Political Economy" to the British Association. It was extremely slight, in published form,² and of course preceded the debate over Thornton's critique. The publication of Jenkin's papers hastened Jevons's return to the study of political economy,³ and in the following year (1871) Jevons self-confidently announced the arrival of the new mathematical approach to the problems of economic theory with his Theory of Political Economy.

Whereas Jenkin's analysis of supply and demand was only suggestive of things to come, Jevons's new work takes us firmly into the realm of neoclassical thought.

¹Jenkin, "Graphic Representation," op. cit., p. 76.

²"Notice of a General Mathematical Theory of Political Economy," Journal of the Royal Statistical Society, Vol. XXIX, 1866, pp. 282-87. Jevons referred (in correspondence) to his new theory as early as 1860. This was a period when a great variety of economists were beginning to turn to mathematics, but the real fruits of their labours did not become apparent in print until the 1870s.

³In fact, Jevons was in correspondence with Jenkin as early as 1868. See R.D.C. Black, "W.S. Jevons and the Economists of his Time," Manchester School, Vol. XXX, Sept. 1962, pp. 206-7.

3. W. Stanley Jevons and the Onset of Neoclassicism

Ostensibly, Jevons's Theory of Political Economy was not called forth by Thornton's skeptical assault upon the scientific enterprise, but to replace the classical value theory of Ricardo with his own theory of utility, as well as to advance the new cause of the Mathematical Method. As for Thornton's critique, Jevons was quite prepared from the outset to align himself with John Stuart Mill in accepting the "unquestionable truth of the laws of supply and demand."¹

However, having enunciated his new utilitarian calculus of pleasure and pain and the theory of utility which flowed from that, Jevons eventually felt obliged to come to grips with Thornton's critique, and this he did in his fourth chapter on the "Theory of Exchange," wherein we find most that is relevant in Jevons's work to the subject of competition. At first, Jevons insisted that Thornton's arguments were largely "beside the question," because he had failed to distinguish properly between the theory of markets and prices and the various applications of that theory to the real world.²

Agreeing with Thornton that the laws of supply and demand had been hitherto "inadequately explained" by previous economists, Jevons confidently believed that he had succeeded where others had failed. But the further he proceeded into his exposition of these laws, the greater the confusion he created, both in his own mind and in the mind of the reader. This was probably due to the fact that Jevons's primary interest and motivating source of inspiration had been the study of the "mechanics of self-interest," as he termed it in the 2nd edition of his Theory,³ that is to say, with the logic of rational choice facing the

¹Jevons, The Theory of Political Economy, 1st ed., London, 1871, p. vi. In the text and footnotes to follow, I shall cite page numbers from the 1st edition, unless otherwise indicated. The 2nd edition of 1879 contained many alterations of phrasing and much additional material, but none of this bears very directly upon the issues discussed here. The 2nd edition Preface in particular was important in its even more dogmatic trumpeting of the cause of Mathematical Economics.

²ibid., pp. 105-07 (of 1st ed.).

³ibid., 2nd ed., pp. xvii and 23. In the 1st edition (p. 25), Jevons's phrase had been "the mechanics of human interest," a less clear manner of expressing his precise intentions.

individual whose constraints, arising from market competition, were treated as given from the outset. As a theorist, Jevons's skill was not in demonstrating how those market constraints arose in the first place, from the interaction of individuals seeking their separate ends in competition with one another.

From the point of view of competitive thought, then, Jevons's work is both strange and instructive. We find most, if not all, of the key elements of the later theory of perfect competition set out in his text, but in a rather confusing fashion, and it was to be F.Y. Edgeworth's task in 1881 to straighten out the mess Jevons had created. Yet, that mess does provide us with a wealth of insight into the neoclassical way of thinking.

In his most original and satisfactory chapters (chapters II and III), Jevons had employed the techniques of geometry and the differential calculus to map out the logic of choice in terms of various sets of possibilities of exchange facing each buyer or seller, and given their preferences, deriving the conditions for maximizing their utilities. The more carefully we look into his analysis, the better we can see that what Jevons was really interested in was not the behaviour of traders in the market but in the results of their behaviour in an equilibrium situation, that is to say, the quantifiable aspects of equilibrium in a perfect market.

To a certain extent, Jevons was quite self-conscious and candid about this, even though he did not perceive all the ramifications. In his fourth chapter, on the "Theory of Exchange," he argued that we must distinguish between the "statics" and the "dynamics" of the subject. A "complete solution of the problem in all its natural complexity," he said, would have to be treated as a problem of dynamics because "the real condition of industry is one of perpetual motion and change," (p. 93). However, he realized that his techniques were too imperfect to allow this, and hence he decided to treat the "action of exchange" only as a "purely statical problem," (pp. 93-94).

But this was a rather vague way of stating his objective. What did he

mean? In what followed, Jevons was not content merely to explore the logical properties of an equilibrium situation - a static position or state of affairs - but was intent upon associating a perfect and unique equilibrium result, expressed by his equations of exchange, with some uniquely specifiable prerequisites to be understood by what he defined as the "perfect market." In other words, he wanted to prove that one empirically distinct state of affairs (the perfect market) logically entailed another empirically distinct state of affairs (equilibrium).

Where Jevons encountered his most exasperating difficulties was in trying to reconcile the desire for this uniqueness of association with the scientific quest for generality, in trying to reduce apparent diversity to a specifiable regularity. Thus, in meeting Thornton's contention, he asserted that "we shall never have a science of economics unless we learn to discern the operation of law even among the most perplexing complications," (p. 109). Granting that in reality, "no market ever long fulfils the theoretical conditions of equilibrium," he nevertheless wanted a single set of formulae for exchange to show that "exactly the same principles hold true, however numerous and complicated may be the conditions," (p. 113).

Having derived a simplified formulation of exchange for the perfect market, Jevons thereupon proceeded to apply this reasoning to what he called "Complex Cases," with varying numbers of buyers and sellers, soon encountering the prospect of the "Failure of the Equations of Exchange" (pp. 118-24). Either the equations yielded "impossible results" (eg. negative values) or else no "determinate" results at all (i.e. no solutions for variables). Jevons felt that in some cases, this "failure" of the equations could be interpreted as meaning that under the assumed conditions no exchange would take place because no benefit would arise from any such exchange (p. 118), but eventually Jevons was forced to concede to Thornton (whom he cites once more) that there were cases where exchange "must be settled upon other than strictly economical grounds," (p. 124). Jevons did

not make it very clear what he meant by "strictly economical."¹

Thus it was that Jevons uncovered a fundamental problem that would plague neoclassical theorists for years to come, the problem of indeterminacy. In deriving his initial solution to the equations of exchange, Jevons had postulated a market constraint which we would now call the infinitely elastic demand curve facing each independent seller in a market with large numbers of both buyers and sellers (see his p. 110). In applying his equations to other cases, Jevons seems not to have realized that this initial constraint of a perfect market no longer held for imperfect markets, or else he seems not to have realized that in removing this constraint of infinite elasticity, great problems were met in trying to specify alternative types of market constraints yielding determinate results.² In either case, his desire for uniqueness seemed to be quite inconsistent with his desire for generality.

The awkwardness of Jevons's approach to this subject of market constraint is epitomized in the definition of one of his key phrases, his so-called "trading body." Defined simply as "any body of buyers or sellers ... whose aggregate influence in a market we have to consider," (p. 88), it is delightfully ambiguous as to whether such a body comprises a single competitive unit or else an entire set of competing units which together constitute all the buyers or sellers of a complete market! This ambiguity is not clarified in his ensuing analysis which only further complicates matters, along with his assertion that "the principles of exchange are the same in nature, however wide or narrow may be the market," (p. 89).

This elementary flaw is rather ironic, because Jevons went a long way

¹In the paragraph cited, Jevons writes that such things as "the disposition and force of character of the parties, their comparative persistency, their adroitness and experience in business," and so on, are relevant influences but are "more or less extraneous to a theory of economics," (p. 124 of 1st ed.). Even if Jevons had wanted to argue that for theoretical purposes, only essential or very general factors should be included, it is not clear why such things should be treated as not "strictly economical" since he admits that they do influence the result and are "necessary considerations in this problem."

²This is a rather difficult problem of interpretation, as a perusal of Jevons's text (1st ed., pp. 113-115) will quickly show. Jevons seems to have fused the condition of price uniformity with infinite elasticity in deriving his results for complex cases.

towards identifying most of the familiar features that were to become ^{the} hallmark of the theory of perfect competition. In a very few pages (pp. 84-92), we can find a fairly explicit statement of such things as: the large-numbers condition and infinite elasticity, product homogeneity and price uniformity, free entry and perfect knowledge, and others.

In one sense, it did not matter that Jevons chose to cast up his definitions around a perfect market, rather than perfect competition, because in the long run these two concepts became so inter-mingled with one another, as did the variously associated assumptions of the model of perfect competition, that they became almost indistinct aspects of the same constellation of ideas.¹ However, Jevons's choice of emphasis upon the situational concept of a market rather than the behavioural concept of competition does tend to confirm that he was primarily anxious to explore quantifiable properties of an equilibrium result, instead of the logic of behavioural patterns observable through time.

Furthermore, it is worth noting that the word competition itself is used only once throughout the crucial pages of his exposition, and when on that one occasion he wrote, as part of his definition of the "perfect market," that there must be "perfectly free competition," (p. 86) the phrase probably was intended to emphasize the conditions of free entry into the market and free movement or mobility of resources, rather than anything specifically competitive in nature. And, in comparison with the other conditions, these were relatively minor in importance.

To assess Jevons's more prominent assumptions properly, we have to bear in mind that he was engaged in a methodological crusade, pushing theoretical analysis beyond the "literary" confines of classicism into the realm of explicit

¹G.J. Stigler, in "Perfect Competition, Historically Contemplated," Journal of Political Economy, Vol. LXV, Feb. 1957, p. 6 attributes to Jevons the "merging of the concepts of competition and the market," which Stigler feels was "unfortunate." Stigler's observation is pointed enough, though I'm not sure I follow all of the inferences he draws from this.

mathematical logic. Like so many other of the pioneers of the new Mathematical Method, Jevons fell into the error of believing that mathematics was a language and that the task of the theoretician was to "translate" the logic of behaviour into the "language" of mathematics.¹ As well, the use of the differential calculus led Jevons into emphasizing special conditions favourable to a mathematical treatment which had hitherto been ignored. For example, the "infinite subdivision" of the commodities exchanged was greatly emphasized, and at times it almost seemed that Jevons considered the divisibility of the product (in physical terms) more vital to the theoretical outcome of exchange than, say, the division or distribution of market shares amongst the various independent traders.²

However, when outlining the crucial condition of infinite elasticity of demand for his perfect market, Jevons did get his priorities right:-

We may, firstly, express the conditions of a great market where vast quantities of some stock are available, so that any one small trader will not appreciably affect the ratio of exchange. This ratio is, then, approximately a fixed number, and each trader exchanges at the ratio just so much as suits him. (1st ed., p. 110).

But already Jevons was falling into the habit of loose verbal reasoning about behavioural inferences, buoyed up by the promise of logical rigour in the mathematical content of his reasoning, fusing - and hence confusing - a set of behavioural and situational premises about large numbers of independent buyers and sellers and their individual "powerlessness," with equilibrium conclusions about a stable, uniform and unique level of prices that each trader was to accept passively as being already "given" from the outset. Why and how could equilibrium be "given" from the outset?

The manner in which Jevons succumbed to the temptations and attractions of pure mathematics can be shown very nicely in the two key features

¹This error concerning the nature of mathematics, logic, and language will be a recurrent theme in the pages to follow. In Chapter VII, section 4, I try to indicate a few general conclusions to be drawn from this immense and intricate issue concerning the proper role of mathematics in economic reasoning.

²Theory, 1st ed., pp. 107 and 109. Jevons treats the notion of infinite divisibility more comprehensively in Chapter III.

of a perfect market to which he gave special attention. Like Cournot before him,¹ Jevons defined the broad notion of a market in terms of a "community of knowledge" binding the separate traders of a single commodity together, (p. 85). Jevons correctly stressed the importance of knowledge in guiding market behaviour, noting that every trader "strives to gain the best knowledge of the conditions of supply and demand" and to have "the widest range of information" he can obtain (p. 86). But then he defines a perfect market in terms of "perfect knowledge," without indicating what perfect knowledge could possibly mean. He merely states that "the theoretical conception of a perfect market is more or less completely carried out in practice," (p. 86).

Thereafter, he introduces the concept of a "perfectly uniform or homogeneous" commodity and the concept of "indifference" to which it gives rise: traders will treat any equal portions of such a commodity indifferently (pp. 91-2). This is a very useful concept to have, but with it and the perfect-knowledge condition, Jevons goes on to draw a celebrated non-sequitor (as did Cournot) about price uniformity. "In the same open market, at any one moment, there cannot be two prices for the same kind of article," (p. 92) and again "there cannot, in the same market, at the same moment, be two different prices for the same uniform commodity," (p. 94). Jevons termed this the Law of Indifference, and described it as a self-evident principle (p. 94) which it is not; for it contains an undemonstrated inference about an equilibrating tendency linking market premises to equilibrium conclusions. Even Jevons's grammar points to this inferential character. I shall cite two relevant passages, underlining the key terms:-

... A market, then, is theoretically perfect only when all traders have perfect knowledge of the conditions of supply and demand, and the consequent ratio of exchange. (p. 87).

¹Cournot's work is discussed in section 4 to follow. It seems that Jevons was unaware of Cournot's Recherches by 1871. He states in the Preface to the 2nd ed. of his Theory that he acquired a copy of Cournot's book in 1872.

When a commodity is perfectly uniform or homogeneous in quality, any portion may be indifferently used in place of an equal portion: hence, in the same market, and at the same moment, all portions must be exchanged at the same ratio. (p. 91).

In his time, Jevons's undemonstrated contention seemed intuitively plausible and analytically convenient, because it allowed theorists to work with a single variable for price, exploring the properties of an equilibrium position, if not the dynamic process of market bargaining alleged to lead to that unique result.

Thus, Jevons's law of indifference was treated not as a scientific theorem to be demonstrated but as a self-evident axiom merely to be postulated or assumed as valid from the start, even if theorists really had no idea as to what perfect knowledge, perfect mobility, and so, could possibly mean. Jevons had already granted that the reality of markets was one of "perpetual motion and change," (p. 93) and so, in defending his law of indifference, he also granted that price "may vary from moment to moment, and must be conceived as in a state of continual change," (p. 92) but in doing so he also insisted that it "must be uniform at any one moment." It was not at all clear why this should be the case, if traders were seeking maximum profits and hence alternative prices, in their bargaining behaviour, unless equilibrium was also already established from one moment to the next: quod est non demonstrandum. Jevons's law of indifference was a helpful simplification at the time. Unfortunately, it strengthened the belief in the capacity of mathematics to prove theorems connecting events distinct in space and/or time.

All in all, then, Jevons's Theory of Political Economy paved the way for the so-called "abstract" approach to economic theory in its mathematical form, and his work illustrates how the idea of perfect competition was slowly becoming a heuristic fiction, justified on purely logical grounds, rather than as a broader empirical generalization. Jevons's Theory, however, left the precise status of the competitive postulate in a rather confused state. Following 1871, he did

publish a number of other works on economics.¹ As interesting and revealing as these are in many ways, I have not been able to find any firm indications in them as to how Jevons may have revised or clarified his outlook on the status of competition such as would bear very directly upon this narrative. Sadly, Jevons died prematurely in 1882, having made only the briefest of comments upon Edgeworth's Mathematical Psychics (1881).²

A great deal of other economic literature stands between Jevons's Theory and Edgeworth's clarifications upon it. I have referred briefly to some of the titles and authors from 1870s in the preceding pages. To conclude this section, I shall just mention one or two highlights from this literature of the 1870s in order to illustrate that much serious discussion was made of the status of perfect competition and that Jevons's abstract and mathematical approach was by no means assimilated and copied without some careful and valid resistance.

In his Leading Principles of 1874, J.E. Cairnes showed himself to be most anxious to preserve the tenets of classical theory, particularly in regard to value theory, against the assault made upon them by Thornton. Competition was

¹Jevons's later writings of a theoretical nature are rather disappointing on the subject of competition: his short primer, Political Economy, London, 1878, and the posthumously edited and published text, The Principles of Economics, ed. H. Higgs, London, 1905. However, his last work, The State in Relation to Labour, London, 1882, is certainly well worth perusing. However strong may have been his faith in the powers of abstract reasoning, Jevons clearly did not see any simple application of pure theory to the realm of economic policy.

²In The State in Relation to Labour, p. 158, Jevons refers in passing to Edgeworth's "remarkable work on Mathematical Psychics," in connection with the indeterminateness of certain kinds of wage negotiations.

of course singled out as a vital component of classical theory,¹ but Cairnes did enter one important qualification. In order to be "effective" in its operation, market competition must involve resources "in disposable form, ready to be turned toward the more lucrative pursuits," in other words, what we would call resource mobility.² With labour markets in mind, Cairnes called attention to the widespread presence of "non-competing groups" whose existence substantially reduced the effective functioning of market competition according to its theoretical norm.³

Throughout the remainder of the 1870s, this aspect of imperfection of markets became something of a debating point, more so than, say, the notion of perfect knowledge, as the chief weakness in abstract theory. A book by the American economist, Gen. F.A. Walker's The Wages Question (1876), is worth citing in this respect, as well as for the response it drew from Henry Sidgwick a few years later. Now, Walker went so far as to describe Cairnes's theory of non-competing groups as "the most important contribution ever offered in modification of the theory of competition."⁴ Economists, Walker felt, had not given sufficient attention to the "extensive failure" of competition in practice, and clearly what he had in mind were the imperfections in resource mobility. In sketching the broad outlines of prevailing theory, he refers to such things as "perfect mobility" and "perfect freedom of movement," and at the same time was one of the first writers to make frequent use of the phrase "perfect competition."⁵

Walker was not concerned about the validity of abstract theory. He granted: "If competition be perfect, no question can be made of its result in an equable division of all burdens and diffusion of all benefits throughout the

¹Some Leading Principles, 1874, pp. 59-60.

²ibid, p. 63.

³ibid, p. 68.

⁴Walker, The Wages Question, London, 1876, p. 240. I should add, of course, that Walker was highly critical of the manner in which Cairnes applied his theory to matters of practical import, as the general gist of his (Walker's) argument to follow will show.

⁵ibid, pp. 159-65 passim and 171-74. Along with "perfect," Walker uses a whole barrage of adjectives, including "absolute," "unhindered," "universal," "general," "complete," and even "all-pervading and unremitting."

industrial society," but he quickly added: "Of course no one ever supposed that competition was perfect."¹ This alone was a significant recognition, but Walker was more worried about the application of the theory, objecting to the fact that economists had felt themselves to be "at liberty to treat questions ... precisely as if competition were perfect, regarding the failures as so far exceptional as not to impair the substantial validity of practical conclusions based on the assumption of universal competition." And, the crux of his argument was this. When inequalities and imperfections in the market exist, "the tendency of purely economical forces is continually to aggravate the disadvantages from which any person or class may suffer."² Hence, "moral forces" would be necessary to "restore the equilibrium." This was a direct challenge not upon the abstract theory, but only upon its application, a challenge which Walker renewed in his text-book of 1883.³

With that skeptical attitude towards competition in practice, it is interesting to compare Henry Sidgwick's response, as it appears in his article, "The Wages-Fund Theory," published in 1879. As to Walker's suggestion that economists were drawing invalid inferences when applying theory to reality, Sidgwick went even further by questioning the certainty with which theorists drew their abstract inferences, to say nothing of applications. Casting doubt on Walker's own theoretical inferences, Sidgwick observes that he (i.e. Walker) "seems, indeed, to hold that on the assumption of perfect competition and perfect mobility of labour, the determination of average wages is quite easy and straightforward."⁴

Alluding to Walker's description of the equalizing tendencies of

¹ibid, pp. 158 and 160.

²ibid, p. 166.

³His Political Economy, New York, 1883, goes on at great length about the "failures" of competition: see Part II in particular. But Walker continued to stress its essential role in theory and gives it some prominence in his new theory of entrepreneurial profits (eg. p. 248).

⁴Sidgwick, "The Wages-Fund Theory," The Fortnightly Review, n.s., Vol. CLIII, Sept. 1879, p. 410.

competition, Sidgwick wrote, with a slight hint of sarcasm:

... Phrases like these frequently occur in economic discussion and they certainly seem to give a delightfully clear and simple account of the matter. I think, however, that the intellectual satisfaction that they afford depends upon an essentially vague notion of the effects of competition.¹

The controversy over the wages-fund theory was still raging on in 1879, and with Cairnes' reasoning as to the limits of competitive substitution imposed by the widespread existence of non-competing groups, Sidgwick agreed with Walker that there was "no theoretical determination whatever of the average proportions in which produce is divided between labour and capital," - in other words no theory of primary distribution. In a remarkably modern way, Sidgwick wrote: "the very node of this problem lies in determining the entrepreneur's normal remuneration."²

But, where Sidgwick's article now seems most forward-looking is in its question: "What can abstract economic theory do for us?" Quite bluntly, he asserted that it could provide us with "no doctrine so simple and definite as that which we have been considering;" what it could do was to establish various "limits" within which economic variables could range, as well as to explore economic forces of an "equilibrating nature," but Sidgwick ended his review on a rather skeptical note. The definiteness of the conclusions of ordinary economic reasoning had been "gravely overrated."³

I will end this section with only the briefest mention of one writer who tried to re-establish a sense of continuity between classical and neoclassical streams of thought, while at the same time pushing forward in the direction of mathematical technique. Alfred Marshall's unpublished but widely circulated papers on "Pure Theory" (1879), in addition to his published textbook, The Economics of Industry (1879), belong properly speaking to the first generation of neoclassical

¹ ibid., p. 410, my emphasis added.

² ibid., p. 411, my emphasis added. For the problem of "normality," see p.301.

³ ibid., pp. 412-13.

writings and are important achievements. For reasons of expositional convenience, I shall defer to Chapter VI the discussion of these works.

4. Cournot and the Mathematical Tradition in France

Up to this stage in the narrative, I have attempted to pursue as closely as possible a chronological sequence, indicating how in the evolution of competitive doctrine one thing led to another. Of course, every method of presenting history has its inherent limitations and drawbacks. In the final analysis, some balance must be struck between strict chronological accuracy, on the one hand, and clarity in thematic treatment on the other.

In the history of economic thought, no figure quite confounds the chronological approach quite as much as does Augustin Cournot. Indeed, Cournot was a man curiously out of step with his own times, though there is a certain logic lying behind the timing of his publications. A mathematician by training, a public administrator by profession, Cournot made a momentary and unheralded sojourn into the realm of economic thought with his Recherches sur les Principes Mathématiques de la Théorie des Richesses (1838).¹ Just at a time when the fashion for abstract economics from the early 1830s was giving way in France to political issues, the Recherches was too advanced in its mathematical technique to arouse any interest.²

By the 1860s, that interest was finally being aroused,³ and this

¹A. Cournot, Recherches sur les Principes Mathématiques de la Théorie des Richesses, Paris, 1838. I shall also refer to the English edition, Researches into the Mathematical Principles of the Theory of Wealth, tr. Nathaniel T. Bacon, New York: MacMillan, 1927 (1897).

²According to William Jaffé, the Recherches was first reviewed by Walras in 1863 (as part of Walras's review of Cournot's Principes of 1863), a useful summary of which is given in the Correspondence of Léon Walras and Related Papers, ed. W. Jaffé, 3 vols., Amsterdam: North Holland Publishing, 1965, Vol. I, pp. 128-9. For Walras's attitude to Cournot's work, see section 5 to follow.

³In addition to the works of Courcelle-Seneuil and Cherbuliez from the late 1850s and early 1860s (cited above), there were faint but very diverse signs of interest being shown in mathematical techniques by the early 1860s: eg. in France, J. du Mesnil-Marigny, Economie Politique devenue Science Exacte (1859) and Catéchisme de l'Economie Politique (1863); in Germany, H. von Mangoldt, Grundriss der Volkswirtschaftslehre (1863; and of course in England, Jevons's "Notice" which was read in 1862 (see note 2, page 185 above). But such efforts were generally quite simplistic by comparison with Cournot's Recherches. Marshall acquired a copy of Cournot's 1838 text between 1867 and 1870 (see his Memorials, p.19) and Jevons did so around 1872 (see note 1, page 192, above).

undoubtedly brought Cournot back to the subject of economics. Yet, again, he misjudged the temper of his times by publishing a completely "non-mathematical" treatise, Principes de la Théorie des Richesses (1863), in which he tried to summarize the results of his previous work in a literary form which would be more accessible to his contemporaries than the Recherches had proven to be. Ironically, the chief importance of the Principes would be in drawing to the attention of the new advocates of mathematical technique Cournot's earlier work!

And, finally, following the appearance of Walras's Eléments (1874-77), Cournot published a brief re-arrangement of the Principes, entitled Revue Sommaire des Doctrines Economiques (1877), shortly before his death, in which he once more abstained from the use of mathematical techniques and symbols. Cournot's Recherches is treated here, rather than in Chapter IV, because it has so little in common with the classical literature of its own day, and because it is best studied as a prelude to Walras.

From the point of view of competitive theory, Cournot's Recherches is significant, not simply in the way it brings mathematical technique to bear upon the study of market equilibrium, but more so in the way it tries to reconstrue rational behaviour to fit that very mathematical technique. In the past, commentators have taken special note of the fact that Cournot chose to begin his analysis with monopoly and then extend it to cover the cases of duopoly and "unlimited competition" or "la concurrence indéfinie."¹ Now, this order of proceeding was by no means trivial. Cournot's use of the differential calculus made it convenient to do so, but what is more unusual and even startling is the degree to which Cournot subsequently put the weight of his analysis in favour of monopoly rather than competition.

In his fourth chapter, Cournot derived his downward-sloping demand curve and took a decisive step forward by introducing the functional relationship

¹Cournot, Recherches, p. 101 and Researches, p. 90. Walras in particular drew attention to Cournot's order of proceeding. See Walras's Elements of Pure Economics, ed. W. Jaffé, London: Geo. Allen & Unwin, 1954, p. 440.

of price to quantity, stressing the need for continuity in the functional relationship so that revenue-maximizing conditions could be specified with the differential calculus. It is not clear from his text whether Cournot interpreted his "law of demand" ("loi du débit") merely as a set of possibilities of choice, or as a theoretical and empirically descriptive summary of observable behaviour. Whichever he thought it was, he nevertheless intended to make use of the curve in order to show how equilibrium prices were reached through the process of market bargaining.

Thus, like Canard and Isnard before him and Jevons and Walras after him, Cournot believed that market behaviour, motivated by rational decision-making, could be captured in summary form by, or reduced to, or "translated" into, the pure logic of numbers. His derivation of equilibrium price for the case of monopoly, first a revenue-maximizing and then a profit-maximizing level of price (with cost functions incorporated into the picture), left many questions unanswered as to how the single seller went about discovering what the unique profit-maximizing level of price was, let alone what the "curve" or "functional relationship" was supposed to mean in behavioural terms.¹

Cournot states that he began with the case of monopoly (i.e. a single seller with numerous buyers) because it was the simplest hypothesis, and indeed for the purposes of single-market exchange this seems a reasonable proposition, since the constraints lend themselves to ready definition.² It is when he proceeds to the case of duopoly (i.e. two sellers with numerous buyers) that we can see best how Cournot tried to construe rational behaviour into the form of numerically converging sequences. To accomplish this, Cournot was obliged to throw plausibility to the winds when characterizing human rationality. Everyone has

¹Chapter V of Cournot's Recherches is the crucial material on this point. Even if we could decide exactly what his cost and revenue "functions" were supposed to mean, in terms of sets of alternative possibilities of production and exchange, we could still only then say what the equilibrium or "ideal" result would be (given well-ordered preference patterns), but not how those results would be arrived at through market bargaining behaviour.

²Recherches, p. 60 (or Researches, p. 55), identifies monopoly as "l'hypothèse la plus simple."

a vague notion, an "idée vague," of the effects of competition, Cournot wrote, but theorists had to be more precise. Now, for Cournot precision meant mathematical simplicity, not conceptual clarity. This is immediately apparent as he begins to develop his model of competition between two sellers, stipulating as an essential condition that they must act independently of one another ("chacun de son côté") in their pursuit of maximum revenue.¹

To indicate what he means by this condition of "independence," Cournot states that ~~the two~~ the two sellers can have "no direct influence" ("ne peut pas influencer directement") over what each other decides to offer as a price to his potential buyers. Then, for no apparent reason, Cournot describes their behaviour as a sequence of events whereby the two sellers alternate in offering their goods at a price which will maximize their own revenue, given the previous price offer of the other seller. Using his revenue-maximizing logic from the monopoly case, Cournot proceeds to argue that this sequence of dual price levels converges to a discrete and uniform limit, the equilibrium price level, as the series of reactions ("suite de réactions") is carried on ad infinitum.²

With breath-taking brevity, Cournot set forth a dynamic theory of market equilibration which was to command serious critical attention well into the 20th century.³ Judged by the standards of his own time, Cournot displayed considerable imagination, skill and ingenuity in reaching his results, but those results were purchased at a high cost. Cournot's duopolists behave in a most

¹Recherches, p. 88 (Researches, p. 79).

²Recherches, pp. 89-90 (Researches, pp. 79-81). E.H. Chamberlin provided a nice geometrical presentation of Cournot's duopoly model. See his The Theory of Monopolistic Competition, 8th ed., Cambridge, Mass.: Harvard University Press, 1962, p. 32 and Appendix A.

³For the last word on Cournot's model, see Julian L. Simon, Carlos M. Puig and John Aschoff, "A Duopoly Simulation and Richer Theory: An End to Cournot," Review of Economic Studies, Vol. XL, pp. 353-66, July 1973. After conducting a rather thoroughgoing series of computer-simulation "tests" on the duopoly model, they conclude their paper on a rather conclusive note: "Finally, the Cournot question should be considered dead, and analytic attempts to answer it or to expand it should be abandoned as a waste of time," p. 365.

irrational manner in pursuit of their maximums, rigidly applying a formula and vacillating between omniscience and ignorance in robot-like fashion. Cournot defended his case by arguing that men cannot be supposed to be free from error or lack of forethought ("exemptes d'erreurs et d'inconsidération")¹ rejecting the idea of perfect knowledge. But this hardly justified his stipulation that duopolists learn nothing from past errors, nor did he explain how at each moment they discovered what the relevant revenue-maximizing price was. How did the curves manifest themselves?

Cournot's derivation of equilibrium for the case of unlimited numbers of buyers and sellers was based presumably on the same principles as in the case of duopoly, though it is difficult to say exactly what Cournot had in mind, since he concentrated attention on the mathematical proof of the solution of his equations, without indicating how they were to be interpreted behaviourally. All that we are given to understand is that as "3, 4, ... n producteurs en concurrence" are brought into the theoretical picture (in some undisclosed sense), then the equations for duopoly will be replaced "successively" by another series, such that "la valeur de p (i.e. price) qui en résulte diminuerait indéfiniment par l'accroissement indéfini du nombre n."²

Beyond that, Cournot made virtually no attempt to describe the dynamics of market equilibrium adjustment with many sellers, though in the course of his exposition he did enumerate several of the conditions later to become associated with the model of perfect competition. Like Jevons, Cournot thought it important to define what a market meant, stressing the idea of common knowledge binding traders together ("unies par des rapports de libre commerce") though he did not imply by this a condition of perfect knowledge. Like Jevons, he put great stress on the need for divisibility of products and hence continuity of functions, so that the differential calculus might be used to determine maximizing conditions. And, like Jevons, Cournot attached to his definition of

¹Recherches, p. 93 (Researches, p. 83).

²Recherches, p. 94 (Researches, p. 84).

a market the implied but undemonstrated inference as to price uniformity ("en sorte que les prix s'y nivellement avec facilité et promptitude").¹ Finally, Cournot also hints at the idea of infinite elasticity of demand, alleged to result from large numbers, and which Cournot interprets as being a great simplifying condition:-

Les effets de la concurrence ont atteint leur limite, lorsque chacune des productions partielles D_k est insensible, non seulement par rapport à la production totale $D = F(p)$, mais aussi par rapport à la dérivée $F'(p)$,, sans qu'il en résultât de variation appréciable dans le prix de la denrée. Cette hypothèse est celle qui se réalise dans l'économie sociale pour une foule de productions, et pour les productions les plus importantes. Elle introduit dans les calculs une grande simplification.²

Where Cournot's analysis was superior to Jevons's was in his treatment of costs, for here he not only introduced a cost function into the theory of price, he even identified the alternative possibilities of increasing, constant and diminishing costs (as Senior had verbally intimated by 1836) and recognized the need for diminishing returns-to-scale if competitive equilibrium were to be possible.³ Even more startling, though, were the various conclusions he drew regarding the respective merits of competition and monopoly.

Suggestive of a much more modern analysis, Cournot compared the prospects of operating numerous different plants to produce the same product, but with varying degrees of efficiency for each plant. Cournot drew the conclusion that, other things being equal, costs would always be greater under competition than under a unified monopoly control over productive facilities, a remarkable

¹Recherches, p. 55n1 (Researches, p. 51n). For Cournot on divisibility, see his Chapter IV, section 22. Jevons thought it important enough to cite in full Cournot's definition of a market in the 2nd edition of his Theory (p. 92n).

²Recherches, p. 101 (or Researches, p. 90), his emphasis.

³For this stipulation, see Recherches, p. 102 (Researches, p. 91), and for Cournot's discussion of returns-to-scale pp. 65ff. (or pp. 59ff).

anticipation of the argument for industrial "rationalization."¹ Much less convincingly, but with equal suggestiveness of modern analysis, Cournot extended this argument into the complicated realm of theory on vertical integration for a sequence of related steps of production, what he called "Le Concours des producteurs," (Chapter IX). And, once again, his conclusion is one which is favourable towards centralising production, though his logic is exceedingly fuzzy and it is not at all clear that he recognized the role of economies in vertical integration.²

On the whole, the general drift of Cournot's Recherches was against the practicability of "unlimited competition," in spite of its theoretical peculiarities. But Cournot refrained from drawing any major policy conclusions, for as he stated in his preface, his Recherches was intended as a study in "la théorie" and not about the merits of "les systèmes" of political controversy. He did not wish to write a "polémique passionnée."³ This attitude was revised with the long delayed appearance of his Principes in 1863, wherein Cournot ranged rather discursively over a number of grand issues in political economy. In the chapter, "De la Détermination des Prix," he re-affirms the dual emphasis upon both monopoly and competition, following the same line of argument as in his Recherches, though providing a mere "verbal" summary.⁴

However, in subsequent chapters dealing with matters of policy,

¹Recherches, pp. 93-7 (Researches, pp. 83-7). Actually, Cournot's conclusion is stated as follows: "En conséquence, pour une même valeur de p (i.e. price), ou pour une même quantité totale produite, les frais seront toujours plus grands pour les producteurs concurrents qu'ils ne le seraient pour un monopoleur," p. 97.

²Recherches, p. 117 (Researches, p. 103). One of the problems of Cournot's analysis is that he treats of a sequence of monopolist producers in a vertically related series of exchanges - which must evidently involve isolated exchange.

³Recherches, pp. vi and xi (Researches, pp. 1 and 5).

⁴A. Cournot, Principes de la Théorie des Richesses, Paris, 1863. Notably, Cournot employs for the first time in this work the phrase, "une suite de tâtonnements et d'oscillations," in describing the path to equilibrium (p. 110). Walras doubtless picked up the word tâtonnement from his reading of Cournot.

Cournot's incidental references to competition confirm that he did not look upon it as an altogether socially beneficent principle. It is cited as a source of low wages, industrial instability, regional disparities, and imbalance in capital flows favouring Industry against Agriculture.¹ Bringing a certain naivety to political issues, Cournot rarely drew clear and far-reaching conclusions, and it is very difficult to summarize his meandering train of thought. But since his role as a theorist has become so much celebrated in the 20th century, it is worth noting the attitude he brought to the subject of competition, particularly since Walras was undoubtedly much influenced by Cournot's work.

With rural sympathies,² Cournot leaned in the direction of a more thoroughgoing pattern of government intervention in economic affairs. In the vast number of cases, he admitted that "laissez-faire" must still be the rule, but this did not prevent him from seeing reality as a set of opposing forces, an "antagonisme entre le principe d'autorité et le principe de liberté," which called for a constant compromise, a "perpétuel compromis entre l'idée de la justice pure et celle de l'intérêt social."³

Thus, Cournot's flair for abstract theory and mathematical analysis was accompanied by an increasing hesitation as to the status of competition in the practical sphere of things.

5. Léon Walras and General Equilibrium

Like most other theorists up to his time, Cournot had confined his study of market price to the case of single markets, or else to very simple two-market interrelationships. But at one point in his Recherches, Cournot noted

¹See in particular Principes, pp. 436-7 and in general Books IV and V.

²It is interesting that, like Sismondi, Cournot brought a sort of rural conservatism to his subject which, after the political events of the 1860s and 1870s, turned into an almost nationalistic approach to economic policy following the pattern set by Frederick List and Bismarck in Germany. See Cournot's last thoughts on this matter in his Revue Sommaire des Doctrines Economiques, Paris, 1877, pp. 222-28. In the preface to this last work, Cournot also complained that he had been branded (i.e. by Walras) as being too "Ricardian" for his stress on rent as an analytical device.

³Cournot, Principes, pp. 439, 446 and 462.

that in reality "the economic system is a whole of which all the parts are connected and react on each other," and that therefore a "complete and rigorous solution of the problems relative to some parts of the economic system" would require that the entire system be taken into account. However, Cournot believed this to be outside the powers of mathematics.¹

This was the challenge that Léon Walras was to undertake to meet, beginning sometime after 1863. Armed with his father's value theory,² with the mathematical techniques of Louis Poinsot's Eléments de Statique,³ and with Cournot's own formulation of the functional relationship between demand and price, Walras set out to construct a theory of general equilibrium, rendering precise what his predecessors - North, Boisguillebert, Le Mercier and Adam Smith - had for a long time only hinted at.

But Walras's "heroic" exploits were to begin only after 1863. His first major study of economics, L'Economie Politique et La Justice (1860), contains little suggestion of the mathematical style of the Eléments to follow in 1874. The treatise of 1860 is more in the nature of an "ideological" study of the grand themes of the mid-century. Walras's outlook was a curious blend of liberal and socialist attitudes,⁴ and his caustic criticisms were directed as much against Bastiat and Thiers for what he considered to be their faulty defense of private

¹See Cournot, Recherches, p. 146; translation from Researches, p. 127.

²Léon's father, Auguste Walras, has not been mentioned hitherto in this history for the simple reason that he had nothing of interest to say on the subject of competition. However, I should add that he was among the new generation of abstract theorists who sprang up in the 1830s, his most important work (among several) being De La Nature de la Richesse et de L'Origine de la Valeur (1831).

³Louis Poinsot's Eléments de Statique, 8th ed., Paris, 1842 was a textbook on classical mechanics. Its very suggestive terminology and its influence upon Walras are described by Jaffé in Correspondence, Vol. III, pp. 149-50. Whether or not Walras actually did read Poinsot's text in its entirety in two sittings as he alleged he had done in 1842 (from a letter of 23 mai 1901), it certainly did not help him very much in passing his mathematical entrance requirements to the Ecole Polytechnique in 1853!

⁴For not very clear reasons, Walras insisted on calling himself a "scientific socialist," though today his views would probably be likened more to those of a social democrat.

property as against Proudhon and Louis Blanc for their unreasoned attack upon the institutions of market exchange.

In a couple of important respects, though, Walras's L'Economie Politique et la Justice points firmly and consistently towards his more celebrated work. On the one hand, even if the mathematics is absent, Walras's strong rationalistic leanings are very much in evidence, with great emphasis being placed upon the need for cool but rigorous logic, on matters of "scientific" substance, rising above the emotion of politics.¹ And, allied with this philosophical standpoint is his faith in the principle of competition as the answer to most theoretical (if not all practical) problems of economics.

Whether we may like it or not, he wrote, the principle of competition is an unavoidable necessity, resting logically upon the unassailable fact that "la somme des choses utiles est limitée."² This entailed that there be some method of distributing wealth, and hence "le principe de la concurrence est absolue." Moreover, competition was on the whole beneficent, leading to stable equilibrium, preventing "les crises," determining market value and ensuring an "immense ordre" and an "uniformité régulière" in the world of economic endeavour.³ What guarantees this order and regularity? "L'harmonie tout à la fois fatale et providentielle des lois naturelles, et la certitude des principes et des déductions," - such was Walras's remarkable blend of faith and reason.⁴

One will not find very much closely reasoned theoretical argument in the treatise of 1860. For that, we must jump directly to Walras's classic work,

¹L'Economie Politique et la Justice, Paris, 1860, p. viii.

²ibid, p. xl.

³ibid, pp. xxxvii-ix.

⁴ibid, pp. xxxix-xl.

the Eléments d'Economie Politique Pure (1874-77).¹ Having himself reviewed Cournot's Recherches in 1863, praising its mathematical technique but finding fault with its doctrinal underpinnings,² Walras ~~himself~~ apparently did not get started on the mathematical task of constructing his theory of general equilibrium until about 1870, after he had secured a professorial chair at Lausanne.³

I shall enter into the details of Walras's grand synthesis only insofar as they cast light upon the subject of competition. My order of proceeding will be: first, to survey Walras's "pure" analysis for matters of semantic, conceptual and logical interest in the construction of his theory; then, to turn to various complications posed by his "applications" on the empirical and political front.

What is of immediate concern is how much Walras insists upon the singular importance of the hypothesis of "libre concurrence" (his usual technical phrase), for the purposes of rigorously establishing the validity of his pure theory, while at the same time omitting to define this crucial hypothesis or even to indicate roughly what the important conditions or assumptions were that he had in mind by postulating the hypothesis.

Of course, Walras had every right to assume that his readers were familiar with the prevailing theoretical currents of his time, and "free competition" was most certainly a familiar piece of scientific terminology by 1874! But this is not the point. Even though Walras had several terminological innovations of his own to make, none of these would have posed any difficulties by themselves

¹Eléments d'Economie Politique Pure, ou Théorie de la Richesse Sociale, 2 vols. Lausanne and Paris, 1874-77. I have consulted Vol. I of the 1st edition, as well as the 4th edition of 1900 and the "édition définitive" of 1926, especially for a few of the details of Walras's French phrasing. However, my main reliance has been placed upon William Jaffé's translated edition, Elements of Pure Economics, London: Geo. Allen & Unwin, 1954, especially for variants from one edition to the next. Hereafter, I shall cite mainly from the English edition, and unless otherwise specified, derives from the 1st edition, though much of it was rearranged by the 4th edition.

²Walras's review appeared in the Indépendant de Moselle, July 13, 1863. See Jaffé, Correspondence, Vol. I, pp. 128-9 for a brief account.

³Here, I am relying upon Jaffé's biographical sketch in "Léon Walras," International Encyclopedia of Social Sciences, New York: Crowell-Collier and MacMillan, 1968, Vol. XVI, p. 448.

in the reader's apprehension of what Walras meant by free competition. Indeed, broadly speaking, we can say that he evoked a rather conventional picture of competitive behaviour throughout his lengthy text, quite in keeping with the classical concept. In a footnote to the 4th edition (of 1900), Walras did virtually define what he meant by a "hypothetical régime of perfectly free competition" as "a régime of free competition among sellers of services who underbid one another and among buyers of products who outbid one another,"¹ a definition eminently classical in its vagueness and simplicity. But vagueness (or imprecision) is the keynote here; for, Walras had claimed so much for this postulate, insisting again and again on the need for precision and rigour in theoretical demonstration.

As with Jevons, Walras sought both generality and uniqueness in his favoured hypothesis of free competition. Yet, historical hindsight reveals how very imprecise was Walras's specification of that hypothesis by comparison with the immensely intricate theorems he tried to deduce from it. This becomes readily apparent in both his discussion of the dynamics of market equilibration and in some of his subsequent applications, but let us consider for the moment the dual claims Walras made upon his hypothesis, claims both for uniqueness and generality.

In his endeavour to show that the set of equations he employed to describe the conditions of supply and demand in a total economy were fully determinate (i.e. yielding solvable numerical values for all variables), Walras tended to create the impression that for any set of supply and demand functions, the ^solution was unique or single-valued.² That is to say, for each set of supply and demand functions, in equilibrium there would be a single specifiable result: price uniformity in each market, price equalling cost for all producers,

¹Elements of Pure Economics, ed. Jaffé, p. 40n1, from Eléments, 4th ed., p. xi.

²Since the appearance of Abraham Wald's paper, "On Some Systems of Equations of Mathematical Economics," translated by O. Eckstein from the Zeitschrift für Nationalökonomie (Vol. VII, 1936) in Econometrica, Vol. XIX, pp. 368-403, Oct. 1951, the existence and uniqueness of Walrasian general equilibrium systems of equations has been a much explored field of mathematical economics.

quantity purchased equalling quantity supplied for each commodity.¹ In a sense, Walras was setting out a taxonomy for equilibrium states, ensuring the conditions of consistency in accounting for stocks and flows.²

However, Walras intended to accomplish more than that. It was his main purpose to show how these equilibrium results would arise "automatically" from markets which were "organisée sous le rapport de la concurrence," a stipulation he repeats time and again, and having completed his derivation of general equilibrium, he reminded his reader yet again:-

371. All the conclusions we have reached so far relate to one and only one hypothesis: that of absolutely free competition in exchange, production and capital formation. Thus, what we have found out are simply the effects of free competition.³

This clearly implied that there was a unique set of circumstances to which the uniquely derived general equilibrium was to apply. Of course, Walras then proceeded to explore alternative equilibrium results under monopoly and what he termed "other systems" but it is readily apparent that Walras was speaking of partial or single-market equilibrium results in these latter cases. And, in his preface to the 4th edition (1900), Walras defined pure economics (i.e. theoretical economics) in such a way that it was confined to the single possibility of a "hypothetical régime" of perfectly free competition.⁴

Now, part of the problem is that Walras never tried to enumerate the "normal and ideal" conditions he had in mind when referring to perfectly free competition, in spite of his constant insistence upon giving a "precise description

¹These are the principal features of equilibrium as listed in a concise and summary fashion by Walras (Elements of Pure Economics, pp. 143, 173, and 255), but see also the next note for a further condition.

²Actually, this sentence is not quite accurate, because Walras also included among his essential conditions for equilibrium that of "greatest possible satisfaction" amongst all traders so as to ensure the stability (as well as existence) of equilibrium. It is to be noted, too, that Walras always qualified this latter condition with respect to its normative implications; see ibid, p. 257.

³ibid, pp. 84 and 431.

⁴ibid, p. 40.

of the mechanism of free competition."¹ The nearest he comes to doing so is when he sketches the case of market exchange by auction, and in his treatment of the process he termed "tâtonnement" (discussed shortly). However, even in these cases he seems to accept that such instances are only "well-organized," not perfect. Thus, he points out:- "The more perfectly competition functions, the more rigorous is the manner of arriving at value in exchange."² But just how or why imperfect competition should approximate the results of his undefined perfect competition is not made clear.

The real problem is that Walras wanted the best of both worlds by asserting that his ideal hypothesis of perfect competition was also the "general" case, at least, so he implies indirectly on several occasions by contrasting free competition with various other "special" cases: such as the very "unusual circumstances" of De Quincey's example of isolated exchange, or Cournot's choice of duopoly rather than unlimited competition.³ And, in what was in all probability a very unfortunate choice of terminology, Walras insists on numerous occasions throughout his discussion of the dynamics of tâtonnement that what happens in theory also happens in reality. The theoretical solution and the practical solution are the "selfsame" problem.⁴

This latter claim brings us to what is perhaps the most ambitious and the most "heroic" aspect of Walras's Eléments, his theory of tâtonnement. Credit is due to Walras for at least having tried, as well as for having acknowledged openly that any economic theory about human behaviour must treat of sequences of events, if only because there is no other way of conceiving of a process.

¹ See, for example, ibid, pp. 211 and 218.

² ibid, pp. 83-4.

³ ibid, pp. 86 (on De Quincey), 163, and 440 (on Cournot).

⁴ ibid, pp. 106, 157, 162, 169-70, 224, 241, 247, 255, 289, 294, 378 and 416, among numerous others.

There is no longer any question that Walras did not succeed in developing a rigorous proof of equilibrating tendencies so long alleged to be a characteristic of market competition. A sufficiently large number of more sophisticated studies on this subject, carried out during the past thirty years, indicate not only how incomplete Walras's own demonstration was, but also how truly unlikely it is that any such proof will ever be found.¹ Even Walras's modern-day interpreter, William Jaffé, has described Walras's attempt as "intuitive without any semblance of a rigorous demonstration."²

Walras's account of tâtonnement - the groping or higgling and bargaining in the market-place - did not find widespread or ready acceptance from his immediate contemporaries. And, to my knowledge, no other economist during the 19th century made any serious attempt to improve upon Walras's own formulation. Yet, with the passage of time, Walras's theory did eventually gain recognition and did come to be accepted as an authoritative proof of the equilibrating tendencies of market competition. For this reason, it is all the more important to understand why Walras's attempt at formal proof was a failure.

With the continuing ascent of mathematical economics during the 20th century, increasing attention was paid to the mathematical aspects of general systems of equations describing equilibrium. But the real issues posed by Walras's theory have very little to do with mathematical rigour. They concern the nature of logical entailment as applied to the sphere of human behaviour. Like the other pioneers of mathematical economics, Walras had succumbed to the temptation of construing mathematics as a language (rather than as the logic of numerical relations) and of believing that human behaviour could be reduced to, or "translated" into, the language of mathematics. "This whole theory is mathematical" he wrote. "Although it may be described in ordinary language, the proof of the theory must be given mathematically."³

¹This subject is taken up again in Chapter VII, section 4.

²Jaffé, "Léon Walras," op. cit., p. 449.

³Elements of Pure Economics, p. 45.

As plausible as this erroneous belief may have been, in the context of scientific developments, and as sympathetic as we might be towards the need for rigorous mathematical logic in economic calculation, Walras's assertion was nevertheless still quite erroneous. He may well have proven various mathematical theorems, or at least he may have drawn various mathematical theorems from Poinso't's Eléments de Statique; but the exercise of applying these mathematical theorems to the demonstration of his theory about economic behaviour was merely a case of reasoning by analogy, treating mathematical sequences as if they represented behavioural sequences.

Walras seems to have been only partially aware of this fact, at best, when for example he employs the "as-if" (or, in French, "comme") conjunction to associate one type of sequence with another:-

...These decisions which are arrived at after some deliberation, but without refined calculation, are made as if they were reached by the mathematical solution of the system of equations of demand and offer and of¹ maximum satisfaction subject to suitable constraints.

Yet, it was Walras himself who, in so angrily upbraiding his classical "literary" predecessors, insisted: "To state a theory is one thing; to prove it is another." And, in his shrill manner, Walras went on to announce that he had succeeded in proving rigorously what others had merely asserted. Evidently, he mistook analogy for proof:-

... the sequence of actual events give us, in fact, an empirical solution of this system of equations. ... The use of the language and the method of mathematics has thus enabled me to demonstrate not only the laws of the establishment of current equilibrium prices but also the laws of change in these prices. It has made it possible for me to analyse the facts, and thus to² set the principle of free competition on firm foundations.

Without entering into the philosophically and technically intricate problem of deciding whether or not the logical rigour of mathematical inference

¹ ibid, p. 169. See also the 4th ed. (1900), p. 129.

² Elements of Pure Economics, p. 427.

van be incorporated formally and strictly (according to rules of definition, substitution and manipulation) into an expanded logical argument about behaviour, we can nevertheless point to two separate ways in which Walras's argumentation falls short of the kind of rigour he sought.

First, Walras inadequately specifies the behavioural and the institutional aspects of his theory, in the sense that his descriptions of the market-place and of the people engaged in bargaining and exchange are vague and impressionistic at best. This is perhaps a harsh judgement, made from a rather long historical perspective, and it would be unfair to Walras not to add that he did seek a graphically evocative picture of auctioneering. To repeat, no one could accuse Walras of not trying! He simply over-reached himself in claiming results.

The second type of error is more reprehensible. When explicit and graphic description of events, situations and behaviour failed him, in his attempt to "translate" that behaviour into mathematical reasoning, Walras resorted to the mumbo-jumbo of "abstraction." He never tired of exclaiming, "The theorist has the right to assume."¹ Now, insofar as the theorist tries to reason about hypothetical possibilities (imagined and imaginable circumstances), then Walras was correct in stressing the role of abstraction in theory. This is what Walras thought he had done, and he summed up very concisely the whole scientific approach to the study of competition as an abstraction when he wrote:-

222. We have, perhaps, at last reached the place where we can see the importance of a scientific formulation of pure economics. From the viewpoint of pure science, all that we needed to do, and all that we actually have done up to the present, was to treat free competition as a datum, or rather as an hypothesis, for it did not matter whether or not we observed it in the real world, since, strictly speaking, it was sufficient that we should be able to form a conception of it. It was in this light that we studied the nature, causes and consequences of free competition.²

¹ Good examples are found in ibid, pp. 84 and 146. In French, Walras's verb was "supposer."

² ibid, p. 255, my emphasis added.

The crucial portion of the foregoing passage is that "we should be able to form a conception" of our theoretical subject-matter, and it was here that Walras tended to go astray in his enthusiasm. All too often throughout the course of his argument, and particularly when he had reached a critical stage in his reasoning, he asked his reader to "imagine" that various possibilities were somehow realized, though the description offered was impressionistic at best. At other times, Walras indulged in verbal obscurity. Equilibrium required that price equal cost of production, and cost of production was defined to include capital costs. In deriving general equilibrium, Walras was sanguine enough to acknowledge that the process of producing outputs from inputs must entail a certain lapse of time, but in his attempt to translate human behaviour (including the act of rational calculation) into a purely mathematical format, Walras inevitably ran into the obstacle of the passage of time. How was this to be built into his equations for production and production costs?

When considering Walras's method of clearing this immense hurdle, we should bear in mind that the same author had expressed a certain outraged indignation at the "so-called proofs" and "gratuitous assertions" of his "literary" forerunners and their "flowery phrases,"¹ and that he also claimed to have given a rigorous description and proof of tâtonnement. Walras casually disposed of the problem of time as follows:-

... Production, however, requires a certain lapse of time. We shall resolve the second difficulty purely and simply by ignoring the time element at this point. And later on, in Part VI, we shall bring in circulating capital and money and thereby make it possible for productive services to be transformed into products instantaneously.²

Thus, Walras achieved his breakthrough only at the high cost of pushing the method of abstraction beyond its possible limits by asking his reader to conceive of the inconceivable, and to accept such verbal fudges as logical truths. The long-run tendency of his appeal to abstraction was to encourage a

¹ ibid, pp. 47 and 427.

² ibid, p. 242.

double standard of logical rigour, whereby mathematical precision was attained only through semantic obscurity. However, having once identified this source of error, we must not judge Walras's performance too harshly; for, it may well be that the only way the breakthrough to mathematical analysis could have been achieved without running directly up against the force of tradition was to treat the ill-defined concept of perfect competition as a kind of heuristic fiction.

So far, this sketch of Walras's Eléments has concerned the purely logical, conceptual and semantic aspects of his competitive theory. In rounding out his treatment of pure theory, Walras warned against the danger of exaggerating the applicability of the principle of laissez-faire and entered the qualifications (1) that the principle of free competition applied only to the sphere of private demands, not to the production and distribution of public goods and services; (2) that the principle could not be applied to cases of natural monopoly (dictated by economies of scale and entry conditions); and (3) that the principle establishes the prerequisites for maximum utility starting from an arbitrarily given income distribution and therefore does not treat of the notion of economic justice in the fullest sense.¹

Undoubtedly, Walras was wise to make these qualifications, but when they and a few of his subsequent comments upon the applicability of the theory of free competition are set alongside his previous statements about that pure theory, Walras's intentions concerning the empirical and normative status begin to look vague and rather beguiling. For example, from the outset he had styled free competition as the "general case" whose implications were more directly valid in the real world the more perfectly competition functioned: in developing his model of partial equilibrium for monopoly, Walras explored the logic behind price discrimination, then added that price discrimination was also possible and rational ~~in~~ the case of free competition (presumably of an imperfect kind) and was a result that was realized frequently "in the actual world of trade and industry."² This

¹ ibid., p. 257.

² ibid., p. 442.

example typified the need to show how or when the expected results of imperfect competition more or less approximated the ideal results of perfect competition. How approximate is imperfection?

Walras was aware of this problem, and in the latter stages of his Eléments he held out the promise of a more comprehensive study of practical applications of his theory to the realm of economic policy. Eventually, he did publish two collections of essays of this nature, his Etudes d'Economie Sociale (1896) and Etudes d'Economie Appliquée (1896). On the whole, these proved to be disappointing works. Walras was quintessentially a theorist, not an acute observer of practical affairs. Though wide ranging in their coverage, these studies bring a certain naivety to the subjects of industrial structure, behaviour and performance, and offer little insight into the problem of bringing theoretical knowledge to bear upon practical problems.

More important were Walras's prodigious efforts to advance the cause of general equilibrium economics, through his enormous correspondence with economists throughout Europe, stretching over a period of several decades. And yet, remarkably little in the way of discussion about competitive themes arose out of that professional correspondence.¹ Similarly, in further editions of his Eléments, Walras fussed over many details of technique and exposition (as well as making a substantial revision of some of his equations for general equilibrium), but nothing critical was altered in respect of competitive themes,² and as we

¹Not having as yet exhausted the contents of Jaffé's edition of the Walras correspondence, I have relied upon the excellent indices Jaffé has provided to his 3-volume collection, in arriving at this general impression. At least one important incident did arise during 1889-90 concerning Edgeworth's attitude towards tâtonnement. This is discussed below, Chapter VI, section 3.

²Again, I am relying mainly upon Jaffe's notes collating the separate editions of the Elements for this general impression. One oddity is that in the 4th edition Walras added the observation that although the "multiplicity" of firms conduces to equilibrium in production, it was not an absolutely necessary condition for equilibrium (Jaffé edition, p. 225). Walras probably inserted this comment as a result of discussing the matter with some one else, though I have not been able to trace the circumstances giving rise to this point. Earlier (ibid, p. 185), Walras had touched upon the importance of the law of large numbers, hinting at the concept of infinite elasticity, though he left the matter somewhat up in the air.

shall see in the following chapter, Walras refused to enter into any debate about the logical status of his tâtonnement procedures. In short, he had made his major intellectual contribution by the 1870s, and added little essential to it thereafter.

The Eléments d'Economie Politique Pure did not meet with instant success or recognition. Heroic in his posture, Walras also brought to his writings a sort of paranoid insecurity. With the hostile aggressiveness of a wounded martyr engaged in a desperate campaign to save Economic Science, Walras managed to offend almost everybody, and thus ensured the cool reception he got, especially from professional circles in France. In retrospect, this seems to have been quite unnecessary. Walras's imposing mathematical technique may have been threatening to a tradition of thought based on literary skills; yet, that alone ought not to have stood in the way as long as it did; for, in its underlying doctrinal drift, Walras's work served to re-vitalize the very tradition he believed he was at odds with.

The heated debate over the nature of value now seems quite secondary. On the whole, the Eléments is largely devoid of conceptual originality: it was a technical exercise of translating the vision of Adam Smith and of classical economics into an explicitly mathematical form. Even Walras himself stated that he would do nothing more than "rediscover two well-known fundamental laws of economics," the laws of supply and demand and of the equality of price to cost of production.¹ The method of reasoning and the scientific status of the resulting model had changed, but the vision was essentially the same.

¹ ibid, p. 211.

Chapter VI

NEOCLASSICISM: DEVELOPMENT TO MATURITY

1. Theoretical Debate in the 1880s

Three works, written independently of one another, but appearing almost simultaneously, are now generally recognized as having marked the arrival of neoclassicism: Jevons's Theory of Political Economy (1871), Menger's Grundsätze der Volkswirtschaftslehre (1871),¹ and Walras's Éléments d'Économie Politique Pure (1874-77).

In retrospect, they seemed to have signalled the dramatic and sudden emergence of a new school of thought. In fact, on closer inspection, this did not appear to be the case to their contemporaries, for another twenty years or so. During the 1870s, the response their books elicited from other economists by way of serious discussion could be described as sporadic at best. Events on the theoretical front began to gather a momentum only during the 1880s.

To appreciate in its fullest significance the manner in which competitive theory was carried forward through this decade into the 1890s, it is necessary to bear in mind the general background of events on a much broader front. A major re-alignment of professional opinion was taking place. The influence this exerted on the development of competitive doctrine is subtle and it does not become apparent from a narrow reading of the texts on competition by themselves. So, I shall begin this chapter by sketching in a few of the more relevant features of the wider landscape, before turning to specific details on competition.

If the years from 1871 to 1874 witnessed the initial breakthrough into the neoclassical realm of thought, then the next twenty years or so can be divided into several phases through which neoclassicism progressed, en route to becoming the neo-orthodoxy of the 1890s and 1900s.

First, Jevons and Walras had to discover another's work, and then had to sort out such personal issues as related to their priority of claim to

¹Menger's work is discussed in section 4 of this chapter.

originality. This they accomplished partly by re-discovering their predecessors' work: Cournot by Jevons, Gossen by Walras. Prior to the 1880s, Menger's Grundsätze received little or not notice at all, even in Germany and Austria.

Through the 1880s, the efforts of Menger, Jevons and Walras finally succeeded in making some impression upon a fairly large number of other economists, when a flood of theoretical literature ensued, both in full-length treatises and in the form of journal articles published in the growing number of professional reviews which sprang up throughout Europe and America during this period.¹ In a very real sense, these outlets helped to create a truly international community of professional economists and of professional opinion.

However, this second wave of neoclassical economists did not properly constitute any closely knit "school" of thought. Rather than being "followers," more often than not they styled themselves as interpreters - whether critical or constructive or both - of Jevons, Menger or Walras. Far from being a period of neo-orthodoxy, the mid-1880s represent a phase of development in neoclassicism marked by fierce debate over a great many details of marginal analysis. Indirectly, the importance of the discoveries made by Jevons, Menger, Walras and their forerunners was thus recognized by this time, but the differences between their approaches to the subject were accentuated, whereas the fundamental similarities existing between them were either taken for granted or else completely overlooked.

This may seem strange to us now. In the context of theoretical controversies prevailing at that time, what those three writers had in common with one another must have seemed rather tenuous to their contemporaries. Each shared a penchant for abstract reasoning, in mathematical or quasi-mathematical terms. Each had made use of the concept of marginal utility to construct models of market exchange, models of rational choice in which sets of alternative possibilities were treated in the form of mathematical functions (or numerical schedules).

¹ Prominent among those devoted to theoretical topics were the Revue d'Economie Politique (founded in 1887), the Quarterly Journal of Economics (from 1886), the A.E.A. Quarterly (from 1886), the Economic Journal (from 1890) and the Giornali degli Economisti (during the 1890s).

And, each had selected as his starting-point the case of competitive exchange between large numbers of buyers and sellers.

On the other hand, both their techniques and their terminologies differed considerably. So, too, did the manner in which they held out the case of competition as one among many other cases of market exchange. And, quite apart from being written in different languages, their treatises emphasized contentious issues arising from separate and somewhat different traditions of thought. All of these things lent themselves to the kind of hand-to-hand combat that took place over even the most insignificant points of detail during the 1880s and beyond.¹

Following in the wake of this tremendous upsurge in interest in theoretical economics, inevitably there set in a counter-current of opinion reacting against the excesses of the abstract method. In Germany, the traditional method of studying economics had long been historical in its emphasis, though not entirely hostile to classical theory. With the sudden rise of abstract economics in Vienna between 1883 and 1887,² the so-called Methodenstreit, or Battle of Methods, was already in an advanced state of development in Germany and Austria, by the end of that decade. Though it was conducted less violently elsewhere, this struggle over the respective statures of history and theory did have its repercussions in other countries.

Thus, by the year 1890, economic theorists of all nations and of all shades of opinion faced a common enemy, the anti-theorist. Up to then, the theoretically-minded had been warring amongst themselves. In the 1890s, they did not suddenly bury all their differences, but there was a growing sense of unity, a new stress being placed on common themes, an attempt to consolidate what had been achieved during the previous decade. Whereas in the 1880s, ideas were still very much in a state of flux, and attitudes were exploratory rather than definitive,

¹A good example is to be found in the work of Auspitz and Lieben, highly dependent upon, though critical towards, that of Walras. See section 3 to follow.

²The Austrian School is dealt with briefly in section 4.

by the 1890s many economists were preparing grand syntheses of neoclassical themes, in the style of Alfred Marshall's Principles of Economics (1890), or else were tidying up the few remaining loose ends that had been left untouched by the debates of the preceding decade.

The foregoing is, of course, a much oversimplified summary of an immensely rich and complicated period in the history of economic thought, and many exceptions to the pattern outlined here will readily spring to mind. However, this general picture of events is worth keeping in mind as we begin to examine the minutiae of competitive theory and to assess the subtly shifting status of that theory from one year to the next.

2. Edgeworth and the Problems of Determinateness

F.Y. Edgeworth's Mathematical Psychics (1881) is the most appropriate place to begin a study of theoretical advances made in the 1880s, not only because Edgeworth carried Jevons's analysis several steps forward, but equally so because it was Edgeworth who by 1889 had broached the critical issue facing neoclassical theory: the adequacy of Walrasian dynamics.

One does not have to read between the lines to discern that Edgeworth's principal objective in writing his Mathematical Psychics was to clarify the many obscurities and ambiguities of Jevons's Theory of Political Economy. In the course of doing so, Edgeworth constructed what has proved to be one of the most useful techniques of marginal analysis, the indifference curve, a direct descendant of Jevons's equations of exchange. As we saw in Chapter V, Jevons had wanted to apply his simple formulae for exchange to all possible circumstances of market behaviour, an undertaking which quickly led him into innumerable difficulties.

To clarify Jevons's analysis of exchange, Edgeworth gave to the former's text an interpretation which was probably not entirely accurate in describing Jevons's intentions, but which cast his work in a more favourable light, consistent with his own thesis. In brief, Edgeworth argued that even though Jevons had framed many of examples of market exchange in terms of "isolated couples," there was always presupposed "in the background" a class of competitors such that

Jevons's pairs of traders were really intended to be a "sort of typical couple, clothed with the property of 'Indifference.'"¹ In other words, Edgeworth maintained that Jevons had always assumed a perfect market for cases of determinate exchange, that is, where there existed solutions to his formulae.

If I understand Edgeworth's reasoning correctly, he justified this rendering of his predecessor's analysis by pointing out that Jevons had begun with a series of definitions about product homogeneity, price uniformity, perfect knowledge and perfect markets, such that the resulting law of indifference (and cases based upon it) always applied to markets with perfect competition.²

That Jevons intended to argue this, in the first place, is doubtful. Whether or not he subsequently approved of Edgeworth's interpretation we shall never know, because Jevons died too soon after the appearance of Mathematical Psychics to have formulated a well-considered opinion of Edgeworth's book. In any case, Edgeworth proceeded to tidy up Jevons's mathematical apparatus, demonstrating that determinate solutions required a well-defined ^{demand} constraint (i.e. infinite elasticity facing each trader) and that this constraint rested on the postulate of perfect competition.³

Out of this demonstration flowed Edgeworth's principal thesis. Market exchange was "completely determinate" only in the case of perfect competition; it was indeterminate for all cases of "isolated" exchange; and, finally, was somehow "more or less" determinate when competition was more or less perfect.⁴ As it stood

¹Mathematical Psychics: An Essay on the Application of Mathematics to the Moral Sciences, London, 1881, p. 109. In addition to his Appendix V, "On Professor Jevons's Formulae of Exchange," pp. 104-116, see also pp. 31n, 39 and 115.

²Edgeworth does not actually say so, but more or less implies as much, by referring to p. 98 of Jevons's Theory of Political Economy, 2nd ed., London, 1879. See Mathematical Psychics, pp. 31n and 109.

³ibid, p. 113.

⁴ibid, pp. 20 and passim 34-56.

in 1881, Edgeworth's main thesis was ambiguous and incomplete insofar as he passed over rather hastily the two familiar cases of monopoly and duopoly as treated by Cournot.¹ Later in his career, Edgeworth returned to this subject, writing some celebrated papers on monopoly and duopoly.² However, these more mature and technically brilliant exercises were far less consequential than what he had to say about the question of determinateness in 1881.

To examine and assess objectively Edgeworth's contribution, it must be admitted from the outset that, Oxonian or not, Edgeworth produced in Mathematical Psychics one of the most eccentric works ever written in the history of economic thought, a book which displays some of the very best and some of the very worst features of neoclassical thinking. There should have been no surprise when his first efforts were subjected to some gentle, but encouraging, criticism from Alfred Marshall. In reviewing Mathematical Psychics, Marshall expressed what turned out to be a well-founded hope that, in the future, Edgeworth would succeed in "preventing his mathematics from running away with him."³ And so it was that Edgeworth went on to compose some of the most lucid and articulate essays on the technically intricate aspects of mathematical analysis that the neoclassical literature was ever to produce.

As for the truly "bizarre" examples of "abstraction" that Edgeworth employed throughout his treatise of 1881, once again it becomes vital to appreciate how the heuristic fiction of a "perfectly" competitive market enabled economists both to clear some immense technical hurdles, on the way to an explicitly

¹ ibid, pp. 46-7. In 1881, Edgeworth treated monopoly rather vaguely as one source of "imperfection," whereas later he dealt with it more fully in regard to such things as price discrimination, in "The Pure Theory of Monopoly" (1897).

² In particular, "The Pure Theory of Monopoly" (originally in Italian, from the Giornali degli Economisti of 1897) and "The Theory of Distribution," from the Quarterly Journal of Economics of 1904, both reprinted in Edgeworth's Papers Relating to Political Economy, 3 vols., London, 1925, Vol. III, pp. 111-42 and 13-60.

³ Academy, Vol. XIX, no. 476, June 18, 1881, p. 457.

mathematical treatment of economic logic, and at the same time to preserve a sense of continuity with the classical past. Thus, with his obscure postulate of perfect competition, Edgeworth managed to develop quite a useful collection of analytical concepts and to present them in the form of a theory purportedly treating of economic behaviour.

Like Jevons, Edgeworth casually inter-mingled behavioural concepts (requiring dynamic treatment) with situational concepts (lending themselves to a static or "^{situational}momentary" interpretation for purposes of mathematical entailment) in his reasoning about competition. This blending of mathematical with behavioural concepts can be observed when he attaches to the rather arcane idea of a "perfect field of competition" a number of superfluous properties which have nothing to do with market behaviour, though they greatly assist in describing equilibrium results:

A perfect field of competition professes in addition certain properties peculiarly favourable to mathematical calculation; namely, a certain indefinite multiplicity and dividedness, ... The conditions of a perfect field are four; the first pair referrible to the heading multiplicity or continuity, the second to dividedness or fluidity.¹

With the phrase, determinateness, Edgeworth wanted to stress not just the solvability of the equations for equilibrium, but also the characteristic of uniqueness (as well as existence and stability) of equilibrium.² Employing the concepts of marginal utility, indifference, and cardinally-ordered preference to good effect, in constructing his indifference-curves and contract-curves, Edgeworth pushed forward the logic of rational choice in economic exchange. Where Jevons had very neatly grasped the logic of rational choice from the individual's point of view and in terms of marginal utility, but had fumbled rather awkwardly through the topic of exchange itself, Edgeworth better perceived the requirements

¹Mathematical Psychics, p. 18.

²The only really definitional statement Edgeworth offers for the idea of determinateness is this: "Contract is indeterminate when there are an indefinite number of final settlements," (p. 19). Stability of equilibrium is supposed to be ensured by "re-contracting" before any final settlement results in exchange. Uniqueness is specifically mentioned on p. 46.

of mutual compromise for satisfactory exchanges to take place. This was Edgeworth's great achievement. Drawing upon Jevons's work as a source of inspiration, he managed to bring what he called the "Economical Calculus" more effectively into touch with the social or interpersonal aspects of exchange.

Furthermore, Edgeworth put his finger on the very essence of marginalism by correctly noting that it amounted to little more than the task of expressing the logic of rational choice in terms of balancing various quantities or proportions against one another, in the search for a "Golden Mean." Thus, he wrote:-

Aristotle's metaphysical theory that virtue is a mean between two vices is analagous to the mathematical theory that a maximum of pleasure is a mean between two minima.¹

But where Edgeworth's analysis inevitably went astray was on his very central thesis, that of associating a uniquely specifiable equilibrium result with a unique set of market circumstances judged to be necessary and sufficient for that ideal result. And, here again, Edgeworth - like Cournot, Jevons and Walras before him - confused the logic of mathematical consistency with the logic of causal explanation connecting one empirically distinct set of circumstances with another. For, Edgeworth evidently did believe that a "formal proof" of competitive theory could be given,² and that Messrs. Jevons, Walras and Marshall (and perhaps also Cournot) had already done so.³

However, Edgeworth indicated that he would not attempt to formulate a complete proof himself, only a sketch of a proof along with some major conclusions, because (as he expressed it) his chief purpose was somewhat different:

¹ibid, p. 55n2.

²In the preface to Mathematical Psychics, he states that a mathematical theory of competition "is given, or at least promised (pp. 30-33)," (p. vi). The section title, "Demonstrations" (p. 20), is qualified by a footnote: "Conclusions rather, the mathematical demonstration of which is not fully exhibited" (p. 20n1). After developing his theory, he adds: "If this reasoning does not seem satisfactory, it would be possible to give a more formal proof," (p. 38).

³ibid, pp. 30 and 47.

"to inquire how far contract is determinate in cases of imperfect competition."¹
In the course of pursuing this latter investigation, Edgeworth did provide a few glimpses of how he thought the theory of perfect competition could be demonstrated, and it is ironic that he employs a method of reasoning very similar to that of Cournot in order to establish a set of conclusions quite opposed to those reached by that same theorist!²

Using the concepts of marginal utility, indifference, and cardinally-ordered preferences for exchangers, Edgeworth wrote of "contracts" as sets of quantities of goods-in-exchange deemed to be mutually acceptable to all parties involved in any contemplated exchange, and from this he derived his "contract-curve," interpreted as the locus of points (two-dimensional or multi-dimensional) which defined this set of possible combinations of goods-in-exchange. With this analytical apparatus, Edgeworth advanced the bold proposition that "the quantity of final settlements is diminished as the number of competitors is increased,"³ and taking this number to its extreme limit, the extent of the contract-curve shrinks to a unique point for the case of perfect competition.⁴ The effect of increasing the numbers of traders is a constraining one, in that it narrows the range of possible exchanges defined by the contract-curve; but anything short of perfect competition still holds open an indefinite number of final settlements.⁵ Hence, only the case of perfect competition allowed for a "determinate" equilibrium result.

Edgeworth's abbreviated "proof" resembled Cournot's procedures in that both of them tried to show that the abstract process of somehow "adding"

¹ ibid., p. 34.

² Most of Edgeworth's theoretical exposition is contained in pp. 30-41.

³ ibid., p. 40.

⁴ ibid., p. 37.

⁵ ibid., p. 39.

successively more competitors into the hypothetical market situation would produce the same results as if one were following various mathematically converging sequences of numbers to their unique limits. However, there was an important difference. Cournot started with pure monopoly (many buyers and a single seller) and believed that a unique result existed all along the spectrum stretching from one seller to an infinite number of sellers. Edgeworth began with "isolated exchange" between a single buyer and seller, and believed that along the spectrum towards perfect competition only a range of results was specifiable at each stage, unless a further principle was introduced, a sort of supplementary principle of compromise or arbitration.¹

Before we examine the far-reaching conclusions Edgeworth drew from this argument, let us pause for a moment to assess the adequacy of his sketch for a "proof" of the theory. Edgeworth's logic is best interpreted as a logic of possibilities, not of events as they occur in dynamic sequences. Granted, he had indicated how one might define or delineate the range of equilibrium results that were possible (given the preference patterns and stocks of goods possessed by all exchangers) in terms of indifference-curve and contract-curve analysis of rational choice. But, Edgeworth did not show how equilibrium was to be realized. To wit, how were numerous buyers and sellers to discover what these possibilities of final settlement were?

The foregoing is certainly not an idle question; for, as we shall see shortly, this very question had occurred to Edgeworth himself sometime between 1881 and 1889. In his Mathematical Psychics, Edgeworth had been quite alert to recognize how crucial was the role played by the demand constraint placed upon price behaviour in the theories of Jevons and Cournot, both of whom had hinted at the concept of infinite elasticity of demand and had postulated the condition of price uniformity to be taken as given from the outset.² By the aid of his

¹ ibid, pp. 51 and 56.

² For Edgeworth's identification of infinite elasticity of demand, see ibid, pp. 39, 47 and 113-116. For the remarks of Cournot and Jevons on this concept, see Chapter V.

contract-curves, Edgeworth claimed that he had avoided these questionable assumptions made by Cournot and Jevons in regard to situations of imperfect competition.¹ However, it was still not very clear from Edgeworth's text how perfect competitors were to find themselves eventually in equilibrium through the process of "re-contracting" according to what Edgeworth described vaguely as the "smooth machinery of the open market."²

Evidently, in 1881, Edgeworth was not concerned with the problem of dynamics. Satisfied with the "proof" he had so briefly intimated, Edgeworth was more anxious to emphasize the potential dangers for economic theory posed by the prospect of indeterminateness, and hence the theorist's utter reliance upon perfect competition:-

... But if it should appear that the field of competition is deficient ...; if competition is found wanting, not only the regularity of law, but even the impartiality of chance - the throw of a die loaded with villainy - economics would be indeed a 'dismal science' and the reverence for competition would be no more.³

Edgeworth went even further than that, by projecting the possibility of theoretical failure onto the real world, in the functioning of actual markets. Indeterminateness was not merely the theorist's inability to reduce the concept of equilibrium to a unique and solvable set of mathematical formulae: it had its counterpart in the real world: deadlock, stalemate, "undecidable opposition of interests," the characteristic "evil" of indeterminate contract.⁴ Indeed, so thoroughgoing was his faith in perfect competition that he looked upon the traditional robustness of competitive striving as if it were an evil tendency towards "dissimulation and objectionable arts of higgling." The noble art of bargaining had become, for Edgeworth, a sure sign of "higgling dodges and designing obstinacy," when compared with the smooth and trouble-free machinery

¹ ibid, pp. 31 and 40. On p. 47, he notes in regard to Cournot's method that "uniformity of price" is not "abstractly necessary in cases of imperfect competition."

² ibid, p. 30.

³ ibid, p. 50.

⁴ ibid, pp. 29 and 51.

of perfect markets.¹

Of course, what Edgeworth had in mind was the rise of the trades-union movement and the increasing regularity of strike action to influence the result of wage negotiations. In the second half of his book, Edgeworth sought after some alternative principle, whereby market conflicts might be resolved. Without going into that lengthy discussion here, I shall only list briefly one or two passages in which Edgeworth offered some insights, but continued to apply the peculiarly neoclassical twist to the ever-changing concept of competition.

First, Edgeworth realized that competitive interdependence, as applied to market exchange, involved elements of both conflict and co-operation:-

'Is it peace or war?' asks the lover of 'Maud,' of economic competition, and answers hastily: It is both, pax or pact between contractors during contract, war, when some of the contractors without the consent of others recontract.²

Later, in his text, with the problems of trades-unionism looming ahead, Edgeworth further realized that market bargaining could entail various groupings of individuals into associations or combinations. With this in mind, he drew two conclusions: (1) Starting from a situation in which there are only "individual" traders, combination alters the range of possible contracts in such a way as to favour the combiners,³ and (2) the degree of determinateness in any bargaining situation depends not so much upon the number of "individuals" as upon the number of "associations in the field."⁴

To judge by his words quoted above,⁵ Edgeworth certainly perceived in these two conclusions the enormous problems and perplexities of competitive grouping. The variability in the composition of the competitive "units" is as much

¹ ibid, pp. 30 and 46.

² ibid, p. 17, his emphasis.

³ ibid, pp. 43-45.

⁴ ibid, p. 49.

⁵ i.e. the text to note 3 page 229 above.

a source of theoretical indeterminacy as is the limitation in the numbers of those units, however they may be defined. So horrified was Edgeworth by the thought of a wholesale collapse of economic theory and ^{of} the scientific enterprise, that he attempted to dispose of this profound difficulty by resorting to some rather obscure technical jargon. In so-called "perfect" competition, the indestructible competitive unit was taken to be the "catallactic molecule," the bare and irreducible individual human being.¹

Now, to treat the individual human being as the only competitive unit of analysis renders it extremely difficult to apply competitive theory to the realm of production, where two or more dissimilar factors of production are to be combined with one another to form a complex unit of production. Unfortunately, Edgeworth did not delve into this aspect of competitive theory. It was on a different issue that Edgeworth was to play such a prominent part in the ensuing theoretical crisis of the 1880s.

3. The Logic of Dynamics and the Crisis in Economic Theory

In his Mathematical Psychics, Edgeworth made numerous incidental references to Léon Walras's Éléments d'Economie Politique Pure, references which taken together suggest a generally favourable reception of the latter's work. However, in 1881, Edgeworth did not stop to consider the problems of dynamics that were raised by Walras's ambitious theory of tâtonnement. In France, that theory did not receive any critical notice until 1883, and even then, the criticism was addressed only to the much condensed version given in Walras's shorter book, his Théorie Mathématique de la Richesse Sociale (1883).²

In the preface to this new publication, Walras complained that both

¹ ibid, pp. 31 and 44.

² Walras's Théorie Mathématique de la Richesse Sociale, Lausanne, Paris, Rome and Leipzig, 1883, is a very concise and readable summary of the Elements, but it is a pity that Bertrand (see immediately below, note 1 page 232) did not attempt to come to grips with Walras's fuller exposition.

his and Cournot's efforts to construct mathematical theories had been ignored by the economics profession at large. There duly followed a short review of Cournot's Recherches and Walras's Théorie Mathématique by an eminent French mathematician, Joseph Bertrand.¹ Like Horner's review of Canard earlier in the century, Bertrand suggested skeptically that Cournot had employed an enormous amount of mathematical reasoning to deduce theorems of a trivial nature, theorems which were immediately obvious and acceptable from common-sense verbal reasoning. However, Bertrand refused to draw any major conclusions as to the future of mathematical economics. He merely pointed out numerous difficulties encountered in both Cournot's and Walras's arguments in their attempts to translate the dynamics of market behaviour into mathematical functions, especially in regard to the initial specification of those functions in such a way that would adequately capture all the logical possibilities of rational behaviour. Though largely critical in tone, Bertrand's review did contain a few encouraging suggestions which seemed to keep alive the hope that mathematical theories of competitive behaviour could be successfully constructed.

Within the next five or six years, several mathematical treatises were published on the subject of competitive market exchange.² What must be said of these, first of all, is that none of them³ proceeded in the direction of copying,

¹Bertrand's review appeared in the Journal des Savants, Sept. 1883, pp. 499-508.

²Of special note are Wilhelm Launhardt's Mathematische Begründung der Volkswirtschaftslehre, Leipzig, 1885; G.B. Antonelli's Sulla Teoria Matematica della Economia Politica, 1886; the earlier treatise, Zur Theorie des Preises, Leipzig, 1887, by R. Auspitz and R. Lieben, which was expanded into their Untersuchungen of 1889; and M. Pantaleoni's Principi di Economia Pura (1889), English translation as Pure Economics by T. Boston Bruce, London, 1898. Pantaleoni's book was designed to serve as an introduction to the new mathematical economics for the non-mathematically inclined reader, and so breaks no new ground on its own. I have not yet consulted Antonelli's Teoria of which Schumpeter has written favourably (History of Economic Analysis, New York: Oxford University Press, 1954, pp. 858 and 1061).

³To my knowledge, no theorists in the 19th century made any serious attempt to build upon Walras's tâtonnement procedure to construct a dynamic proof of market equilibrating tendencies. However, the literature is immense, and the Italians in particular (eg. Barone, of whom I have read nothing, unfortunately) began to show much interest in Walras's work by the 1890s. Doubtless, further research would uncover something along dynamic lines, but to judge by Pareto's mature work, nothing much came of it.

improving, or elaborating upon Walras's theory of tâtonnement in its formal and explicitly dynamic aspects. Though these texts may have made many passing and casual allusions to the dynamics of market behaviour, the mathematical apparatus they employed was designed to establish (in what could be loosely termed a "static" fashion) the quantitative conditions of an existing equilibrium. And, though they may have employed what was later to be called the method of "comparative statics," their formal logical procedures were not designed to demonstrate how an economic market or system of markets moved from one equilibrium state to another, in response to changes introduced into the situation.

Secondly, I will not undertake to describe here the many minute technicalities over which the new generation of theorists fought so fiercely during the latter half of the 1880s. Space does not permit such an undertaking, but more than that, few of these technically recondite controversies provide very little understanding of the special competitive themes I have identified in this thesis. Instead, the very sophisticated issues raised during this and the following decade hinged around matters concerning the economic calculus, rather than the logic of competitive behaviour.

However, out of this highly technical literature, one vast problem in economic theory does emerge, pointing to the critical role of the competitive postulate. One of the main purposes of Walras's general equilibrium theory was to show how the prices and quantities of goods taken in exchange for one another in a system of inter-related markets mutually depend upon one another. To accomplish this task, a sufficient number of constraints placed upon the price/quantity variables had to be specified, in order to reduce them to a set of determinate values in equilibrium. In their attempts to derive equilibrium values for prices and quantities, the economists of this period more and more placed their reliance upon the competitive postulate for the following reason.

It has long been accepted that the greater the number of buyers and sellers in a single market, the less influence each ^{of them} could exert over the total result of the collective behaviour. Thus, in the limit of perfect competition, as

Cournot and Jevons had intimated, each buyer and seller was considered to be "powerless" to influence the general level of prices. From this premise, they were drawn into making something of a non-sequitor: that at each moment in time, buyers and sellers in perfect competition passively accepted as "given" (by the market) some uniform price ruling in the market, even though that price level might vary from one moment to the next.

This rather loose piece of verbal reasoning, based upon a fallacy of composition, seemed to offer a great simplifying device for deriving equilibrium results. Yet, there was no good logical reason why this artificial constraint should be put upon price in dis-equilibrium states of affairs, for it was almost like saying that perfect competitors did not engage in any price competition in their search for maximum profits, even in dis-equilibrium states. If price was to be viewed as the key variable, how could one logically justify treating it as somehow "given" from the outset? Thus it was that theorists had a field-day picking holes in one another's arguments, especially when explaining the dynamics of individual sellers' bargaining behaviour.¹

An excellent case in point is to be found in the criticisms of Auspitz and Lieben, against Walras's technique of tâtonnement, in their Untersuchungen über die Theorien des Preises (1889). They objected to the manner in which Walras had treated all other prices as given, in deriving the dynamic path to equilibrium in a single market, especially since Walras had insisted, at the same time, that his method offered a simultaneous solution to all prices in a general system of markets.² A sharp inter-change between them ensued, when Walras

¹Simon et al provide an amusing description of this pattern of development in duopoly theory, where dynamics were more readily applied: "Beginning with Cournot's critic Bertrand, duopoly theory has been thus: A writer criticizes a predecessor for assuming away an essential factor. The critic then builds a model embodying that omitted essential factor. But at the same time he leaves out one or more factors taken as crucial by his predecessors. Even though the non-formal discussions have become much richer and more realistic over time, the formal models have not." See Julian L. Simon et al, "A Duopoly Simulation," Review of Economic Studies, Vol. XL, July 1973, p. 353.

²R. Auspitz and R. Lieben, Untersuchungen über die Theorie des Preises, Leipzig, 1889, pp. xxiii-xxiv. See also the French edition, Recherches sur la Théorie du Prix, tr. L. Suret, Paris, 1914, pp. xx-xxi.

answered in the Revue d'Economie Politique of 1890, directing much the same criticism against their method of treating single markets in isolation of one another.¹

It was during these critical years, 1889-91, that Edgeworth returned to the forefront. To appreciate the underlying significance of Edgeworth's new attack upon Walras, we should bear in mind the general state of affairs. In comparison with other economic treatises of that period, the Untersuchungen of Auspitz and Lieben drew heavily upon the former achievements of Walras, and yet, such were the theoretical controversies of the day, that Auspitz and Lieben chose to cast their analysis in a way that highlighted not their indebtedness to Walras, but their technically involuted disagreements with him. This was a sign of the times. There was little consensus amongst theoreticians by the end of the 1880s, at least, nothing that was recognized as a consensus.

In 1889, Edgeworth published a short review of the 2nd edition of Walras's Eléments. Though very brief, Edgeworth's review was very much to the point. He judged Walras's tâtonnement to be "not^a very good idea," with the following explanation:-

... What [Walras] professes to demonstrate is the course which the higgling of the market takes - the path, as it were, by which the economic system works down to equilibrium. Now, as Jevons points out, the equations of exchange are of a statical, not a dynamical, character. They define a position of equilibrium, but they afford us no information as to the path by which that point is reached. Prof. Walras's laboured lessons indicate a way, not the way of descent to equilibrium.²

Edgeworth had evidently taken to heart Marshall's gentle strictures concerning the abuse of the mathematical method, and Edgeworth used both this short review of Walras's Eléments as well as his much lengthier address to the British

¹L. Walras, "Observations sur le Principe de la théorie du prix, de MM. Auspitz et Lieben," Revue d'Economie Politique, Vol. IV, no. 3, 1890, p. 322. The Austrians replied in ibid, no. 4, pp. 599-605.

²Edgeworth, "The Mathematical Theory of Political Economy," Nature, Vol. XL, Sept. 5, 1889, p. 435, his emphasis. This short review was not included in the collected Papers, though Edgeworth mentioned it in his appended note of Vol. II, p. 311, wherein he repeats almost verbatim the relevant portions of the text cited here. Edgeworth was evidently referring to Jevons's Theory of Political Economy, London, 1871, pp. 93-4 (or 2nd ed., 1879, p. 101) on the matter of statics and dynamics, for which see Chapter V, section 3. Bortkiewicz pursued this issue, citing Jevons in a different way, as is described below in this text.

Association, given in the same year, to put forward his own views on the nature and status of mathematical economics. In this second paper, he once again touches upon the subject of Walrasian tâtonnement. Rather than attempt to summarize his over-all position, I shall cite the high point in his argument:-

Professor Walras, illustrating the operation of a simple market, supposes each dealer, before going to the market, to write down his scale of requirements - how much he would be willing to buy or sell at each price. From these data it would be easy to calculate beforehand the rate of exchange which would prevail in the market formed by these individuals. But, when we advance from the simplest type of market to the complexities introduced by the division of labour, it is seen to be no longer a straightforward problem in algebra or geometry, given the natures of all the parties, to find the terms to which they will come. Here, even if we imagine ourselves in possession of numerical data for the motives acting on each individual, we could hardly conceive it possible to deduce a priori the position of equilibrium towards which a system so complicated tends. Accordingly it may be doubted whether the direct use of mathematical formulae extends into the region of concrete phenomena much below the height of abstraction to which Jevons has confined himself.¹

To continue Edgeworth's metaphor, it could be said that he had left the status of the theory of perfect competition somewhat precariously up in the air. Of all the writers of the 19th century, Edgeworth pointed most clearly and accurately in the direction that things were to go in the 20th century. However ambiguous it may be, Edgeworth's view (expressed in 1889) comes closest to that which I shall put forward in the concluding chapter of this history. In spite of that fact, I must confess that I do not understand, nor would I pretend to be able to reconcile, everything that Edgeworth had to say about this subject (i.e. the logical status of the theory of perfect competition). Several of his comments, when taken out of context, could easily be interpreted in a multitude of different ways.

Apparently, Edgeworth felt that economists could not show how the equilibrium results alleged to arise from perfectly competitive markets would be reached, that is, no dynamic proof could be found, but that economists could somehow nevertheless prove the connection (in some obscure sense) between that

¹Edgeworth, Opening Address to Section F of the British Association, as reported in Nature, Vol. XL, Sept. 19, 1889, p. 498. This article was reprinted, with minor changes, in his Papers, Vol. II, pp. 273-312 (see p. 281).

perfect type of market and its alleged results. It was as if non-dynamic methods of reasoning could establish, in a logically rigorous manner, propositions about economic behaviour, linking one empirically distinct set of circumstances to another, by-passing or leaping over the "dynamic path" and yet still connecting an initial set of prerequisites to a final set of results.

By insisting that the equations of exchange were "of a statical character,"¹ Edgeworth was pointing in the right direction. But, at the same time, he felt obliged to salvage the theory of perfect competition, to prevent what he obviously believed would otherwise be the total collapse of economic theory.² By granting that Walras had shown "a way," if not "the way," to equilibrium, he left open a loop-hole through which some residual faith in the dynamic rigour and soundness of competitive theory could escape untouched.³

It was this very loop-hole that Ladislaus von Bortkiewicz made full advantage of, when he brought forward his favourable review of Walras's Eléments, defending it against the criticisms of Edgeworth. After taking special note that Edgeworth did concede Walrasian tâtonnement to be "une voie, non pas la voie d'acheminement à l'équilibre,"⁴ Bortkiewicz cleverly pressed his case by citing Jevons's Theory to the effect that the "complete solution" to the problems of economic theory must be dynamic.⁵ "Well," asked Bortkiewicz, "did Edgeworth

¹Here, Edgeworth was again interpreting Jevons's text rather liberally to suit his own purposes, as Bortkiewicz's reply made clear. See note 2, page 235, and note 5 below.

²This fear, which he had already intimated in Mathematical Psychics, p. 50 (see text cited from note 3, page 229 above), was to be expressed quite clearly again in 1897, as is discussed in the text to follow.

³It might also be said that Edgeworth was attributing dynamic virtues to his own theory when he insisted that "the process of recontract" might be regarded as more fundamental in market higgling than Walras's own tâtonnement (Papers, Vol. II, pp. 311-12), a statement curiously at odds with his main point.

⁴L. Bortkévitch (i.e. Bortkiewicz), Review of Léon Walras's Eléments d'Economie Politique Pure, 2nd ed., in Revue d'Economie Politique, vol. IV, Jan.-Feb. 1890, p. 85.

⁵ibid, pp. 85-6. Bortkiewicz cited Jevons accurately (Theory, 2nd ed., p. 101), though in his own French translation.

have a better alternative to offer in place of Walrasian tâtonnement?"

Bortkiewicz had quite effectively confronted Edgeworth with a genuine dilemma. We have reached a critical moment in the history of economic thought, with this sequence of inter-changes between Edgeworth, Walras and Bortkiewicz. Would Edgeworth push his case against Walrasian tâtonnement and thus help to destroy the very basis of economic science, the theory of perfect competition? Or, would he try to construct a better alternative, in dynamic terms? Or, could he somehow avoid having to make this choice? Edgeworth's reply to Bortkiewicz came in the Revue d'Economie Politique of 1891.

Before we turn to Edgeworth's well-considered statement of policy, a few words should be devoted here to Walras's behaviour in this vital clash. Edgeworth's critical review of 1889 had been tempered by some genuinely appreciative comment, bestowing some lavish praise upon Walras for his many accomplishments. In fact, Edgeworth had corresponded with Walras briefly before his review had appeared, and during 1889 and 1891 Walras had alluded to Edgeworth's review on several occasions to other correspondents.¹ However, these letters were non-technical and merely re-asserted Walras's faith in tâtonnement, without throwing any new light on the subject. By 1891, Walras was beginning to behave like a petulant prima donna, confessing to Bortkiewicz, his only really faithful supporter at that time, that he was exasperated - "à bout de forces" - by the slashing attacks made by Edgeworth, as well as by Auspitz and Lieben, upon his theories, and that he refused to enter into any further discussion about the matter of tâtonnement with Edgeworth, leaving it to Bortkiewicz to carry on the debate on his behalf.²

Writing in French, Edgeworth began his reply to Bortkiewicz on a conciliatory note, but he refused to concede to him or Walras any ground. It

¹From The Correspondence of Léon Walras and Related Papers, 3 vols., ed. W. Jaffé, Amsterdam: North-Holland Publishing, 1965, see Vol. II, letters numbered 910, 928, 933, 943, 996 and 998 for comments by Walras and others on Edgeworth's review and on the issue of tâtonnement in general.

²ibid, Vol. II, p. 434.

would be a grave error, he wrote, to the cause of economic science if mutual recriminations were carried too far amongst "les membres de cette petite et encore obscure secte d'économistes qui cherche le salut dans le sentier étroit de la méthode mathématique."¹ In other words, mathematical economists must stick together, and find their common ground. Once more paying his respects to Walras's great achievements, he thereupon quietly re-affirmed his original position, again citing Jevons as an authority:-

D'abord je maintiens que, comme Jevons le déclare lui-même, les équations de l'échange ont un caractère non pas dynamique, mais statique; elles expriment une position d'équilibre, mais elles ne nous fournissent aucun renseignement sur la voie par laquelle ce point d'équilibre a été atteint, ... je maintiens que le jeu de tout ce marchandage [i.e. higgling, tâtonnement] par lequel le prix du marché se trouve déterminé, la direction que suit le système pour arriver à la position d'équilibre, ne rentre pas dans la sphère de la science.²

A great deal of progress had been made in the mathematical formulation of the economic calculus since those momentous days when W.T. Thornton caused such a sensation with his skeptical attack upon the "law" of competition; but even as late as 1891 Thornton's ghost was still to be heard. Edgeworth brought back Thornton's examples of different patterns of auctioneering to show not only the diversity of market behaviour but also its infinite complexities, especially in regard to specifying the precise kind of behavioural assumptions that one must make in order to properly construct a dynamic theory. Where Edgeworth parted company with Thornton was in his insistence that whatever the bargaining procedures followed in a perfectly competitive market, the same unique equilibrium would always result, even if we could not specify the dynamic path to that result.³

This was the crux of the matter, the most vulnerable portion of Edgeworth's compromise position, a weakness that Bortkiewicz had already

¹Edgeworth, "La Théorie Mathématique de l'Offre et de la Demande et le Coût de Production," Revue d'Economie Politique, vol. V, Jan.-Feb. 1891, p. 10.

²ibid, p. 12.

³ibid, p. 13.

identified. Edgeworth was not satisfied to say merely that economists could define an equilibrium position by the various quantitative constraints they specified for it. He still wanted to associate that equilibrium with some ideal market, an ideal market which was alleged (though not demonstrated) to give rise to the particular constraints in question.

In the years to follow, the fragility of Edgeworth's compromise became apparent, even in his own writings. For example, in one of his many celebrated papers, "The Theory of Distribution," he once again noted that "only the position of equilibrium is knowable, not the path by which equilibrium is reached," but that "it is presumed that somehow a state of equilibrium will be brought about."¹

An unsympathetic interpretation of Edgeworth's view would be to say that he wanted the best of both worlds: the certainty of logical rigour without the toil of providing the substance of logical rigour. But this is to overlook the dilemma Edgeworth thought he faced, and a more sympathetic judgement can be rendered. Edgeworth went to a great deal of trouble to demonstrate that Cournot's model of duopoly was indeterminate. Almost a century of further investigation, aided by computer technique and more sophisticated mathematical models of duopoly, has confirmed Edgeworth's opinion.² However, in bringing this view forward, Edgeworth felt obliged to re-assert his faith (and faith I believe to be the most appropriate term here) in the determinateness of perfect competition. For, without that theory, Edgeworth contemplated the total demise of "abstract economists, who would be deprived of their occupation, the investigation of the conditions which determine value."³

¹Edgeworth, "The Theory of Distribution," Quarterly Journal of Economics, Vol. XIX, Feb. 1904, cited from Papers, Vol. I, p. 39, my emphasis added.

²I refer again to Simon et al, "Duopoly Simulation and Richer Theory: An End to Cournot," op. cit., p. 365.

³Edgeworth, "The Pure Theory of Monopoly," as cited in Papers, Vol. I, p. 139. This paper originally appeared in Italian, in the Giornale degli Economisti of 1897, and was translated back into English by Edgeworth in 1925. I have not seen the Italian version.

It is not surprising that Edgeworth should have been so daunted by this dilemma as he was. A longstanding scientific tradition demanded that the study of the economic calculus (and, in particular, of equilibrium) be presented in the form of theories about market behaviour. The answer to Edgeworth's dilemma was to re-define the purposes of abstract economics.

To conclude this survey of one of the most critical episodes in the evolution of economic thought, let me summarize the respective positions in this way. Both Edgeworth and Walras were half right and half wrong. Walras was correct in maintaining that any theory of perfect competition, or of market behaviour in general, must be dynamic (given the very nature of the subject-matter: temporal sequences of events). He was wrong in claiming to have provided a proof of the equilibrating tendencies of perfect competition by his dynamic theory of tâtonnement. Edgeworth was right in his criticisms of Walras's dynamics and in his characterization of mathematical economics as the descriptive study of equilibrium properties. Edgeworth was wrong in claiming that the theory of perfect competition could be established by the method of statics alone.

4. A Digression on Developments in Germany and Austria

During the latter half of the 19th century, the Austro-German community built up quite a formidable tradition of economic thought, in both the historical and theoretical fields. It would be remiss of me not to offer some account of the developments emanating from their various schools. What I shall provide here comes only in the form of a very condensed digression. This is for several reasons. I can boast only a very selective and cursory knowledge of their vast literature. And, to judge by a few leading works, it is evident that competition never became the contentious issue it was in the French and English traditions.

Since the 1850s, historicism had been the dominant school in Germany, though the lines of demarcation between historicists and theorists had never been very sharply drawn. Roscher's System der Volkswirtschaft or Wagner's Grundlegung

der Politischen Oekonomie, for example, illustrate how dependent the historicists were upon the classical frame of reference. And, we should recall that in 1871, Menger dedicated his abstract treatise, Grundsätze der Volkswirtschaftslehre, to none other than Roscher himself. During the 1860s, the more classically oriented economists in Germany were moving in the direction of mathematical analysis, as can be seen in the various works on the subject of production by Mangoldt.¹

Thus, when Menger seized the theoretical initiative in 1871, there was no sudden or immediate recognition of a profound split between the so-called "Austrian School" and the German historicists. In fact, Menger's theories found little response in Austria prior to 1881.² Schmoller's methodological attack upon Menger came only in 1883, and the next four or five years saw the celebrated Methodenstreit conducted at its fiercest level.

To the best of my knowledge, competition never became a central focus for debate in Germany or Austria through the 1870s and 1880s. It was touched upon tangentially, if at all. For one thing, the most serious threat to the older classical orthodoxy came not from the historicists themselves, but from Karl Marx's Das Kapital. Aside from a few of the usually hostile remarks upon "capitalist" competition, Das Kapital left the classical concept of competition pretty much intact, as a generally "equalizing" principle, because Marx was trying to beat the classical economists at their own game.³ If Marx did draw ominous conclusions

¹Especially his Grundriss der Volkswirtschaftslehre, Stuttgart, 1863, re-published by Gregg Press, 1968. I have not consulted any of Wagner's works, but fortunately the first two volumes of Roscher's massive System der Volkswirtschaft (5 vols., 1854-94) have been translated by John J. Lalor as The Principles of Political Economy, 2 vols., New York, 1878. Though the official founder of German Historicism, Roscher is quite classical in his attitude towards competition, with minor reservations. See Vol. I, pp. 294ff.

²For this general impression, I have relied upon the survey of Austrian economics given by F.A. von Hayek in his Introduction to Menger's Grundsätze der Volkswirtschaftslehre (Vienna, 1871) reprinted as Vol. I to The Collected Works of Carl Menger, London School of Economics, 1934.

³In Vol. I of Das Kapital (1867), we find the familiar comments as to the conflictual and destructive force of competition (see the English edition, Capital: A Critique of Political Economy, tr. by S. Moore and E. Aveling, London: Lawrence & Wishart, 1970, pp. 427ff. and 621ff.). In the posthumously published Vol. III, edited by Engels, Marx announced the "fundamental law of capitalist competition" which he said "political economy had not hitherto grasped" (ibid, Vol. III, p. 37). But this turns out to be nothing more than the classical proposition that competition "equalizes" just about everything (see ibid, Vol. III, Ch. X, pp. 173-99 on "Equalisation of the General Rate of Profit through Competition"). Of course, Marx tagged onto this classical theory much of his own metaphysics of value.

from his model of capitalist production and accumulation - conclusions about the unstable and "contradictory" nature of the processes involved - then he did not attach those inferences specifically to competition itself, but to the institution of private property. And, even if a future convention among scholars would be to attribute loosely all sorts of Marxian evils to "capitalist competition," then neither is this especially accurately based on Marx's own texts, nor was Marx's attitude towards competition particularly evident to his contemporaries.

Another potentially rich source of comment upon competition might have been the mushrooming literature about entrepreneurial profit, commencing with Mangoldt's Die Lehre vom Unternehmergewinn (1855) and leading to a huge outburst on this subject, emanating from Vienna in the 1880s and exemplified best in Mataja's Der Unternehmergewinn (1884). However, to judge by these two writers, evidently this stream of thought was still pretty much classical in its style, searching for the nature of entrepreneurial gain in the very meaning of words, and devoting rather little space to the behavioural aspects of competition.¹

Schmoller and Menger acted as the chief protagonists in the clash between the historical and the theoretical camps. In the remainder of this section, I shall concentrate on their writings, in order to illustrate how the concept of competition entered only tentatively into the main dispute, a dispute which, significantly enough, pointed to the problem of competitive grouping.

Gustav Schmoller entered the ranks of the historical school with a monograph, Zur Geschichte der deutschen Kleingewerbe im 19 Jahrhundert, published in 1870, wherein the brunt of his argument was ranged against a governmental policy of laissez-faire towards small-scale industrial enterprise, and a considerable amount of statistical evidence was presented to support the trend towards large-scale industrial organization under state direction. In his many subsequent

¹I have not yet studied Mangoldt's Die Lehre vom Unternehmergewinn, though his Grundriss of 1863 treats of the subject of profit at length. V. Mataja's Der Unternehmergewinn, Vienna, 1884, refers to competition frequently, but only in classically familiar terms. There are a great many other German titles on this subject which I have not consulted.

works, Schmoller moved further towards a nationalistic point of view in which there was something of a revival of mercantilist logic in place of the classical "individualism" he protested against. "All economic and political life rests upon psychical mass-movements, mass-sentiments, and mass-conceptions,"¹ he wrote, though he qualified this statement in the very way in which it was most vulnerable:-

... The struggle for existence in economic life in particular, as in social life in general, is necessarily carried on at all times by smaller or larger groups and communities.²

As the economic and political institutions of Germany strengthened throughout the latter half of the 19th century, the old obsession about national identity should have passed, but traditions die hard. At the very least, it could be said that Schmoller tried to breathe some new life into the concept of competition by drawing attention to its diversity, denying that it was rigidly associated with any one set of institutions.³ Unfortunately, Schmoller's many comments did little to clarify the status and role of competition vis-à-vis economic theory.

Carl Menger's Grundsätze, like Jevons's Theory, is of far greater historical importance for its novel treatment of the economic calculus, in terms of marginal utility, than it is for anything said about competition. The relative lack of attention given to Menger's fourth and fifth chapters, on exchange and price, by his followers and imitators during the 1880s will bear this out. In a very lengthy and ponderous fashion, Menger elaborated upon the contrasting results

¹Cited from Schmoller's The Mercantile System, tr. W.J. Ashley, London, 1896, p. 61. This originally appeared in Schmoller's Studien über die Wirtschaftliche Politik Friedrich des Grossen (1884).

²The Mercantile System, p. 59, my emphasis added.

³See, for example, his "Über einige Grundfragen der Social-politik und der Volkswirtschaftslehre," Jahrbüchern für Nationalökonomie und Statistik, vols. XXIII-XXIV, 1874-75, French translation given in his Politique Social et Economie Politique, Paris, 1902, esp. pp. 116-7.

of bargaining behaviour in markets with isolated, competitive and monopolistic conditions. The conclusions he drew were quite familiar from the classical texts of, say, Malthus or Bailey, and were no more rigorously established than they were by previous classical writers, even if Menger went to considerable lengths to describe the sort of market bargaining he had in mind. Even his method was that of numerical examples, in the style of Ricardo, though perhaps more painstaking in its presentation. Moreover, competition is not really highlighted as a principle, and the chief virtue in Menger's text is the way in which it brings out the significance of balancing variations in utility as a factor influencing the bargaining behaviour of buyers and sellers.¹ In his Positive Theorie des Kapitaless (1889), Böhm-Bawerk devoted several chapters to a similar treatment, expanding upon and improving in many details Menger's analysis, without adding anything essentially new to the subject.²

More than a decade passed before Menger produced another major treatise, and this time it was in response to the intensifying criticisms of Schmoller against the abstract methods of economic theory. The involuted argumentation of Menger's Untersuchungen über die Methode der Socialwissenschaften (1883) is enormously difficult to grasp in all its intended subtlety, precision and rigour. Menger does not broach the subject of competition directly, but his train of thought inevitably brought him to the problem of settling upon the appropriate "units" of analysis for economic theory.

Set alongside Schmoller's preference for relatively large social units of analysis, Menger's Untersuchungen might seem to fit the label Schumpeter has given to it, namely, Methodological Individualism. However, Menger's choice of terminology confuses the issue somewhat, in that he wanted to draw a sharp

¹See Menger's Grundsätze, chapters IV and V. The English edition is Principles of Economics, tr. J. Dingwall and B.F. Hoselitz, Free Press: Glencoe, 1950.

²E. von Böhm-Bawerk, Capital and Interest, 3 vols., tr. G.D. Huncke and H.F. Sennholz, Libertarian Press, 1959, Vol. II, pp. 205-56.

contrast between the abstract and the concrete, and to do this Menger employed the adjective individuell (to signify the historical, concrete, specific or particular) as against the adjective generell (indicating the abstract, theoretical, or typical).¹ With this set of distinctions in mind, Menger's basic purpose was to argue that if economics^{-ics} was to be an "exact" and "rigorous" science, then it must study economic phenomena in their general, rather than individual, aspects.²

It was the manner in which Menger interpreted this requirement that gave rise to the individualist label. National economies could be understood in theoretical terms, Menger asserted, only by going back to their "true elements, to the singular economies in the nation."³ But Menger did not specify exactly what those "true elements" were. He denied the charge of "Atomismus" hurled at theoretical economics by the more avid proponents of historicism,⁴ and yet the few indications he provided, to contrast his own position with that of the historicists, lent themselves to this very interpretation. For example, much emphasis is placed upon the distinction between "Privatwirtschaft" and "Volkswirtschaft,"⁵ though he never committed himself to a precise statement of the nature of the fundamental "elements" or units he had in mind. The nearest Menger came to fixing upon the individual as the "true element" of economic theory was in his first postulate for price theory: "All the economic subjects considered

¹See his Untersuchungen über die Methode der Socialwissenschaften (Leipzig, 1883) as reprinted in Vol. II of The Collected Works (ed. 1934) and translates as Problems of Economics and Sociology, by F. J. Nock, Urbana: University of Illinois Press, 1963. Key passages on terminology are found in the Untersuchungen, pp. 3-6 and in Problems, pp. 35-7.

²Menger uses the adjectives exacte and streng more or less interchangeably. "Streng" is probably best translated as "rigorous." See Untersuchungen, pp. 25-9 and Problems, pp. 50-3.

³Problems, p. 93. The original reads: "ihre wahren Elemente, auf die Singularwirtschaften im Volke" (Untersuchungen, p. 87, his emphasis).

⁴Untersuchungen, pp. 82-3 and Problems, pp. 90-1.

⁵Untersuchungen, pp. 85-9 and Problems, pp. 92-4. On p. 94 of Problems, he warns about the "confusion of individual with national economy" ("Verwechslung der Privatwirtschaft mit der Volkswirtschaft," Untersuchungen, p. 89), without clearly defining what the "individual economy" is.

here strive to protect their economic interest, fully."¹

In this great battle between the individualists and the collectivists, we see two extreme positions, being adopted initially, then being qualified in such a way that both occupied the middle-ground without settling the underlying issue as to the nature of the competitive unit of analysis, and the implications that the indeterminateness of competitive grouping would have for the status of theory.

Schumpeter has described the Methodenstreit as a history of wasted energies,² and it was thoroughly exhausted by 1900. We can assess how much the two schools - the Austrians and German historicists - had moved towards a common position, by comparing the mature and very grand syntheses of Schmoller and von Wieser, published between 1900 and 1914. In his monumental Grundriss der Allgemein Volkswirtschaftslehre (5 vols., 1900-14), Schmoller devoted a whole chapter to an appraisal of "Die wirtschaftliche Konkurrenz," emphasizing both the inevitability and diversity of economic competition.³ In spite of his undiminished loyalty to historicism, Schmoller struck a new note of compromise, especially in his treatment of price theory, so that on balance his broad account of the study of economics differed very little from that given by the Austrian theorist, Friedrich von Wieser, in his equally grand treatise, Theorie der gesellschaftlichen Wirtschaft (1914).⁴

¹Problems, p. 70, or "1) dass alle hier in Betracht kommenden wirtschaftenden Subjecte ihr ökonomisches Interesse vollständig wahrzuhehmen bestrebt sind," Untersuchungen, p. 56.

²Schumpeter, History of Economic Analysis, p. 814.

³Schmoller, Grundriss der Allgemeinen Volkswirtschaftslehre (1900-04), translated by G. Platon and L. Polack as Principes d'Economie Politique, 5 vols., Paris, 1905-08, Vol. III, Book III, ch. 2, pp. 100-140.

⁴Von Wieser's Theorie der gesellschaftlichen Wirtschaft originally appeared as Part I of Vol. I of the series Grundriss der Sozialökonomik (Tubingen, 1914, pp. 115-444), general editor M. Weber. It has been translated by A.F. Hinrichs as Social Economics, London, 1927, from which see esp. pp. 204-37.

In his earlier work from the 1880s, von Wieser had shown much originality and independence of mind, in his development of "Austrian" theory, and postulated "really free competition" in his writings, as a matter of course.¹ By 1914, he adopted a much more eclectic attitude towards the full range of meaning afforded by the concept of economic competition as part of his broadly conceived "Social Economics."

Thus, the spirited debates that raged in Germany and Austria during the 1870s and 1880s led to no sharp resolution of competitive themes, having reached a state of quiet maturity roughly similar to that attained in England, France and America at about this same time.

5. Neoclassicism in its Maturity

During the 1890s, economic thought settled down into a relatively calm and stable mould. Right up to the 1920s, there were few, if any, dramatic developments to speak of. While specialists dotted i's and crossed t's in the professional journals, increasing numbers of economists wrote their huge text-book treatises, consolidating the accomplishments of the previous decades, rather than exploring new ground. The period to 1914 was for economics, as it was in so many other fields of inquiry, the Indian Summer of the 19th century.

There are too many equally deserving writers and altogether too few really novel ideas from this lengthy phase of mature neoclassicism to warrant any attempt at a comprehensive survey of opinion. To gain an impression of the range and depth of the literature of this period, even within the narrower field of theory, one need only mention a sample of prominent names: In Great Britain: Marshall, Wicksteed, Nicholson, J.N. Keynes, and Pigou; in France, Gide, Block, Cheysson and Leroy-Beaulieu; in Italy, Pareto, Pantaleoni, and Barone; in Germany, Wagner, Conrad, Philoppovich and Bortkiewicz; in the Scandinavian countries: Wicksell, Pierson, and Cassel; and in America: Clark, Taussig and

¹Von Wieser, Die Natürliche Werth (1889), as cited from W. Smart's translation, Natural Value, London, 1893, p. 55.

Fisher, to name but a few. And to the long list of theoreticians could be added almost as many historians, institutionalists, and generally "radical" commentators of every description.

From this enormous body of economic literature extending through the 1890s up to about 1920, one could gather a fair variety of comment upon competitive themes, each individual writer bringing to the subject some subtle nuance setting him marginally apart from every one else. But there was no sustained debate, nor any fundamentally new insights brought to bear upon the subject.

If I select for special study, in the remaining pages of this chapter, the writings of one man, it is because Alfred Marshall's Principles of Economics shows mature neoclassicism to its best advantage. In his search for realism, Marshall serves nicely as a foil against which to evaluate the achievements of his more abstractly inclined colleagues, Jevons and Edgeworth, Walras and Pareto. Moreover, Marshall was consciously struggling with the idea of competition over an extended period, from the late 1870s to as late as 1919. His ever maturing attitudes to this many-sided concept provide a gauge to professional opinion at large, because Marshall truly strode with the times.

Marshall's first book, The Economics of Industry (1879), was quite faithful to the Principles of John Stuart Mill, both in literary style and in classical content. Prior to that, in 1876 he had declared himself favourable towards Mill's value theory, though he found no difficulty in reconciling this with Jevons's theory of marginal utility. The "central truth" of economics was that producers, "each governed under the sway of free competition," would set price equal to cost of production,¹ but Marshall succeeded in bridging the gap between Mill and Jevons by incorporating the concept of utility into his theory of price by giving the demand side of things more attention. All that need be said about Marshall's Economics of Industry is that he virtually equated the concept of

¹Marshall, "On Mr. Mill's Theory of Value," The Fortnightly Review, Vol. XXV, no. 112, n.s., April 1, 1876, p. 597.

normality with that of free competition, a view that he was to repudiate quite explicitly by 1890. In 1879, we find him writing these almost definitional lines:-

... That condition of a thing which would be brought about by the undisturbed action of free competition is called its Normal Condition.

... This Law of Supply may be called the Law of Normal Supply, because it refers to the results that are in the long run brought about by free competition.¹

No sooner had Marshall published his first book, he then completed and circulated in manuscript-form two papers on "Pure Theory"² which put him amongst the first generation of neoclassical theorists. Extending Mill's theory of international values and foreshadowing Edgeworth's later contract-curve analysis, Marshall was intent upon integrating algebraic with geometrical techniques. With the focus placed chiefly upon the economic calculus for its own sake, the postulate of free competition remains very much in the background in these two papers, though of course it is specified as an essential condition.³

A long stretch of time had elapsed before Marshall completed and published his magnum opus, the Principles of 1890.⁴ Obviously, Marshall's thinking on competition had undergone some substantial modifications during that lengthy interval, but it is an equally fascinating exercise to trace through the subtle shifts of emphasis that occur over the course of his 600 or more pages of text in the 1st edition, as well as to observe how Marshall fussed over and re-arranged the details of his position through the remaining seven editions of his famous

¹A. and M.P. Marshall, The Economics of Industry, London, 1879, pp. 66 and 76, their emphasis.

²"The Pure Theory of Foreign Trade" and "The Pure Theory of Domestic Values," (1879), London School of Economics Reprints, 1930. These papers had some influence and were widely cited (eg. Edgeworth in 1881, even Auspitz in 1914).

³"The Pure Theory of Domestic Values" begins:- "§1. In the present part of the treatise we are concerned with the causes which determine the relative values of commodities produced in the same country under the action of free competition," (p. 1) and on pp. 2-3 he refers again to the "central truth" he enunciated in 1876.

⁴In the many miscellaneous writings of Marshall through the 1880s, little light is shed on his change of viewpoint. See the bibliography of his works in Memorials of Alfred Marshall, ed. A.C. Pigou, London, 1925.

Principles. Fortunately, we have at our disposal Guillebaud's superbly edited variorum edition to work with,¹ and in what follows here, I shall cite his volume and page numbers, indicating which edition Marshall's cited text first appeared in, unless it was from that of 1890.

As we have already seen, the decade of the 1880s was filled with theoretical controversies which built to a crisis by the years 1889-91, bringing the status of competition into question. It should not be surprising, then, that Marshall decided to broach that subject, the status of competition, in the very first chapter of his treatise, and chose to announce the appearance of his new work by delivering his presidential address to the British Association in 1890, on the subject entitled "Some Aspects of Competition."² What is surprising is the general view on competition he put forward in that astonishing first chapter!

"The fundamental characteristic of modern industrial life is not competition, but self-reliance, independence, deliberate choice and forethought." Thus runs the marginal-page note to Marshall's Book I, Chapter I, section 4, from first edition to last.³ Marshall's subsequent train of thought in this chapter may seem strange, insofar as he wanted to replace the term, competition, by some better phraseology which would capture the essence of "modern industrial life," as if any single phrase could ever do so. In fact, Marshall eventually points out, that there is no one term adequate for that purpose (I, 9), and it becomes clear that what he really wanted to do was to take some of the semantic and terminological burden off this much overworked word, competition, and to replace it by a much richer and more diverse vocabulary.

¹Marshall, Principles of Economics (1890), Ninth (Various Edition), ed. C.W. Guillebaud, 2 vols., London: Macmillan. Vol. I is the text of the 8th ed. of 1920, while Vol. II contains Notes of collations.

²"Some Aspects of Competition," Presidential Address to section F of the British Association, reprinted in Memorials, pp. 256-91. This is a very difficult paper to summarize, since Marshall refuses to draw any major conclusions, his platform being "The abandonment of Dogma: the development of Analysis" (p. 257). Following the completion of his Principles after almost ten years work on it, this paper of 1890 can be considered a reflective afterthought, rather than as a prelude to the treatise.

³Principles, Variorum Edition, Vol. I, p. 5.

To assess the kinds of difficulties Marshall encountered in his attempts to put this decision into effect, it will be useful to bear in mind the distinction between the cognitive (i.e. descriptive) meaning of a word and its emotive (i.e. evaluative) significance. Marshall began his semantic analysis of competition in Chapter I as if the chief reason for diminishing the importance of this word was its growing cognitive irrelevance in the description of modern economic life. But shortly thereafter, the emphasis is quite decisively shifted onto moral factors. The ensuing pages of his book would reveal just how difficult a time Marshall had in trying to avoid the cognitive appeal of competition in his equilibrium analysis.

At the outset, for example, he notes that competition is only a secondary and accidental consequence of freedom, or of what he calls independence and the habit of choosing one's own course for oneself, an aspect of human behaviour which leads as much to co-operation and collective action as it does to rivalry and competitive striving (I, 5). Marshall's long list of suggested replacements for competition is very odd, but revealing, because it completely overlooks the coercive, compelling or constraining potential in competition, so vital in the scientific account of economic equilibrium.¹ This imbalance in emphasis is exemplified by his eventual choice of the phrases "Freedom of Industry and Enterprise" and the more concise "Economic Freedom" as his principal replacements, a decision which evidently he took seriously throughout the remainder of Book I, wherein he reminds the reader on several occasions of his change in terminology.²

The bulk of his semantic analysis of competition, however, was aimed

¹In Chapter I, he gives terms such as: "deliberateness," "promptness of choice and judgement," "a habit of forecasting," (I, 5-6), then "self-reliance," and "freedom of industry and enterprise," (I, 10). Of course, later Marshall made frequent appeal to the constraining aspects of competition as we shall see.

²ibid, I, 10-11. See also Appendix A (formerly part of Book I). In Book VI, he returns to this interchangeability between "competition" and "enterprise" (I, 549).

at bringing out the emotively ambivalent properties of the term. It had gathered about it an "evil savour" and had come to imply a "certain selfishness and indifference to the well-being of others."¹ The fact that, immediately after this, he alluded to the idea of "custom", as an alternative pattern of behaviour in more traditional societies, very much suggests that he was strongly influenced by the views of John Stuart Mill on this subject. Thus, he went on to maintain that competition could be both constructive and destructive, and that, compared with "energetic co-operation," even the best forms of competition were "relatively evil."²

By the 5th edition of 1907, Marshall finally settled upon the scientific position that the economist "must not decry competition in general, without analysis," but instead:-

... he is bound to retain a neutral attitude towards any particular manifestation of it until he is sure that, human nature being what it is, the restraint of competition would not be more anti-social in its working than the competition itself.³

Very subtly, then, Marshall had reversed the general presumption Mill had put in favour of competition, and so eventually reached this verdict:-

We may conclude then that the term "competition" is not well suited to describe the special characteristics of industrial life in the modern age. We need a term that does not imply any moral qualities, whether good or evil.⁴

As for the various substitutes he suggested in place of competition, Marshall was correct in identifying both freedom and enterprise, insofar as the exercise of free-will is essential to the meaning of competitive striving. What makes the study of Marshall's Principles so fascinating is the manner in which

¹ ibid, I, 6, as adapted in the 5th ed. from the 1st ed.

² ibid, I, 8-9, from the 5th ed.

³ ibid, I, 9, from the 5th ed.

⁴ ibid, I, 9, as adapted in the 5th ed. from the 1st ed.

the other side of competition, the constraining (and hence regulating and disciplining as well as coercive and compelling) side, is brought back into the picture throughout the remainder of the text.

Initially, he wanted to dispose of the word competition because its moral overtones interfered with scientific objectivity. This undesirable emotive content of the word, as he diagnosed it, did not consist in its constraining implications (which he apparently had overlooked) but in the qualities of excessive striving: zealousness, selfishness, and the outward display of any aggressive self-assertiveness. These were qualities both threatening to Marshall's own very weak disposition and sensitive temperament, and at odds with the cultural milieu of the latter half of the 19th century.

Throughout Books II and III, he did succeed in completely eliminating competition from his text,¹ though the subject-matter of these two books was such as to make this a relatively easy task. In the much larger fourth Book, on "The Agents of Production," the word begins to creep slowly back into his conscious thought-processes, and hence back into his written text.² This was to be expected, because Book IV contains some of the most colourful accounts of economic behaviour to be found in the 19th century literature, and it would have been impossible to have written such descriptive passages without somewhere referring to the ubiquitous phenomenon of competition.

I shall return presently to discuss some of the material of Book IV. All that needs to be mentioned, at this point, is that the phraseology of competition as we find it, sprinkled lightly throughout these pages, is quite natural and

¹To be precise, competition and its cognates do not appear at all in the 8th ed. text of Books II and III, though in footnotes Marshall refers to "emulation" (I, 92n1) and to "rival commodities" (I, 132n).

²Beginning with I, 209n1 and I, 214 (and even earlier, see II, 279 for variant). Book IV, Chs. VIII to XII on "Industrial Organization" are filled with graphic descriptions of competitive behaviour. For cognates of competition, see especially I, 245, 272, 290n1, 309, 312 and 315-16.

unobtrusive in its presence, a relatively inconspicuous part of Marshall's ordinary and non-technical vocabulary. When we reach Book V, which was entitled "The Theory of Equilibrium of Demand and Supply" in the 1st edition, this pattern is suddenly changed. Marshall called the theory of equilibrium the "backbone" of economics (I, 324), and we quickly discover that competition holds this skeletal framework of theoretical economics together.

In the third chapter of Book V, competition is thrust back into its former position of central importance, in the following manner:-

§4. The position then is this: we are investigating the equilibrium of normal demand and normal supply in their most general form Thus we assume that the forces of demand and supply have free play; that there is no close combination among dealers on either side, but each acts for himself, and there is much free competition; that is, buyers generally compete freely with buyers, and sellers compete freely with sellers.¹

In spite of this prominence, competition is employed only sparingly over the course of Book V, in a technically colourless and muted fashion, but in his massive final Book VI, wherein Marshall turns once more to a graphically descriptive account of economic life, competition bursts forth again, in stirring passages recalling the imagery of Book IV.²

What explains this apparent vacillation? I think we can best understand Marshall's shifting emphases (which took place very slowly and over fairly lengthy expanses of writing) by observing the kinds of verbal associations he wanted to avoid making with competition, as well as the associations he subtly introduced into his text, as his analysis moved from one context to another.

For example, in the crucial passage cited above, competition stands very near to the concept of normality, that is, by being postulated as a necessary pre-condition for "normal" supply-and-demand equilibrium. By normality, Marshall

¹ ibid., I, 341, my emphasis added.

² Actually, in the 1st ed., Book VI comprised the old Books VI and VII. These were much re-arranged and revised over subsequent editions, but as a whole Book VI of the 8th ed. stands as a fairly integral unit of similar content with its 1st ed. counterparts. For simplicity, I shall refer to all of this changing material from the concluding chapters of the Principles as "Book VI" of the 8th ed.

had always wanted to stress the idea of long-run law-like tendencies,¹ but the connection between it and competition underwent considerable change from 1879 to 1907. As we have seen, in Economics of Industry, normal was virtually defined to mean competitive,² but in the 1st edition of the Principles in 1890, Marshall wrote:-

It will be noticed that this use of the word Normal is broader than that which is often adopted. Thus is it frequently said that those results only are normal which are due to the undisturbed action of free competition. And if a short and simple account of the term must be given, this is perhaps the best. But the term has often to be applied to conditions in which perfectly free competition does not exist, and can hardly even be supposed to exist.³

By the 3rd edition of 1895, this growing impression that Marshall wanted to dissociate competitive from normal was re-inforced, when he added:-

Another misunderstanding to be guarded against arises from the notion that only those economic results are normal, which are due to the undisturbed action of free competition.⁴

And, finally, in the 5th edition of 1907, he wrote:-

Of course Normal does not mean Competitive. Market prices and Normal prices are alike brought about by a multitude of influences, of which some rest on a moral basis and some on a physical; of which some are competitive and some are not.⁵

One of the difficulties Marshall's Principles illustrates is that of precisely specifying what those "forces" or constraints are, so that a unique equilibrium result can be deduced; for, his attempted definition of normal value merely begs

¹See I, 33-4.

²See note 1, page 250 above. Guillebaud (II, 155-6) includes some passages from the 2nd ed. (1881) of the Economics of Industry which re-inforces this connection between normality and free competition.

³Variorum Edition, II, 150.

⁴ibid, I, 35, from 3rd ed., p. 106n.

⁵ibid, I, 347-8, from the 5th ed.

the question as to what the "economic forces" and "general conditions of life" are, when he wrote:-

... [Normal value] is the average value which economic forces would bring about if the general conditions of life were stationary for a run of time long enough to enable them all to work out their full effect.¹

This perplexity is best approached from the point of view of Marshall's search for realism in theory, to which I return shortly.

Alongside this early tendency to reduce the significance of competition in his theory of equilibrium, there emerges, later in his text, a counter-tendency to re-introduce the idea of competitive constraint into the picture, almost surreptitiously, by the ingenious use of another principle, that of substitution. When Marshall first identified his "law of substitution" in Chapter 3 of Book V,² it was designed as a principle concerned with rational decision-making in the logic of the economic calculus: a principle of rational choice very effectively employed with another such principle, that of complementarity. In clarifying the working of this principle of substitution, Marshall drew out not only the freeing aspects of discovering better alternatives, as part of economic rationality; he also underlined the constraining effect of substitution exerted by economic actors upon each other. Furthermore, the idea of substitution was not limited to an abstract role in Marshall's logic, but was put very much into a colourful behavioural setting which is associated increasingly with the idea of competition, the further we progress into Books V and VI.

There are so many examples with which to illustrate the foregoing statements that I can offer but a few, and emphasize how many more there are to be found in his text. The entrepreneur is said to be "ceaselessly striving so to modify his arrangements as to obtain greater results ... or, in other words, he is

¹ ibid, I, 347, from the 2nd ed.

² ibid, I, 341. From eds. 1 to 3, Marshall referred to this as the "law of substitution," but from the 4th ed. onwards changed the wording to "principle of."

ceaselessly occupied with the law of substitution."¹ In addition to this freeing aspect of striving, the principle of substitution exercises a "subduing influence," which "tempers," "controls" and "holds in check" economic actions.² The crux of the matter is that Marshall subtly interweaves the phraseology of substitution into the phraseology of competitive striving. In the modern world, he writes, there is an ever increasing tendency towards the "substitution of new things and new methods for old," and thus "direct or indirect competition" is brought to bear even upon entrenched monopolists.³ In almost the same breath, he speaks of workers being "closely pressed by competition" and their wages being "controlled by the law of substitution."⁴ Perhaps the most telling fact is that in later editions Marshall began replacing the phraseology of competitive striving for the phraseology of substitution in his revised drafts, so interchangeable had they become.⁵

Yet another notable feature of Marshall's text is the way he sets the functional contrast between substitution and complementarity alongside the behavioural contrast between competition and co-operation, blending the purely rational elements of economic logic with their behavioural counterparts.⁶

On the whole, two major conclusions can be drawn from a careful study of the text of Book V. First, even though Marshall was probably the last economist to make frequent use of the older classical phrase, "free competition,"

¹ ibid., II, 370. Another instance where Marshall clearly put the principle of substitution in a behavioural setting is this:- "The action of economic forces is largely directed by a set of men who specialise themselves in the organization of business, and through whose agency the principle to which we have given the name of the law of substitution becomes effective," (II, 427, from 3rd ed.).

² ibid., I, 386, 515; II, 694 (from 2nd ed.).

³ ibid., I, 494-5, from the 5th ed.

⁴ ibid., II, 707, from the 2nd ed.

⁵ Compare I, 599 (4th ed.) with II, 648 (2nd ed. variant), and likewise I, 618 (4th ed.) with II, 663 (1st ed.).

⁶ See esp. I, 387-91, with variants on II, 404.

he was supremely aware of the scientific importance of constraining forces. Whether he was quite consciously aware that competition was as constraining as it was freeing is a matter of interpretation, about which his full text provides numerous and varying indications. Second, however much he may have objected to competition in Book I, on moral grounds, by the end of Book V he was stuck with it once more, even if he had very nicely re-introduced the word into his vocabulary with the aid of the more scientifically "neutral" concept of substitution.

One of the chief objectives of neoclassical theorists of the 1870s and 1880s had been to demonstrate that competition was equilibrating, that is to say, that it was both necessary and sufficient to bring about a unique and stable equilibrium result. Viewed from this standpoint, Marshall's Book V is not very convincing. Competitive was distinguished from normal, and normality was defined in exceptionally fuzzy terms. There was one further difficulty which we shall now consider. Was competition equilibrating or disequilibrating in Marshall's scheme of things?

The true grandeur of Marshall's Principles - what sets it so distinctly apart from all other neoclassical texts - is to be found not in his theoretically abstract Book V, but in his magnificent fourth and sixth Books, in which the subject-matter of economics springs to life. When Schumpeter compared Walras's penchant for "scraping off everything he did not consider essential to his theoretical schema" with Marshall's penchant for "salvaging every bit of real life he could possibly leave in,"¹ it was not at all certain whether Schumpeter intended to pay Marshall a compliment or not. This is very strange, because with his own Capitalism, Socialism and Democracy (1942) Schumpeter was to imprint upon the 20th century mind a set of ideas about competition which could be described as "Marshallian" just as validly as "Schumpeterian."²

¹Schumpeter, History of Economic Analysis, p. 974.

²Schumpeter, Capitalism, Socialism and Democracy (1942), 3rd ed., 1950 as reprinted, New York: Harper Torchbooks, 1962. Schumpeter's own contribution is treated in Chapter VII, and his views on Marshall are assessed later in this present section.

The dominant theme throughout most of Book IV, beginning with Chapter VI (of the 8th edition) is the quality of incessant and rapid change in the conditions of economic life in the modern era. "New" is a very common adjective in these pages:- "everyone feels free to make a new departure," "the progress and diffusion of knowledge are constantly leading to the adoption of new processes and new machinery," "new wants" are developed, and so on.¹ In Book IV, Marshall also introduced the idea of the "struggle for survival" and what he called the "profound analogies" between economic and biological development.² Sprinkled throughout his vigorous imagery³ are a fair number of incidental references to competition, but on the whole Marshall's use of competitive phraseology in Book IV was still fairly subdued.

After the relatively⁴ dry technical discussion of Book V, all the individual elements of his preceding text are brought together in Book VI for a grand concluding synthesis which expresses all the dynamism and diversity of 19th century industrial progress. What is more important is that now Marshall begins to deploy the phraseology of competition in a much less subdued and inhibited manner. Within the space of fifty pages or so, he specifically describes the principle of substitution as "one form of competition,"⁵ recalls that competition is synonymous with "economic freedom and enterprise,"⁶ closely

¹ Marshall, Principles, Variorum Edition, I, 213, 222-3, 271 and passim.

² ibid, I, 240-2.

³ By vigorous imagery, I mean phrases such as "the modern era of rapid changes" (I, 213) punctuated by "invention," "innovation" and "progress and diffusion of knowledge" in a general climate in which "creative genius," the "power of imitation" and the "ready versatility of the ablest" constitute a "stimulus to energy and enterprise," and so on (I, 221-3, 270-1, 285-6, 305 (3rd ed.), 315-6).

⁴ I say "relatively" - that is in comparison with Books IV and VI. Even Marshall's Book V is brimming over with vitality, judged by neoclassical standards.

⁵ ibid, I, 540, from the 3rd ed.

⁶ ibid, I, 549; see also II, 616.

associates the "action of competition" with the "survival in the struggle for existence,"¹ and goes on to say that the law of substitution is itself "nothing more than a special and limited application of the law of the survival of the fittest."²

This last association brings him immediately to one of the most fundamental distinctions that can be made in regard to economic behaviour.

... we may divide employers and other undertakers into two classes, those who open out new and improved methods of business, and those who follow beaten tracks.³

Here, in a nutshell, Marshall captured the distinction between (1) behaviour which initiates changes and thus alters the constraints defining an equilibrium, and (2) behaviour which is in response to those changes and thus tends to restore an equilibrium situation. The former is disequilibrating, the latter equilibrating. Nowhere does Marshall quite specifically state that competition embraces both these types of behaviour, but within the next four or five pages immediately following the text cited above, he illustrates the differences between those who "pioneer new paths" (I, 598) and those who merely "copy" the successes of others, referring on numerous occasions, in these pages, to competition.

Just as with most other classical and neoclassical theorists, Marshall's balance of usage of competitive phraseology cleared tips in the direction of equilibrating tendencies, but Marshall very often came close to suggesting the disequilibrating potential of competition, without actually saying so.⁴ Had he been more fully aware of this duality, he might have better

¹ibid, I, 561.

²ibid, I, 596-7. Compare also I, 602 with II, 650 where the words "struggle for survival" replaced the words "law of substitution" in the 4th ed.

³ibid, I, 597, from the 2nd ed.

⁴Even though Marshall frequently uses terms such as "innovation," "invention," "powers of initiation," and so on, to capture the meaning of disequilibrating activity, this phrasing is rarely closely linked to competition. Perhaps the best indication is given when he writes: "The motive force is the competition of undertakers: each one tries every opening," etc. (I, 618).

appreciated the nature of the problem he ^{was} grappling with, in trying to define the supply curve for the equilibrium analysis of Book V.

To derive a uniquely defined equilibrium state of affairs, one must settle upon a unique set of fixed or rigidly "given" constraints which reduce all possibilities down to one and only one possibility - at least, this seems to be the most plausible way of interpreting what equilibrium means. However, Marshall was so intent upon studying economic behaviour (not merely the logic of possible choice) in realistic terms, that his supply curve was described in unstable terms, so as to embrace the minor variations in knowledge that entrepreneurs would acquire as they expanded the scale of their operations.¹ As a description of reality, Marshall's comments on marginal improvements arising out of "adaptations of existing ideas" (in contrast to "substantive new inventions") undoubtedly possessed much validity, but all the same, Marshall seemed unaware that this was basically a terminological fudge, not a genuine and sharp distinction, but only a matter of degree; and that to allow the constraint of knowledge to vary was tantamount to destroying one supply curve and creating another.

Marshall was quite correct in his insistence that entrepreneurs were "ceaselessly striving" to find more efficient methods and that "the motive force is the competition of undertakers: each one tries every opening," etc.² Without fully realizing it, he had given as convincing an account of why competition was not law-like in its tendencies as one will find throughout the literature of the 19th century.

To close this survey of Marshall's text, a few words on the normative status of competition versus monopoly are in order. Schumpeter, in a slashing attack upon a so-called "Marshall-Wicksell" analysis of welfare, set forth in his Capitalism, Socialism and Democracy, attributed to Marshall the view that

¹ ibid., I, 460 (4th ed.), 462 (2nd ed.), 497-8 and 809.

² ibid., I, 618 and II, 370.

"competitive industry tends to produce a state of maximum satisfaction of wants."¹ Only by a very tenuous and indirect inference could this be said to be true, for Marshall linked the doctrine of the maximum satisfaction of wants to equilibrium, and not directly to the concept of competition itself, a concept which had been linked rather tenuously to his theory of equilibrium.²

Even if Marshall's text is somewhat imprecise and lacking in clarity on this matter, Schumpeter really should have known better, especially in writing a book which drew heavily upon Marshall's inspiration. The doctrine of maximum satisfaction is heavily qualified by Marshall in a manner which pointed towards Schumpeter's own views on dynamics, and, even more so, qualified with respect to the intricate contrasts between competition and monopoly.³ Thus, Marshall enunciates the "Schumpeterian" theme that large quasi-monopolies may, in the long run, prove more efficient and more consistent with public welfare, because they are able to spend more resources on improving new methods of production.⁴

There are no typical neoclassical writers who, by themselves, sum up all that mature neoclassicism had to offer. Marshall was selected for special study here, because his Principles exemplifies how well abstract theory could be adapted and applied to more realistic inquiries. In this way, his example shows how neoclassicism was gradually moving away from the older tradition which sought fixed and rigid empirical "laws" or abstract "theories" of behaviour, towards a more professionally flexible tradition which sought to develop useful techniques of analysis, whereby economic "theory" was to become less and less a set of

¹Schumpeter, Capitalism, Socialism and Democracy, ed. 1962, p. 77n5. See also pp. 77-8.

²Principles, I, 471 where the equilibrium of demand and supply is said to be "a position of maximum satisfaction in this limited sense, that the aggregate satisfaction of the two parties concerned increases until that position is reached." Prior to that, the competitive postulate had been set forth for "the equilibrium of normal demand and normal supply in their most general form," (I, 340).

³See esp. I, 502 as well as Marshall's chapter on monopolies (I, 477-503).

⁴ibid., I, 484. In his History of Economic Analysis, pp. 985-6, Schumpeter tempered his comments on Marshall's work, but was still rather begrudging in his praise of Marshall, a fact which is difficult to understand, given the affinities between them.

truth-claims or propositions, but more and more a "box of tools" (to borrow Joan Robinson's phrase) with which to analyze concrete circumstances. Of course, Marshall did not abandon the scientific tradition of constructing theories; he provided a bridge between one tradition and another.¹ And, this forward-looking tendency was paralleled by a flexible view of competition which clearly foresaw the so-called "monopolistic competition revolution" of the 20th century.² By 1919, Marshall finally published his major empirical survey of Western economies, Industry and Trade, one of the key themes of which is the "interpermeation" of monopoly and competition in modern industry.³

Ingenious in its development of techniques, Marshall's theoretical schema does not hang together very tightly or convincingly as a logical unity. But logical rigour (especially in the mathematical field) brought with it mixed blessings. The work of Vilfredo Pareto illustrates another trend in mature neoclassical thought, one which made skilful use of mathematical logic to the understanding of rational economic calculation, while, at the same time, reducing the word competition to a technically obscure component of the economist's vocabulary.

The triumph of Pareto's Manuale di Economia Politica (1906), and of the concept of "Pareto Optimality" in 20th century welfare economics, is really a triumph for Edgeworth over Walras. Even though Pareto succeeded Walras at the University of Lausanne in 1893, it is hardly justifiable to speak of Pareto and Walras in the same breath as if they constituted a "school." Even if his earlier Cours d'Economie Politique (1896-97) reflects Walras's influence, Pareto's most

¹For example, Marshall's use of the phrase, "law of diminishing returns," merely served as a taxonomy for classifying increasing, constant and decreasing costs, hardly a "law" in the classical sense. In the 4th ed., he decided to speak of the "principle," rather than the "law," of substitution.

²Pigou had employed the phrase, "monopolistic competition," in his Wealth and Welfare, London, 1912, p. 165, and of course there was nothing essentially new about the idea in the latter stages of the neoclassical period (eg. both Sidgwick and Wicksteed spent a good deal of time on the "imperfections" of knowledge and the effects they had on the results of competition). Unfortunately, space prevents me from surveying this material.

³Marshall, Industry and Trade, London, 1919, pp. 397 and 399.

original and characteristic analysis, presented in the Manuale, does not attempt to carry forward general equilibrium theory, nor does it attempt to construct anything remotely like Walras's dynamics of tâtonnement, but confines itself to static partial equilibrium analysis, based upon the inspiration of Edgeworth's contract-curve technique.

Moreover, we can perceive how much Pareto was moving away from the tradition of "theory" into the tradition of "technique" by observing how aridly technical an account he gives of the role of competition. Like Edgeworth, Pareto was interested only in the properties of equilibrium itself, and not in how it arises. Equilibrium served, in effect, to define various ideal results and little else.

Thus, in the pages of his Manuale, the behavioural content of competition, if not virtually eliminated, is kept very much in the background. Officially, for the special technical purposes of theory, the meaning of competition is represented by the contrast between what he calls Type I and Type II situations. According to Pareto, Type I situations involve those cases where individual buyers and sellers accept as given a "certain state or condition of the market," each trying to maximise his utility without deliberating seeking to modify that state of affairs (though Pareto observes parenthetically that each individual's actions will nevertheless alter the situation), whereas in Type II cases, buyers and sellers consciously aim to modify the conditions of the market "in order to gain an advantage therefrom or for any other purpose."¹

If this contrast serves to distinguish anything, it is between two kinds of behavioural dispositions, that of active and aggressive initiative, with passive conformity to accepted standards. And yet, Pareto seizes upon this distinction to portray competition as an equilibrating tendency arising from

¹Pareto, Manual of Political Economy, tr. A.S. Schwier, London: Macmillan, 1972, pp. 114-16. This English translation is based on the French edition, 1927.

passive response to external forces and nothing else:- "Type I is found where there is competition ... and is the more pure as competition is the more widespread and the more perfect," while "Type II is observed where competition does not exist," three instances being listed as examples: engrossment, monopoly and collusion.¹

Pareto was as much a sociologist as an economist, and one might have expected him to have been very alive to all the subtle behavioural and institutional nuances of meaning implied by the common usage of the word competition. If so, he does little to confirm this expectation in his massive treatise, The Mind and Society (1916), wherein once more competition is presented in its technically abstruse formulation.²

In this way, Pareto illustrated those two parallel trends which were to become so much more pronounced during the latter half of the 20th century:- the transformation of economic theory into a mathematical calculus of rational choice, devoid of behavioural explanation; and the metamorphosis of the word competition, away from being a term to describe market behaviour, into a technical term indicating the mathematically convenient condition that the set of equilibrium prices of an economy could be treated as "given."

¹ibid, pp. 116-17. I should add that in the one or two sections with suggestive titles (eg. "Successive Positions of Equilibrium," p. 168, and p. 142 on "Stable" and "Unstable Equilibrium"), Pareto does little to develop a dynamic theory to show how equilibrium arises, nor does he indicate how equilibrium prices get to be "given" in the first place, throughout his static analysis.

²Pareto, The Mind and Society: A Treatise on General Sociology (1916), 2 vols., tr. A. Bongiorno and A. Livingston, New York: Dover, 1963, Vol. II, pp. 1466-68, where he merely cites his earlier work.

Chapter VII

THE TWENTIETH CENTURY

1. From "Free" to "Perfect" and "Monopolistic" Competition

In this concluding chapter, I do not pretend to offer anything like a comprehensive survey of the progress and development of competitive theory during the present century. There are far too many contrasting schools of thought, developing side by side, each offering minor variations upon common and familiar themes, to make such a survey feasible in the space allotted here.

All that I propose to do is to select a small number of writings which, each in their own way, serve to illustrate the working through, to 20th century contexts, of the various key themes which I identified at the outset of this thesis. And, in the light of these more recent debates, I shall try to resolve those fundamental themes in the final section of this chapter.

If there is any one predominant message to be conveyed throughout this chapter, it is quite simply that economic competition, in the broadest sense, is not the same thing as the technical concept of perfect competition. What is more important, it is by no means clear that the technical notion of perfect competition captures very much of the essential meaning of the broader notion. Why this is so should be fairly obvious by now, and if not, it will become so, during the course of the remainder of this history.

What is not immediately apparent is the present scientific status of the theory of perfect competition. The growing divergence between contemporary economic conditions and the very restrictive conditions postulated for perfect competition has rendered that theory increasingly precarious. Yet, in spite of all criticisms and acknowledged shortcomings, that theory has seemingly survived, and still remains the centerpiece of much current economic analysis, still occupying a major part of most introductory textbooks to the subject.

To arrive at a satisfactory appraisal of the theory of perfect competition, we must keep firmly in mind that the judgements we make about that theory are not necessarily the same as the judgements we make about the status of the broader concept of economic competition in general, nor about the status of equilibrium as an analytical concept. Indeed, one of the underlying purposes of this history is to support the following proposition: Even though the broad and common-sense idea of economic competition gave rise to the scientific study of equilibrium by being slowly whittled down into the fictional idea of a sort of "perfect" type of competition, these three distinct sets of ideas (1. competition in general, 2. perfect competition, and 3. economic equilibrium) should now be quite deliberately set apart from one another and appraised on their own. In the pages to follow, I shall attempt to show how and why this should be done.

The onset of the theories of imperfect and monopolistic competition in the 1920s and 1930s provides a good starting point for this exercise. To begin, we should recall that the phrase, perfect competition, drifted into usage over a very long period of time. The family of cognate words stemming from the verb and adjective, perfect, or in French, parfait and perfectionner, have just as ancient a history in economic thought as does the family for competition. As early as 1615, we find Montchrétien referring to "la perfection de tous arts" and to competition in the same passage.¹ Here, perfection meant improvement or technical progress, and this was a very familiar expression through the 17th and 18th centuries, Hume's Political Discourses of 1752 providing as good an example as any of how the phraseology of perfection was set alongside that of "imitation" and "emulation."²

¹The relevant texts from Montchrétien are cited above, Chapter I, section 3.

²See Hume's essay, "Of Commerce," from his Political Discourses (1752), as reprinted in the Writings on Economics, ed. E. Rotwein, London: Thos. Nelson, 1955, especially p. 14.

However, during the years of the physiocratic movement, the adjective, parfait, came to mean something else, more like the adjectives, "absolu," "idéal," or "complèt," signifying the absence of any undesirable or imperfect condition. Thus, Adam Smith adopted the phraseology of "perfect liberty" and even "perfectly free competition" when he summarized the physiocrats' doctrine, though he himself preferred the terms "natural liberty" and "free competition," and the latter of these was retained throughout the classical literature of the first half of the 19th century, as the chief technical phrase indicating a special kind of competition postulated for economic theory.

A notable shift in emphasis took place during the latter half of the 19th century, away from "free" to the qualifying adjective, "perfect," as the scientific exigencies, brought forward by neoclassicism, required a connotation of constraint in the building of determinate or closed models of equilibrium. Of course, in neoclassical theory, the idea of freedom was still retained in the form of "perfectly free" entry into and exit out of markets, and the adjective, perfect was not always placed alongside the noun, competition, but was used to modify such other concepts as mobility, knowledge, product homogeneity and divisibility. Thus, the actual occurrence of the phrase, "perfect competition," was rather sporadic during the 19th century, even though virtually all of the crucial elements of what was later to be called the theory of perfect competition were first enunciated during this period.¹

This pattern of development in linguistic usage presents us with a delightful irony when we compare the conscious objectives of theoreticians in the 1930s, propounding their alternative models of imperfect and monopolistic

¹In 1837, W.F. Lloyd made a casual reference to "the supposition of competition being perfect," (see his Lecture on Rent, London, 1837, p. 104) which happens to be the earliest occasion on which the adjective is used to modify competition and not freedom or equality, at least, the earliest that I have so far discovered in my researches. Of course, Lloyd was reflecting the influence of Senior's Outline of 1836, and obviously no great importance attaches to his subtle shift in emphasis. Only by the 1880s were people such as Henry Sidgwick and Gen. F. A. Walker using the phrase "perfect competition" with any regularity.

competition, with the long-run results their efforts had. In 1921, Frank Knight published what was to prove a formidable influence on future developments in micro-economic theory, namely, his Risk, Uncertainty and Profit. This work will be dealt with more fully later in this section. All that need be said now is that Knight highlighted the severely abstract character of perfect competition in such a way that led other theorists to hunt for more plausibly realistic models of market behaviour.

The new initiatives taken in that direction began to appear in print by the late 1920s,¹ and already by 1933 a new plateau of economic analysis had been reached with the simultaneous publication of Joan Robinson's Economics of Imperfect Competition and E.H. Chamberlin's Theory of Monopolistic Competition. Now, both Chamberlin and Robinson had wanted to remove the singular and ideal case of perfect competition from its long acknowledged position of prominence, and to replace it either with alternative models of market behaviour and pricing or with alternative techniques of analysis which blended the concepts of competition and monopoly.²

In order to carry out this revision of micro-economic theory, Chamberlin, Robinson and their contemporaries had to specify more precisely what the model of perfect competition itself entailed, so that a proper contrast could

¹Key articles were P. Sraffa's "The Laws of Returns under Competitive Conditions," Economic Journal, Vol. XXXVI, Dec. 1926, pp. 535-550, and A.A. Young's "Increasing Returns and Economic Progress," Economic Journal, Vol. XXXVIII, Dec. 1928, pp. 527-42, with a steady stream of papers in this and other journals in the next four or five years. One might also mention here such works as F. Zeuthen's Problems of Monopoly and Economic Warfare, London, 1930, and the numerous writings of H. von Stackelberg which began to appear in the early 1930s. The list of contributors to this flourishing literature is an illustrious one, including R.G.D. Allen, A.L. Bowley, C.D. Edwards, R.F. Harrod, J.R. Hicks, H. Hotelling, R.F. Kahn, N. Kaldor, A.P. Lerner, E.S. Mason, E.A.G. Robinson and G.F. Shove, to name but a few! With regret, I must say that space has prevented me from delving into the many details of debate and of analytical advance that marks this period out as a truly "neo-neoclassical" era.

²Chamberlin made a great ado about "differentiating" his theory from Robinson's, and of course there are some genuine differences (see Chamberlin's Theory of Monopolistic Competition, 8th ed., Cambridge, Mass.: Harvard University Press, 1960, Ch. IX and App. H), but in the broad sweep of history these differences have come to seem rather less significant than they did in the 1930s.

be drawn with the newer models and concepts. In the process, they constructed what was, in effect, a "neo-neoclassical" synthesis: an elegant reformulation of the older theory of perfect competition. From this literature of the late 1920s and early 1930s, there had finally emerged what is now recognized as the so-called theory of the firm, that is, an account of cost and revenue functions pertaining not to an entire market but to a single production unit.

Granted, we can identify and isolate many of the fragments of this body of economic theory in the earlier writings of such people as Cournot, Mangoldt and Marshall, but throughout the 19th century these elements of the theory of the firm - cost curves, demand functions, returns to scale, and so on - were still very much fragments only. Thus, the irony is that those who most wanted to supplant perfect competition with other models, succeeded in providing us with what is now generally regarded as "the" neoclassical theory of perfect competition, a theory which in fact they were merely re-interpreting for largely critical reasons.

The evolving pattern of economic thought in the 1920s and 1930s reveals an intensifying of three trends which have already been identified in the preceding chapters: (1) the tendency to reduce the meaning of competition to a technically (i.e. mathematically) convenient condition, almost bereft of behavioural content; (2) the growing resort to, and dependence upon, the alleged powers of "abstraction" to ensure the logical rigour of theoretical inferences; and (3) the tendency to separate analytical technique from theoretical assertion.

To see how these tendencies evolved during the first half of the 20th century, it will be useful to start as far back as 1906 with H.L. Moore's paper, entitled "Paradoxes of Competition," which appeared in the Quarterly Journal of Economics. Even though Moore's "paradoxes" may not seem quite so paradoxical today as they did to him in 1906, Moore nevertheless touched upon two very interesting issues. He begins by noting that:-

Perfect competition is the fundamental hypothesis of economics in the sense that perfect competition is postulated in nearly every argument as to economic equilibrium.¹

He then quickly proceeds to the crux of the matter:-

In what respect is the idea of competition changed when the modifiers 'perfect,' 'unlimited,' 'indefinite,' 'free,' and 'pure' are added?²

As it happens, Moore's chief point about terminology rested upon a mis-reading of Cournot's Recherches, in that Moore overlooked the fact that Cournot's model of duopoly was not intended to be a case of perfect or "unlimited" competition, since the latter required large numbers on both sides of the market. Even so, Moore's relatively trivial message - that the conclusions one derives from a theory depend upon the initial premises assumed - led him on to a more significant stage of argumentation. Dissatisfied with the vague meaning commonly attributed to this "fundamental hypothesis" of perfect competition, Moore went on to indicate what he thought was the "full meaning" of the hypothesis by listing five defining conditions, set forth in a very concise manner.³

Moore's choice of defining conditions is instructive and revealing in itself, especially insofar as it stresses the inferential nature of the infinite-elasticity condition, derived from the separate conditions of large numbers and individual powerlessness to influence price.⁴ Equally significant is the very procedure Moore decided to follow. Having suggested that there were many possible types of competitive market exchange in general, Moore was intent upon

¹H.L. Moore, "Paradoxes of Competition," Quarterly Journal of Economics, Vol. XX, Feb. 1906, p. 211.

²ibid, p. 211.

³ibid, pp. 213-14.

⁴His first two items list the conditions of price uniformity and profit maximization. Conditions III, IV and V are stated in such a way as to create doubts about the distinction between premise and consequence. "III. The influence of the product of any one producer upon the price per unit of the total product is negligible. IV. The output of any one producer is negligible as compared with the total output. V. Each producer orders the amount of his output without regard to the effect of his act upon the conduct of his competitors. Where III and IV coexist, V is a simple corollary," (ibid, p. 214). The proper sequence to be established would seem to me to be something more like IV to V and then III.

pinning down the precise meaning of the very special case of perfect competition, from which precise conclusions could be drawn. In effect, Moore had set in motion the practice which would eventually become known as "enumerating the assumptions of the model."

From Moore's paper of 1906, let us jump directly to Knight's Risk, Uncertainty and Profit of 1921, a work which continued Moore's procedure by extending the list of defining conditions to eleven.¹ Knight believed the classical and neoclassical economists of the 19th century to have been at fault for not making their assumptions explicit enough,² and his own formulation was surely the most comprehensive, up to that date. In fact, one of Knight's principal aims was to show just how very abstruse the technical notion of a perfect form of competition was. Quite candidly, he described his list of conditions as a "formidable array" of "artificial abstractions" (p. 81), his method as that of "heroic abstraction," (p. 76) and what he had assumed for the model as "drastic," (p. 197).

However, having made these admissions, Knight does not indicate very clearly what status he wished to attribute to this model of perfection. On the normative side, for example, he evidently favoured a "laissez-faire" approach to economic policy, as outlined in his two concluding chapters. Yet, the model of perfect competition was not necessarily construed as the answer to any economic problems; for, having examined the possibility of increasing returns to scale, Knight ended on a somewhat dubious note:-

... There does seem to be a certain Hegelian self-contradiction in the idea of theoretically perfect competition after all. ... it has seemed worth while to point out, in connection with the discussion of an ideal system of perfect competition, that such a system is inherently self-defeating and could not exist in the real world.³

¹ Knight, Risk, Uncertainty and Profit (1921), re-issued by the London School of Economics, 1933, pp. 76-81.

² ibid., pp. 18 and 51-2.

³ ibid., p. 193.

The general drift of Knight's argument seemed to point in the direction of the need for a more "effective" kind of competitive organization of industry, capable of practical realization, such as J.M. Clark was later to try to enunciate.¹ However, this way of interpreting Knight's case is not quite satisfactory, and we soon see how ambiguous is the status he attached to perfect competition when we examine the more scientific aspects of his reasoning, both in its logical and empirical respects.

First, as to the logical, Knight's methodology is reminiscent of Walras's. Knight believed that all one need do was to render one's assumptions as explicit as possible to ensure the logical "rigour" of the model. The trouble was that his choice of assumptions pointed to the equally important need to ensure the conceivability (as well as the internal consistency) of the assumptions set forth. For example, his assumptions 1 and 2 are very vague statements about "normal human beings" and their "rational" behaviour, as if these phrases possessed any scientifically precise implications, while the third assumption postulates that each individual controls the exercise of his own free will, but that no individual is "constrained" by any other individual or by society in general.² The fourth and fifth assumptions introduce very problematic phrases, crying out for further specification of their meaning and conceivability: phrases such as "perfect," "costless" and "instantaneous" mobility or adjustment of resources with "complete absence of physical obstacles," as well as "perfect, continuous, costless inter-communication." But it is extremely difficult to conceive what these phrases could possibly mean, especially so, when even Knight himself observed later in his text that: (1) in a world with "costless mobility" (if such a world can be imagined), there would be "no need for productive effort," and (2) that, as regards "perfect knowledge," uncertainty is "one of the

¹J.M. Clark, "Towards a Concept of Workable Competition," American Economic Review, Vol. XXX, June 1940, pp. 241-56, presented at greater length in his book, Competition as a Dynamic Process, Washington: Brookings Institution, 1959.

²Knight, op. cit., pp. 76-77.

fundamental facts of life."¹

To be sure, Knight admitted how "remote" these conditions were from real life, but he thought that the method of setting out such assumptions was scientifically valid, insofar as they could be employed to deduce inferences about an "imaginary society."² Whether this latter assertion was correct or not, Knight went on to complicate an already complicated argument by insisting further that his assumptions were "approximations" to reality, that is, "idealizations or purifications of tendencies which hold good more or less in reality," (p. 79) and were thus "divergencies in degree only, from real life," (p. 174). This shifted the emphasis away from logical rigour to empirical relevance, in a manner that Knight never satisfactorily explained. And, there is a certain casualness with which he states that most of his simplifying assumptions can be somehow "dropped" without destroying the logical rigour of his theory (p. 95).

Ostensibly, Knight's main purpose in writing Risk, Uncertainty and Profit was to put forward a new theory of profit, stressing the dynamic uncertainties of entrepreneurial behaviour. Here, Knight's reasoning was at its best, and did much to stimulate further thought along dynamic lines, as we shall see in the next section. But again, it is ironic that his attempt to drive home the utterly abstruse nature of perfect competition had something of the opposite effect on subsequent theoretical work. For, his account of the nature and role of the "abstract method" led to a rather far-fetched interpretation of just what that method could properly and validly accomplish.

For example, we can sense this influence in the work of Chamberlin, who in his Theory of Monopolistic Competition almost went so far as to suggest that the process of abstract reasoning was more a matter of arbitrary convenience than of logical rigour:-

¹ ibid, pp. 343 and 347.

² ibid, p. 76.

... Perfect competition may imply, for instance, an absence of friction in the sense of an ideal fluidity or mobility of factors such that adjustments to changing conditions which actually involve time are accomplished instantaneously in theory. It may imply perfect knowledge of the future and the consequent absence of uncertainty. It may involve such further "perfection" as the particular theorist finds convenient and useful to his problem.¹

In this passage, we see the "abstract method" running out of control, allowing not only the use of virtually meaningless phrases, but also outright contradictions as part of the process of constructing theory.²

If that judgement seems a bit unfair, then we should quickly recall that, in this general intellectual climate of abstraction, the economic literature of the late 1920s and early 1930s produced some of the most elegant and valuable advances in technique that the 20th century can boast. Much of our present-day analysis still derives essentially from this period, when such things as the production function and related cost curves were being formulated. And, writing in this flourishing atmosphere, Joan Robinson summed up the growing separation of analytical technique from behavioural theory when she wrote, in her Economics of Imperfect Competition of 1933:-

The technique set out in this book is a technique for studying equilibrium positions. No reference is made to the effects of the passage of time. Short-period and long-period equilibria are introduced into the argument to illustrate various technical devices, but no study is made of the process of moving from one position of equilibrium to another.³

Thus, Robinson was ~~was~~ reflecting Edgeworth's view of the matter.

Chamberlin, on the other hand, wanted to maintain some semblance of dynamic proof, though the explicitly dynamic content in his demonstrations was in fact quite

¹Chamberlin, op. cit., p. 6.

²For example, "perfect knowledge of the future" is very difficult to interpret, especially when economic theory treats of rational decision-making behaviour, which evidently influences what happens in the future. How can adjustments that "actually involve time" (as indeed all adjustments must do) be spoken of as if they were "accomplished instantaneously"? And, if all motion entails an expenditure (or transformation) of energy, how can mobility be "perfect" or "costless"?

³Joan Robinson, The Economics of Imperfect Competition (1933), 2nd ed., London: ^aMcMillan, 1965, p. 16. The text of this edition is a reprint from the first.

minimal and quite unconvincing.¹ Frank Knight, however, had already sided with Edgeworth when he wrote:-

The conditions of equilibrium we can formulate; the actual course of the events which are to bring about these conditions or the length of time they will occupy are probably matters of pure and unfruitful speculation.
...

And, what is more, Knight gave expression to the Edgeworthian belief that we can have our cake, theoretically speaking, and eat it too, when he continued thus:-

... It is quite unnecessary to believe that there will be any progress toward equilibrium, and it goes without saying that the failure of such progress to occur militates against neither the logical soundness nor the practical utility of the theory itself.²

Several of the parallel tendencies which I have repeatedly drawn attention to over the course of this narrative, parallel tendencies which in fact reflected and re-inforced one another, finally came to a head in the year 1934. With the growth of mathematical economics, static considerations constantly pushed into the background the more complex issues of dynamics, and with this came the emphasis upon equilibrium positions or situations in preference to equilibrating paths or processes, as the central concern of economic analysis. This much was quite reasonable, insofar as economic theory about behaviour was being transformed into mere techniques for studying possible alternative arrangements of production and distribution.

The concept and the phrase, competition, should have been gradually eliminated, dispensed with, as part of this refinement of economic analysis into mathematical models of equilibrium.³ The force of tradition dictated that the term remain, to carry along with it older behavioural connotations which would

¹See, for example, Chamberlin, op. cit., pp. 12-20.

²Knight, op. cit., p. 168.

³Though, as I argue in section 5 to follow, competition shall always remain a vital concept in our understanding of actual economic behaviour, and so of course should be retained in applied economic analysis.

give the study of equilibrium a "theoretical," not merely an analytical, character, that is, to preserve the impression that "theories" about behaviour were still being constructed and rigorously demonstrated. That this latter idea was only a belief, not a reality, can be seen by the manner in which competition was itself transformed into a technically abstruse term, having virtually nothing to do with economic behaviour as such.

From the very beginning of economic theory, the phrase "more competition" was often meant to imply "more competitors," and the condition of large numbers was taken to measure the degree or intensity of competition. From this large-numbers condition arose the idea that no individual trader could significantly influence the general pattern of trading in any market, whence came the invalid inference that each trader ^{by himself} would feel "powerless" to influence events and therefore ^{would} passively accept the ruling price of the market as given. Eventually, such reasoning led to the more elaborate concept of the infinitely elastic demand constraint facing individual sellers. And, as the requirements of the mathematical method grew more rigorous, the phrase "perfect competition" began to connote this demand constraint alone, more than any specified pattern of market behaviour.

Following quickly upon the appearance of the two classic textbooks of 1933 by Chamberlin and Robinson, something of a climax was reached in 1934, when Joan Robinson published an article entitled, "What is Perfect Competition?" She began immediately by answering the question of her title:-

What do we mean by "perfect competition?" This phrase is made to cover so many separable ideas, and is used in so many distinct senses, that it has become almost valueless as a means of communication. It seems best therefore to begin with a definition. By perfect competition, I propose to mean a state of affairs in which the demand for the output of an individual is perfectly elastic.¹

¹Joan Robinson, "What is Perfect Competition?" Quarterly Journal of Economics, Vol. XLIX, Nov. 1934, p. 104, my emphasis added.

In 1934, this was not a startlingly new suggestion: it only made very explicit what had been more or less implied in much of the literature of the previous few years.¹ Accordingly, the condition of infinite elasticity was not considered to be an inference drawn from the hypothesis of perfect competition. It had become part - a crucial part - of the very meaning of the phrase itself. To this day, perfect competition is quite often defined by the condition of infinite elasticity, or by some nearly equivalent statement, in most textbooks on pure theory.²

In 1753, the principle of competition had been proclaimed in the pages of the Encyclopédie as "le plus actif principe de l'économie." By the 19th century, it had become for classical economics the veritable "law of gravitation" governing the economic universe. After a century or so of technical attrition, the scientific concept of "perfect" competition had been reduced in stature to a mathematical property of the demand curve. From a principle of economic freedom, it had been transformed into a technically abstruse constraint, indicating that the individual demand curve must lie perfectly flat on the text-book writer's page.

As important as the concept of elasticity is for economic analysis, this decision to define a perfect type of competition in terms of an infinitely elastic demand curve was ill-conceived for several reasons, though once again we could say that, at the time, it served to retain a sense of continuity of thought in the transition from economic theory to economic analysis.

For one thing, this "official" definition did not necessarily remove old connotations from the vaguer and more all-encompassing meaning of competition.

¹In 1933, Robinson had written virtually the same definition: "Perfect competition prevails when the demand for the output of each producer is perfectly elastic," Economics of Imperfect Competition, p. 18.

²A few examples are: J.M. Henderson and R.E. Quandt, Microeconomic Theory: A Mathematical Approach, 2nd ed., New York: McGraw-Hill, 1971, p. 67; G.C. Archibald and R.G. Lipsey, An Introduction to a Mathematical Treatment of Economics, 2nd ed., London: Weidenfeld and Nicolson, 1973, p. 180; F.H. Hahn and K.J. Arrow, General Competitive Analysis, Edinburgh: Oliver and Boyd, 1971, p. 107; and T. Rader, The Theory of General Economic Equilibrium, New York and London: Academic Press, 1972, p. 95.

Many of the previous associations - such as large-numbers, product homogeneity, free entry, and so on - still stood out in the analyst's mind as part of the very meaning of perfect competition. But, infinitely elastic demand, interpreted as the seller's disposition to accept a single ruling price as "given," is best understood as an equilibrium result, a condition to be achieved only when equilibrium is realized. By defining perfect competition in terms of a result, rather than in terms of a set of behavioural prerequisites, theorists unconsciously created the false impression that the hypothesis that large numbers would yield infinite elasticity was true by definition, and hence not in need of being demonstrated as a logical inference. In short, this "official" definition fudged the vital distinction between the prerequisites or premises upon which a theory is built, and the conclusions or consequences that are drawn from those premises. To some extent, this error has been recognized within the past few decades.¹

However, the more objectionable aspect of this definition was not a purely logical one, but a semantic problem: the appropriateness of associating the phrase, "perfect competition," with the technical condition of an infinitely elastic demand constraint. Some people might argue that we are quite free to define technical terms as we wish, and all that really matters is that our chosen definitions be set forth explicitly for all to see. This is not entirely true. Not only must definitions be designed to be consistent with one another, and be maintained consistently throughout the course of any argument, there are other

¹In his Theory of Price, 2nd ed., New York: McMillan, 1946, p. 12, Stigler wrote: "Shall we define competition by its requisites or by its consequences? In a sense the choice is not real: economists did not get around to precise definitions of competition until the consequences of particular conditions were fairly well established." In his later survey, "Perfect Competition, Historically Contemplated," Journal of Political Economy, Vol. LXV, Feb. 1957, he noted correctly: "This list of requirements of perfect competition is by no means a statement of the minimum requirements, and in fact no one is able to state the minimum requirements," p. 12. He added, "The complete theory of competition cannot be known because it is an open-ended theory; it is always possible that a new range of problems will be posed in this framework," p. 14. He is right in pointing out that the minimum requirements for perfect competition have yet to be specified. I do not follow his reasoning as to how a theory can be said to have a changing character to fit new circumstances and yet still be called the same theory.

considerations which bear upon the degree of freedom we have in choosing arbitrary definitions. To be able to communicate effectively with a wider audience, we must be extremely careful when employing as technical terms those words which in fact originate in common usage and are still frequently found in common usage.

As much as economists would like to create a specialized vocabulary, unblemished by the vagaries of common discourse, that is, to insulate theoretical discourse from all the vagueness and ambiguity of ordinary language, this has not proven to be feasible. Both words, perfect and competition, illustrate the difficulties involved. In current economic analysis, the adjective "perfect" is better applied to the concept of equilibrium than to that of competition. Yet, the phrase, "perfect competition," inevitably creates the impression that this special thing is somehow a typical, essential, ideal form of competition. Increasingly, economists have found this implied inference unacceptable.

Like Alfred Marshall, E.H. Chamberlin was seeking a more realistic way of formulating models of market behaviour, and he objected to all the connotations of powerless passivity attached to the idea of "perfect" competition understood as infinite elasticity:-

Because most prices involve monopoly elements, it is monopolistic competition than most people think of in connection with the simple word "competition." In fact, it may almost be said that under pure competition the buyers and sellers do not really compete in the sense in which the word is currently used.¹

Oddly enough, Chamberlin still chose perfect competition as his "point of departure," and his very contrast between monopoly and competition only served to strengthen a false antithesis.

Discontent about terminology was not confined to the narrower arena of pure theory, but was felt just as much in the very field of applied economics, where models of market behaviour and industrial structure might be most directly applicable to practical affairs, namely, in the sphere of anti-trust laws. Here,

¹Chamberlin, op. cit., p. 10.

many commentators complained of problems of communication between economists and lawyers. A.D. Neale, for example, noted, in regard to the "Technical language" of "perfect" and "monopolistic competition," what he called "this complete reversal of ordinary language in economics."¹ One experienced economist found himself explaining away the anomaly as follows:-

There is an unfortunate divergence between the technical meaning of the word "competition" and common usage. Participants in competitive markets do not "compete" with each other in the common meaning of the term; they merely respond to impersonal market forces. Participants in markets of other forms often do "compete" vigorously ..., but they are not competitive according to the technical meaning of the word, which is reserved strictly for price competition. We, of course, shall always use the words "competition" and "competitive" in their technical senses, but shall have to use the verb "compete" in both meanings, for there is no adequate synonym. These things understood, there is not much risk of confusion.²

Unfortunately, there is much risk of confusion. On another front, for those who hold in high esteem the values of classical liberalism, as a set of norms for guiding economic behaviour, there must be some doubt as to why the model of perfect competition is "perfect" in the sense of being "ideal." By highlighting the constraint and powerless passivity of infinitely elastic demand, the model does not lend itself to the virtues of freedom, independence and initiative. Instead, it is really a model of perfect conformity, wherein everything is equalized, standardized and homogenized, and from which any sense of individuality, diversity, and enterprise has been ruthlessly excluded. The model of perfect competition has nothing very much to do with competition at all: it acts as a definition for a perfect form of equilibrium.

With these thoughts in mind, let us now consider the case of one 20th century economist who tried to break away from the traditional mould of competitive doctrine, attempting in the process to resolve the theoretician's dilemma that had been so clearly evoked by Edgeworth in the preceding century.

¹A.D. Neale, The Anti-Trust Laws of the United States of America, 1st ed., Cambridge: University Press, 1960, pp. 479-80.

²Dorfman, Prices and Markets, 2nd ed., Englewood Cliffs: Prentice-Hall, 1972, p. 144n. This footnote did not appear in the 1st ed. of 1967.

2. Joseph Schumpeter and the Dilemma of Economic Theory

Of the many economists actively writing in the 1930s and 1940s, Joseph Schumpeter was certainly not the only one interested in the subject of dynamics, nor the only one caught up in the study of competition. He is, however, the one person who best brings these two features of economic thought into contact with one another. And, more than anyone else's, his work raises the question: can competition be considered to be solely equilibrating in tendency, or is it not dis-equilibrating as well? Though Schumpeter never quite formulated that question in so many words, the whole thrust of his Capitalism, Socialism and Democracy points firmly towards it.

Schumpeter's interest in dynamics was manifest from the outset of his career. ^{One of his first books} ~~His first book~~, the Theorie der Wirtschaftlichen Entwicklung (1912),¹ announced the characteristic themes that would be synonymous with his name later in the century. Sketching a dynamic theory of economic development in an older literary style, Schumpeter sought to explain the phenomenon of entrepreneurial profit (as distinct from interest as a return on capital investment) as a temporary return to the entrepreneurs who successfully introduced innovations, reaping excess gains before their competitors (as imitators) could react to restore equilibrium.

Already, one might say that Schumpeter's concept of innovation was a de-stabilizing, dis-equilibrating, form of market competition. It threw a pre-existing equilibrium state of affairs out of force, and required that some new equilibrium position be found. However, in 1912 Schumpeter made very little reference to the concept of competition, and, being an ardent admirer of Walras, he was the last person to want to undermine the neoclassical synthesis achieved during the preceding decades of the 19th century.

Schumpeter's subsequent writings of the 1930s and 1940s were not conceived in an intellectual vacuum. He was alive to ongoing developments in

¹Translated by R. Opie as The Theory of Economic Development (3rd ed., New York: Galaxy Books, 1961).

economic theory, and if he had not been aware of the far-reaching implications of his theory in 1912, then he certainly became so with the passing years, living in America from the 1920s onwards, where the subject of competition was far more controversial than it had been in Austria.

Before we proceed with Schumpeter's work, it will be useful to return momentarily to Knight's Risk, Uncertainty and Profit, a book which exerted a formidable influence over the economic thought of this period. Knight wanted to interpret entrepreneurial profit - or "pure" profit - as an "unimputable" or "residually imputed" form of income, reflecting the uninsurable risks encountered in the running of any business enterprise. His principal argument pointed to the aspects of business uncertainty that rendered some types of risk unmeasurable, and hence uninsurable. But in addition to this, he had much to say about the dynamics of economic progress and market behaviour. What is especially worthy of note in his text is this: Whenever the word competition arises in his reasoning, it is always depicted in its "equalizing" role, and he quite specifically states that:-

... The primary attribute of competition, universally recognized and evident at a glance, is the "tendency" to eliminate profit or loss, and bring the value of economic goods to equality with their cost.¹

Clearly, Knight had not recognized that competitive pursuit of profit led to the inventions and improvements of which he had much to say in accounting for uncertainty. To Knight, these were merely "exogenous" factors, "disturbances" to which the economic system reacted, by "competitive adjustments," in establishing another stable situation.² Knight's heavy reliance upon the very abstract ideas of perfect competition did much to encourage other theorists, like Chamberlin, to develop more realistic models of market behaviour.

Teaching at Harvard, Schumpeter was familiar with Chamberlin's Ph.D.

¹Knight, op. cit., p. 18.

²ibid., p. 148, where he also writes: "... the disturbances arising from invention and improvement are due to the local and spasmodic way in which they originate, not to the general tendency."

thesis of 1927, presaging the onset of the trend towards monopolistic competition. Thus, by 1934 when Schumpeter reviewed Joan Robinson's Economics of Imperfect Competition in the Journal of Political Economy, he had had plenty of time to contemplate the wider implications of that new development in economic theory. Appreciative of Mrs. Robinson's skill at refining analytical techniques, Schumpeter was anxious to make a more general point. The "logical autonomy" of economic science derived from the determinateness of a general equilibrium system, Schumpeter wrote, and therefore no matter how useful these alternative models of market behaviour might be, the model of perfect competition would always remain the "Magna Carta" of economic science, ensuring that its subject matter was a "cosmos," and not a chaos.¹

So argued Schumpeter between 1934 and 1939, thoroughly Walrasian, it might seem. Yet, in the same work in which he repeated these propositions, namely, in his massive study Business Cycles: A Theoretical, Historical and Statistical Analysis of the Capitalist Process (2 vols., 1939), Schumpeter was constructing a dynamic theory of economic behaviour which in many ways pulled the bottom out from underneath the Walrasian edifice. Such was not Schumpeter's deliberate intention, but eventually he became aware of the consequences of his main hypothesis, and thenceforth struggled to reconcile his dynamic theory of profits with Walras's general equilibrium system.

With his Business Cycles, Schumpeter wanted to show how an economy generates cyclical fluctuations from within itself, that is, as an inherent part of its normal functioning. Because the search for "maximum" profit does not end with the realization of an equilibrium, but is carried on by introducing new products and methods, by creating new demands and discovering new markets, the

¹Schumpeter, review of Robinson's Economics of Imperfect Competition, in Journal of Political Economy, Vol. XLII, April 1934, reprinted in Essays of J.A. Schumpeter, ed. R.V. Clemence, Cambridge, Mass: Addison-Wesley Press, 1951, pp. 125ff. See also Schumpeter's Business Cycles, 2 vols., New York: McGraw-Hill, 1939, Vol. I, p. 41, as well as his History of Economic Analysis, New York: Oxford University Press, 1954, p. 968, for similar comments.

process of innovation is an inherently de-stabilizing feature of capitalism. He defined innovation as the "setting up of a new production function," though this did not quite capture the full range of meaning he usually gave to the term.¹

More pointedly, he observed:-

Innovation is readily seen to be a distinct internal factor of change. It is an internal factor because the turning of existing factors of production to new uses is a purely economic process and, in capitalist society, purely a matter of business behaviour.²

That was tantamount to saying that competitive striving (in search for increased profits) was dis-equilibrating. Schumpeter did not quite say so. Equilibrium represented stability, order, regularity, determinateness, the absence of qualitative change, the heart and soul of economic science, and competition was the traditional guarantor of equilibrium.

Schumpeter's attempt to resolve the dilemma was ingenious as well as plausible: markets were alternately stabilizing and de-stabilizing, insofar as innovations came in clusters. Because of the uncertainties in calculating future prices and costs, entrepreneurs were more likely to introduce changes during stable periods, and to delay them when the system was unsettled. Thus, he concluded, an economy would fluctuate in and out of equilibrium positions, since the reluctance to innovate during periods of instability acted as a counter-tendency to any preceding effects of innovation itself. Stability gave rise to innovation; instability created by innovation would temporarily delay further initiative, thus bringing the system to a new equilibrium, and so on.

The trouble with Schumpeter's imaginative account of economic change was that there was no good reason to assume that waves of fluctuating innovations would occur simultaneously between different industries, such that general equilibrium throughout the entire network of markets would ever be restored. Nor indeed did Schumpeter satisfactorily demonstrate how partial equilibrium was to be found in any one market alone. Here, his methods were literary and casual,

¹Business Cycles, Vol. I, p. 87. Elsewhere, he described innovation quite simply as "any new way of doing things."

²ibid, Vol. I, p. 86, my emphasis added.

his faith placed all too heavily upon Walrasian tradition.

Even as he was writing his Business Cycles, one could sense Schumpeter's uneasiness about the matter. In a footnote, he acknowledges some of the shortcomings of his impressionistic account, apologizes to his reader for the many simplifications he had made use of, and mentions (in passing) a forthcoming book he was intending to publish, in which he promised to "overhaul the purely theoretical parts of the present argument."¹ That forthcoming book turned out to be his Capitalism, Socialism and Democracy (1942), aimed at a wider audience, but far more candid and relevant to the theme of competition than Business Cycles had been.

Part II of Capitalism, Socialism and Democracy consisted of a wholesale attack upon the neoclassical theory of perfect competition, as he understood it. Though Schumpeter never did precisely formulate the distinction between equilibrating and dis-equilibrating forms of competitive behaviour, he came about as close as any economist has ever come to doing so. In much of what Schumpeter says, we can identify the dual themes of change and the response to change, of "leaders" and "followers," that is, of "heroic" entrepreneurs who innovate or initiate change, and of those lesser mortals who merely adapt, imitate, adjust, or conform to given standards.

In this way, he set about contrasting the "traditional modus operandi of competition," - "competition within a rigid pattern of invariant conditions" - to what he termed the competition which really "counts."² This was "the competition from the new commodity, the new technology, the new source of supply, the new type of organization."³ That this latter type of competition was not generally subsumed under the "traditional" theory is strongly suggested,

¹ ibid, Vol. I, p. 36n.

² Schumpeter, Capitalism, Socialism and Democracy (1942), 3rd ed., New York: Harper Torchbooks, 1962, p. 84.

³ ibid, p. 84.

as when he wrote:-

... The introduction of new methods of production and new commodities is hardly conceivable with perfect - and perfectly prompt - competition from the start. And this means that the bulk of what we call economic progress is incompatible with it. As a matter of fact, perfect competition is and always has been temporarily suspended whenever anything new is being introduced.¹

In the passage just cited, Schumpeter was virtually (though not quite) saying that some forms of competition are dis-equilibrating and that perfect competition, by its very meaning, excluded any dis-equilibrating initiatives. For example, he also argued that perfect competition left no room for business "strategy" and that it tells us nothing about the "process of creative destruction," his phrase for the sequence of events involving innovation and adaptation.²

Thus, Schumpeter's Capitalism, Socialism and Democracy can readily be interpreted to have made this exceptionally simple and profound point: that the common-sense meaning of the word competition offers no support for the view that competitive behaviour is essentially equilibrating in tendency. The trouble is that Schumpeter's book was not a systematic and well-disciplined study of economic theory, and so, even if it did stimulate much thought and empirical research on the subject of innovation and technological progress, it nevertheless left the status of economic theory still hanging very precariously up in the air.

What is more, Schumpeter's peculiar account of the history of competitive theory left much to be desired. His critical attacks were often bitter and misdirected. It was as if, on this one occasion, he dropped all semblance of professional objectivity and cautious inhibition, lashing out at the wrong targets and creating some very misleading impressions. It is the

¹ ibid., p. 105.

² ibid., p. 105.

height of injustice that Walras's "pure" economics is passed over with virtually no comment¹ and that Marshall (along with Wicksell, oddly enough) is singled out for criticism. For, surely Marshall, more than any one else, had retained that element of realism, that emphasis upon the "new" and the "dynamic" potential of competition, in his theoretical writing, which Schumpeter himself was so anxious to stress. Indeed, when in 1947, Schumpeter published his paper, entitled "The Creative Response in History,"² wherein he examined the "creative" and "adaptive" sides to business behaviour, it could be said without any exaggeration that he had borrowed his ideas from Marshall's Principles!

Written for popular consumption, Schumpeter's Capitalism, Socialism and Democracy was brilliantly composed and proved to be a popular success. However, it was also a momentary lapse in professional loyalty, for which he partially atoned with his unfinished History of Economic Analysis, published posthumously in 1954. Whereas his book of 1942 had posed a profound dilemma for neoclassical theory without attempting to resolve it, the History was intended as a monument in praise of the neoclassical achievement in the field of abstract "analysis." Once again, Schumpeter adopted his role of professional ambassador and interpreter of the cause of scientific economics. There is little sign of the Schumpeterian dynamism in these pages. Walras is praised beyond all praise, and economics is depicted as the study of an orderly cosmos of "determinate" stability.

Only in the closing pages of the History can we find lingering doubts. Pure competition, he says, is only a "special case," and he asks the loaded question "whether the definition of pure competition that has been given above really fits what we mean when talking about competitive business."³ Here, his answer was only suggestive, not definitive, and at least he cited Marshall's

¹ ibid., p. 77n4.

² Schumpeter, "The Creative Response in Economic History," from Journal of Economic History, Vol. VII, Nov. 1947, reprinted in Essays, pp. 216-26.

³ History of Economic Analysis, p. 975.

work as the proper guide.¹ By putting the stress on "analysis" rather than "theory," that is to say, on "technique" rather than on the explanation of behaviour, Schumpeter was groping further along the right direction that both Edgeworth and Marshall had intimated, though Schumpeter had yet to make the complete and appropriate divorce between the concepts of competition and equilibrium that this long-run trend indicates must come.

3. Testing and Evidence: The Empirical Crunch

The persistence of the Great Depression well into the 1930s brought on a similar crisis in confidence in the overall structure of economic theory that had been experienced during the turbulent period of the 1820s to 1840s. As part of this widespread mood and reality of depression, faith in the virtues of economic competition was once more on the downswing. Expressions of belief in the virtues or vices of competition have long served as a barometer to the general economic health of a society. This spurious connection has been based on two premises, neither of which are acceptable: (1) Perfect competition delivers ideal results, understood in terms of economic efficiency for the most part, with indirect implications about justice and stability, and (2) this same perfect competition is the epitome or essence of economic competition in general.

When Arthur Burns wrote his lengthy empirical study, The Decline of Competition (1936), he was not really examining the decline of economic competition, but rather the gradual disappearance of one type of economic institution, once the predominant form of organizing productive effort, namely, the small-scale, privately-owned and privately-run business enterprise. Gradually and imperceptibly and over an extended period of time, the concept of perfect competition had become so closely associated with the idea of an atomistic

¹ ibid, p. 975. Even here, Schumpeter only hints at the disequilibrating side of competition, when he asks: "Is it not a fact that what we mean by competition is the scheme of motives, decisions, and actions imposed upon a business firm by the necessity of doing things better or at any rate more successfully than the fellow next door?" (emphasis added).

organization of society into small production units that the former and the latter had grown virtually synonymous with one another.

But competition is a pattern of behaviour, not an institution, and there is no a priori reason to associate competitive behaviour any more with one set of institutional arrangements than with another. There is nothing in the broadest meaning of economic competition to suggest that it must take place in one context and not in another. Berle and Means, in their highly influential book, The Modern Corporation and Private Property (1932), investigated the changing character of business organization, laying particular stress upon the growing separation of ownership from control over productive resources through the legal concept of agency. As to the effects this had upon the traditional conception of competitive behaviour, they recognized the inadequacy of the atomistic "firm" as the sole or primary theoretical "unit" of analysis. Without delving into the subject of competition very deeply themselves, they were content to say that "new concepts must be forged and a new picture of economic relationships created."¹

It is not difficult to perceive the kinds of complexities that large organizations present for the systematic account of economic competition. We can see at a glance the dualities of competitive striving and competitive grouping by the example of the individual employee of a large organization. Considered as an individual competitor by himself, he seeks his own ends, such as a higher salary, promotion, and so on, within the context of the organization. On the other hand, considered as one of a "team," he strives on behalf of that organization in a competitive struggle with other such corporate units, or else combines with others within the larger organization to engage in intra-corporate competition.

We need not stop here with the relationship between the individual and

¹A.A. Berle and G.C. Means, The Modern Corporation and Private Property (1932), 2nd ed., New York: Harcourt and Brace, 1967, p. 302.

the corporate enterprise. Economic competition takes a myriad of forms: between companies or firms within an industry; between industries themselves (organized into competitive units through the official or unofficial agency of industrial or trade associations) - what Galbraith has called "countervailing power;"¹ or between political entities and geographic regions, striving against one another, for example, to attract capital investment; or between various special interest groups and cabinet ministers, whether in open public forums or in the less conspicuous corridors of power, each seeking a greater share of public revenues or other economic ends, such as the sole use of scarce resources. Economic competition takes place as often in the board-room, between members of committees of a single institution, as it does between distinct trading units in the market-place. All that need be the case for it to be said that economic competition occurs is that two or more individuals (however grouped into competing units) strive against one another for the "same" economic objective.

However, in spite of the widespread recognition of these complexities of modern economic institutions and relationships, the theory of perfect competition survived the crisis of the 1930s and by the early post-war years was still in retention of the theoretical primacy it had gradually acquired during the previous hundred years. The problem of competitive grouping was evaded by treating the firm, the sole distinguishable unit of production and exchange, as if (speaking analogically) it were run by a fictionalized, autonomous and centralized decision-making entity, "the" entrepreneur. The entrepreneur became the firm personified.

Thus, in the new atmosphere of optimism of the late 1940s and 1950s,

¹J.K. Galbraith, American Capitalism: The Concept of Countervailing Power, (1952), London: Pelican Books, 1970. On p. 125, Galbraith calls countervailing power the "counterpart" of competition, distinguishing between relations between buyers and sellers on opposite sides of the market with relations between buyers and sellers on the same side of the market (much as did Sir James Steuart in 1767). However, he uses the new phrase to capture the meaning of a more diffused kind of competition as well as the idea of a re-alignment of competitive forces, that is, a re-grouping of competitive participants into new "units."

professional and scientific acceptance of the theory of perfect competition was revived. Two questions might be raised here, concerning this revival. Why were theorists so intent upon preserving that theory, and why were they successful in defending the theory for so long against so much adverse criticism? The answer to the first question has been indicated often enough before, in this narrative. To relinquish the theory of perfect competition was, in the minds of theorists, tantamount to rejecting the study of economics as an abstract science, because they had not yet discovered that both equilibrium analysis and mathematical techniques could be divorced from the activity of constructing behavioural theories, and could be investigated and applied profitably in their own right.¹

The second question, why the theory succeeded in lingering on, well past its indicated life span, calls for more careful explanation. The main attack upon perfect competition was aimed at its growing irrelevance and lack of direct applicability to current affairs. The emphasis upon the criterion of empirical relevance left theorists a great deal of room to maneuver, because it did little to evaluate the theory as a theory, that is to say, as a proffered explanation pertaining to hypothetical circumstances. Just as Jevons had dulled the critical edge of Thornton's attack, by distinguishing between a theory and its applications, the defendants of perfect competition rightly insisted that the direct empirical irrelevance of the assumptions had nothing to do with the scientific acceptability of the theoretical inferences drawn from those assumptions.² To weaken the theory, one would have to put in doubt the

¹Possibly, too, the general political climate of the Cold War may have delayed for a time the growing separation of theory from technique, insofar as the status of economic theory possessed a wider ideological significance. However, to be accurate, the theory of perfect competition itself was still out of favour, relatively speaking, in the late 1940s, and only began to come back into the limelight by the middle 1950s.

²Milton Friedman, in his much cited paper, "The Methodology of Positive Economics," in Essays on Positive Economics, Chicago: University Press, 1952, wrote what has since come to be recognized as the classic defense of the theory of perfect competition, though his paper ranges over a much broader set of issues in methodology than this one.

association between the premises of the theory and the conclusions drawn from it.

Even if the opponents of perfect competition did not address their remarks to the heart of the matter, examining the theory on its own terms, the defendants nevertheless felt obliged to shore up the scientific basis upon which their theory rested. This they began to do during the 1940s, and efforts are still being expended today to strengthen the case for accepting the theory. We can better appreciate these scientific endeavours by dividing the proponents of perfect competition into two schools:- (1) those who believe that the inferences drawn in the theory, associating the behavioural premises with market results, are empirically contingent and hence in need of empirical confirmation, and (2) those who look upon the theory as a purely logical argument whose inferences can be demonstrated as valid on purely logical grounds, by rigorous proof.

In the remainder of this section, I shall consider the first of these schools of thought, for chronological reasons, and turn to the second in the section to follow.

The empirical school begins effectively in 1951, with the publication of a statistical study by J.S. Bain in the Quarterly Journal of Economics.¹ Buoyed up by the improvements in econometric techniques and in the availability of industrial statistics, several other economists have tried to construct more elaborate tests, along the basic lines established by Bain, and have claimed positive or confirmatory results in support of competitive price theory, broadly speaking, on the strength of these tests.²

¹J.S. Bain, "Relation of Profit-Rate to Industry Concentration: American Manufacturing, 1936-1940," Quarterly Journal of Economics, Vol. LXV, Aug. 1951, pp. 293-324. See also his earlier paper, "The Profit Rate as a Measure of Monopoly Power," ibid, Vol. LV, Aug. 1941, pp. 271-93. Bain's empirical studies were an outgrowth of A.P. Lerner's "The Concept of Monopoly and the Measurement of Monopoly Power," Review of Economic Studies, Vol. I, June 1934, pp. 157-175. Needless to say, statistical and broadly "empirical" studies of the relationship between pricing behaviour and industrial structure had preceded Bain's, notably that of R.L. Hall and C.J. Hitch, "Price Theory and Business Behaviour," Oxford Economic Papers, Vol. II, May 1939, pp. 12-45.

²Very useful summaries of this literature are provided by N.R. Collins and L.E. Preston, in both their paper "Price-Cost Margins and Industry Structure," Review of Economics and Statistics, Vol. LI, Aug. 1969, pp. 271-86 and their book, Concentration and Price-Cost Margins in Manufacturing Industries, Berkeley and Los Angeles: University of California Press, 1968.

To evaluate such findings, I shall first review the content of the theory of perfect competition, in order to indicate what empirical testing would have to accomplish, if it were to provide confirmatory evidence for that theory. Now, the purpose of any theory is, ostensibly, to associate a group of premises (or pre-conditions, prerequisites, postulates, assumptions, suppositions, and so on) with a group of conclusions (or consequences, inferences, implications), the connecting of these two groups being the theorems or hypotheses to be confirmed. And, in the terminology of the empirical school, as regards the theory of perfect competition, the set of premises would include patterns of market structure and behaviour, while the set of conclusions would consist of equilibrium results (or tendencies towards those results), often labelled as market performance.

To serve as the basis for empirical testing, the elements of these two groups must be empirically (and semantically) distinct from one another, and at least some of them from both groups must be observable or reducible to empirically observable or measurable terms. Inevitably, there will be disagreement over the precise specification of these elements of the theory, but a reasonably approximate list of traditional features can be made. I shall not attempt anything like a comprehensive and exact statement of the theory, nor a rigorous demonstration. All that the following summary attempts to do is identify and label the most prominent features, to assist in evaluating the empirical evidence.

First, as to the premises, these could be interpreted to apply either to the case of a single market or to a network of inter-related markets, depending on one's specific intentions. For empirical testing, they are best thought of as applying to some individual markets or industries, in contrast to other individual markets or industries - which are more properly described as monopolistic or oligopolistic. For ease of identification later, each premise is given a brief label in brackets.

Premises - Market Structure and Behaviour

- p1: Each buyer and seller seeks maximum profits (profit motive).
- p2: Buyers and sellers are very numerous (large-numbers).
- p3: They trade in a perfectly standardized product (product homogeneity).
- p4: Each trader acts "independently," without collusion (independence).
- p5: They are free to enter or leave the market (free entry or mobility).
- p6: They possess "perfect" knowledge of market conditions (perfect knowledge).

As for the conclusions, since each of these serves to define one aspect of long-run equilibrium, I shall adopt a simplified notation, as follows:-
'P' as price, 'MR' as marginal revenue, 'MC' as marginal cost, and 'AC' as average cost (including a "normal" rate of return on capital investment, treated as a capital cost).¹

Conclusions - Equilibrium Results or Tendencies

- e1: Each buyer and seller earns maximum profits (i.e. $MR = MC$).
- e2: Each seller individually faces an infinitely elastic demand curve for his product (i.e. $P = MR$).
- e3: Price is uniform throughout the market (i.e. $P = P' = P'' \dots = P_n$).
- e4: Sellers earn "normal" profits (i.e. $P = AC$).
- e5: Sellers produce output at minimum long-run average cost (i.e. $MC = AC$).
- e6: Sellers set price equal to marginal cost (i.e. $P = MC$, from e1 and e2).

Before turning to the empirical evidence, I shall pause here to make a few observations about this schematic summary. Several pairs of premises and conclusions have long been closely associated with one another, for example, product homogeneity (p3) with price uniformity (e3), or large-numbers (p2) with infinite elasticity (e2),² - so much so, in fact, that they have almost been

¹To repeat, my list of 6 premises and 6 conclusions is intended neither as a comprehensive statement nor as a rigorous demonstration of the theory, but is designed to highlight the features of the theory relevant to empirical testing. It is deliberately formulated in the now somewhat old-fashioned terminology that was current in the 1940s and 1950s when empirical testing came into vogue, and should not be judged by the standards of the set-theoretic literature of the 1960s and 1970s. One could quibble over many of the details. For example, the condition, $P = MR$, is not directly obvious from e2, but would be deduced from the definitions of the demand curve and of infinite elasticity. But, for the purpose indicated here, this kind of rigour in details is beside the point.

²Somewhat less direct connections exist between the premise of "independence" (p4) and the result of "normal" or "non-excessive" returns (e4), as well as between mobility of resources (p5) and optimal scale (e5). Notice, too, that marginal-cost pricing (e6: $P = MC$) is not a deliberate objective of the firm but an indirect result of p1 and p2 yielding e1: $MR = MC$ and e2: $P = MR$.

fused together and thence treated as indistinguishable from one another, such that the inferential relationship between $P(p_1 \dots p_6)$ and $E(e_1 \dots e_6)$ has been overlooked in the details of demonstration. For example, the pursuit of maximum profits (p_1) as a motive or objective has often been equated with the realization of maximum profits (e_1) as an equilibrium result, in mathematical models. If some disputes arise as to whether the conditions of price uniformity (e_3) and infinite elasticity (e_2) are to be treated as premises and not as conclusions, this is because economists were never very clear from the outset as to exactly what these conditions were intended to mean in behavioural terms.¹

Also noteworthy is the fact that most of the equilibrium conditions identified in this schema act to define various aspects of economic efficiency and justice, and this is arguably so, whether these conditions are linked to perfect competition or not. For example, marginal-cost pricing (e_6) has been widely adopted as a criterion for allocative efficiency, while e_5 represents the choice of optimal scale and productive efficiency. The condition of "normal" returns (e_4), considered in conjunction with e_1 (individual efficiency in pursuit of individual ends) and e_3 (equals treated as equals), serves as one definition of distributive justice, and so on.² Finally, I might add that the infinite elasticity condition (e_2) could be interpreted in such a way that it need not be imposed upon sellers by the market discipline of large numbers, but could be instituted through various forms of agency, such as centralized or

¹Stigler's observation, given above in note 1, page 280, readily applies here.

²In a more comprehensive formulation of the theory, the idea of distributive justice would be represented by various of the marginal conditions in equilibrium, relating the productivities of different input factors to one another. These marginal conditions have been omitted in the summary given in the preceding text, because they have been largely ignored by the empirical studies of competition. Several commentators have drawn attention to this shortcoming, as will be noted below.

governmental decree.¹

If the theory of perfect competition is to be confirmed or disconfirmed empirically, then tests must be designed to determine whether or not those markets or industries which more nearly approximate the pre-conditions of perfect competition, as given by $P(p_1 \dots p_6)$, also more nearly realize the expected equilibrium results, $E(e_1 \dots e_6)$, than do industries that diverge widely from the defining characteristics of perfect competition.

Without going too far into the details of published studies, we can describe their broad outline as follows: Statistical data are drawn from the annual Census of Industries, now available for several major countries, providing information about the numbers of sellers in each industry, their distribution of purchases and sales, and industry totals of annual costs and revenues. Supplementary data on prices, profits, asset values, and so on, are taken from a variety of standard statistical sources. From these data, each study has first defined and estimated a value for a market-power variable relating to each industry, as well as one or more market-performance variables. The former have usually consisted of estimates for industry sales concentration, though some tests have used measures for asset concentration, and at least one investigator constructed a second market-power variable measuring the "barrier-to-entry" condition.² Market performance has almost invariably been measured either by

¹Needless to say, it is still a hotly debated issue as to whether a centralized planning agency or a system of inter-related but decentralized markets will more speedily and effectively approximate an ideal set of results defined by equilibrium. All that I am saying here is that the concept of infinite elasticity is, by its very meaning alone, no more associated with one set of institutional arrangements than with another, for analytical purposes. For example, in mixed economies, governments may impose restrictions in pricing behaviour upon public or private enterprises which approximate the condition of infinite elasticity as much as do the market constraints offered by large numbers of buyers and sellers.

²In preference to sales as a measure of concentration and market power, M. Hall and L. Weiss tried assets, in their "Firm Size and Profitability," Review of Economics and Statistics, Vol. XLIX, Aug. 1967, pp. 319-31. H.M. Mann tried to improve upon Bain's work by adopting a rather arbitrary classification scheme for barriers to entry, in his paper "Seller Concentration, Barriers to Entry, and Rates of Return in Thirty Industries, 1950-1960," ibid, Vol. XLVII, Aug. 1966, pp. 296-307. S.A. Rhoades assailed Mann's techniques and results on barriers to entry in "Concentration, Barriers and Rates of Return: A Note," Journal of Industrial Economics, Vol. XIX, Nov. 1970, pp. 82-88, and a running battle between Rhoades and Mann has ensued (ibid, Vol. XIX, July 1971, pp. 291-3; Vol. XX, Apr. 1972, pp. 193-5; and Vol. XXI, Apr. 1973, pp. 203-04). This instructive interchange illustrates how unreliable the statistical results can sometimes be.

some form of price/cost mark-up ratio or by some estimate of profitability (on assets or sales). Finally, simple correlation coefficients have been calculated, associating "market power" with "market performance."

Results to date have been fairly consistent in that they have been ~~rather~~ very weak (with correlation coefficients bordering on the edge of statistical significance, at 5 and 10 per cent confidence levels) but ^{are} in conformity with the theoretical prediction. Industries with less "market power" tend to earn lower profits and set prices nearer to costs. Though there has been some dispute over the adequacy of the statistics and the appropriateness of the tests employed,¹ I think it is fair to say that a consensus rules amongst these researchers that they have, broadly speaking, confirmed the general drift of competitive theory, even if they have been rather reluctant to employ the phrase "perfect competition" itself, in their formulations.

But what, in fact, have these tests accomplished? Specifically, how do they relate to the theory of perfect competition? I will not enter into a discussion of the many minor details regarding the adequacy of the data selected, although many objections can be raised on this matter. What is more important is the broad design of the tests themselves. If they are examined objectively and dispassionately, I think it can be said that they do not test (and hence confirm or disconfirm) any of the very specific hypotheses that have been grouped under the general heading of perfect competition.² Instead, they confirm a much less specific and much less interesting proposition, what we might call the market-

¹Some very trenchant criticisms have been made by: Ruth P. Mack in her "Comments" (pp. 88-92) on A.C. Harberger's "Monopoly and Resource Allocation," American Economic Review/ Supplement, Vol. XLIV, Dec. 1954, pp. 77-87; Stigler, "The Statistics of Monopoly and Merger," Journal of Political Economy, Vol. LXIV, Feb. 1956, pp. 33-40; D.A. Worcester, Monopoly, Big Business and Welfare in the Postwar United States, Seattle: University of Washington Press, 1967, pp. 210-27; and W.G. Shepherd, "Structure and Behaviour in British Industries, with U.S. Comparisons," Journal of Industrial Economics, Vol. XXI, Nov. 1972, pp. 35-54.

²Not even the hypothesis about profitability, because all but one of the tests (up to 1972) failed even to distinguish average rates of profit that were actually earned, from "normal" profit levels, and most of the tests did not even estimate capital costs in their measurements of price/cost markups. This issue is discussed briefly in the text to follow.

power hypothesis, namely, that the possession of market power is correlated with the exercise of market power. Set alongside the seemingly precise theorems of perfect competition, this is a more or less trivial hypothesis. Indeed, it is so obvious, that the very weakness of the statistical tests does more to throw doubt on the adequacy of the statistical data, than upon the hypothesis being tested.

The most that these statistical investigations establish is that industries possessing more market power exercise that market power to earn higher rates of return on capital. All that they manage to estimate are industry-wide average realized costs, revenues, prices and profits, whereas the crucial theorems about perfect competition associate those realized values with certain other sets of values defining minimum costs, maximum profits, marginal costs and revenues, and normal rates of return to factors of production.

The crux of empirical testing is that of discovering a method for estimating static and marginal values for cost and revenue, these "schedules" or "curves" being understood as sets of alternative possibilities existing at any one moment in time, against which actual realized values can be assessed. For the theory of perfect competition is quintessentially a theory based upon the economic calculus of margins. Unless and until the static and marginal cost and revenue curves can be measured or estimated, the theory of perfect competition cannot be properly tested.

How, then, have some economists interpreted these simplistic statistical measures as if they did confirm what is an immensely intricate theory? Quite simply, they have made "assumptions" about the relevant shape of the cost curves to be estimated, as well as further "assumptions" about the relationship between average realized costs with long-run minimum and long-run

marginal costs.¹ Unfortunately, gratuitous assumptions about the very cost curves to be estimated truly beg the key issues raised by the theory. The assumption, for example, that all long-run average costs are constant, rather than increasing or decreasing, over the relevant range of output being tested, merely places in doubt the very reason for building a calculus based on marginal variations.

A number of supplementary problems in testing have emerged over the course of the past twenty years of statistical investigation. One is that of defining and then measuring the "normal" rate of return on capital, in order to distinguish between normal capital costs and "excess" profits. The chief perplexity here is to avoid circularity in the definition, that is, to avoid defining normality in terms of competitive conditions, a procedure which defeats the very purpose of the theory.² Liebenstein drew attention to another problem. Whether firms produce at long-run optimum scale or not, there is no guarantee that average realized costs will lie on the long-run average cost curve - rather

¹Harberger begs the very question as to what the statistical data can establish or confirm about marginal relationships when he writes: "I take it as an operating hypothesis that, in the long run ... average costs are close to constant in the relevant range, for both firm and industry. This hypothesis gives us the wedge we need to get something from the data. For as is well known, the malallocative effects of monopoly stem from the difference between marginal cost and price, and marginal costs are at first glance terribly difficult to pin down empirically for a wide range of firms and industries. But once we are ready to proceed on the basis of constant average costs, we can utilize the fact that under such circumstances marginal and average costs are the same, and we can easily get some idea of average costs." ("Monopoly and Resource Allocation," op. cit., p. 77). This is to assume what one wishes to establish empirically, but all of the statistical studies since Harberger's have adopted this assumption, in the absence of any workable method of estimating static-marginal costs.

²One procedure has been to define the "normal" rate of profit as the minimum rate of return that an enterprise must realize in order to survive in an industry, that is, to be able to cover its minimum capital costs, and then to measure that level of capital costs by taking some low-risk long-term government security as a typical source of capital. There are two problems here. Which government security is to be chosen, and should the normal rate vary between different industries? And, secondly, if the level of the price for capital varies with competitive supply and demand for funds, how can that level be distinguished from the competitive level itself, allowing for a statistical confirmation? D. Qualls arbitrarily selected six per cent as his "normal" rate of return in "Concentration, Barriers to Entry, and Long Run Economic Profit Margins," Journal of Industrial Economics, Vol. XX, Apr. 1972, pp. 146-58. The arbitrary choice strategically affects the statistical results of the test. As long ago as 1879, Henry Sidgwick lucidly observed that "the very node of this problem (i.e. of primary distribution) lies in determining the entrepreneur's normal remuneration," (Fortnightly Review, Vol. CLII, n.s., Sept. 1879, p. 412). See above, Chapter V, section 3.

than lying above it. To know this, we need once more an estimate of that elusive static concept which defines the minimum possible unit cost, achievable in the long-run, at varying levels of output. Liebenstein called the average realized cost lying above the long-run cost curve "X-Efficiency."¹

Hence, without confirming or disconfirming the theory of perfect competition, the empirical evidence cited so far, in support of the much weaker market-power hypothesis, is quite ambiguous in regard to the more precisely framed theorems of perfect competition. The evidence leaves open the possibility that the divergence between prices and costs, or the variations in profit rate between industries with different degrees of market power, are due not to static inefficiency, as the theory of perfect competition would lead us to believe, but instead are due to dynamic efficiency, in accord with the thesis of Marshall and Schumpeter, namely, that firms with monopoly power are better able to make use of their resources over long periods of time.² After all, businessmen may be at least partially right when they insist that higher profits reflect efficiency, not the abuse of market power. Empirically, this is still very much an open question, for which there is likely no simple or decisive answer.

Thus, when all is said and done, it must be granted that the theory of perfect competition has not yet been effectively tested, and therefore cannot be considered either confirmed or disconfirmed. Effective tests may yet be devised and carried out; sporadic attempts have been made to estimate marginal costs and long-run average costs, for isolated industries.³ But the difficulties,

¹H. Liebenstein, "Allocative Efficiency versus X-Efficiency," American Economic Review, Vol. LVI, June 1966, pp. 392-415.

²See Marshall's Principles of Economics, 9th Variorum Edition, ed. C.W. Guillebaud, London: Macmillan, 1961, Vol. I, pp. 484-5 and 494-5 on monopoly, and Schumpeter's similar views in his Capitalism, Socialism and Democracy, pp. 83-4.

³See, for example, the relatively sparse data given for marginal costs in the French studies of public utilities, in Marginal Cost Pricing in Practice, ed. J.R. Nelson, Englewood Cliffs: Prentice-Hall, 1965.

both in defining empirically meaningful concepts, and in measuring hypothetical levels of cost at varying scale, are so immense that there is very little hope that any convincing evidence will ever be produced. In practical terms, the theory of perfect competition has proved to be untestable.

This lack of success, not readily acknowledged by those in the field of industrial organization,¹ has meant that in recent years the scientific case for perfect competition has shifted back to more purely logical grounds.

4. Language, Logic and Mathematical Economics

Beginning with Chapter IV, on the transition to neoclassicism, a recurrent theme of this history has been the parallel development of the concept (and theory) of perfect competition along with the growth of mathematical techniques, employed in constructing the economic calculus.

In considering, now, the proposition that this theory of perfect competition is scientifically no more acceptable on logical grounds than it is on the strength of empirical evidence, we must be very careful not to draw any unwarranted or apparently disastrous conclusions. Instead, we should bear in mind Marshall's motto, Natura non facit saltum; for, nature does not make waves, and the history of economic thought is one of gradual, and for the most part, a sensible evolution. One of the foremost objectives of this thesis is to identify and to preserve those solid lines of continuity which made the study of this history so rewarding and worthwhile.

Mathematical economics is here to stay. If abstract economic analysis is to continue to develop and improve, then a separation must be made between the study of economic behaviour and the study of the abstract numerical

¹Typical of the present-day reluctance of empirical investigators to acknowledge how little the past twenty years of statistical testing has achieved is F.M. Scherer's Industrial Market Structure and Economic Performance, Chicago: Rand McNally, 1970. In some carefully guarded comments (see pp. 5, 36, 38, 400 and 411), he draws a distinction between the modern theories of perfect and pure competition and "Adam Smith's crude vision of how the market economy does its job," but on the whole leaves in doubt just what portions of modern economic theory have been empirically confirmed, as part of Smith's crude vision.

relationships subsisting between various economic concepts. Obviously, the nature and scope of mathematical economics have long been, and still are, much debated issues, and I would not presume to be able to give a comprehensive treatment of these far-ranging issues, in so brief a space as this section must occupy. And yet, so intertwined is the subject of mathematical economics with the status attributed to the theory of perfect competition, that some guidelines must be drawn, if the divorce I am here suggesting is to make sense. What I shall offer in this section is but a skeletal outline of a much more extensive statement of the case.

In questioning the logical validity of the theory of perfect competition, I am equally anxious to re-affirm its justly earned place of prominence in the evolution of economic thought. Acting as an heuristic fiction, it made the transitional phase from behavioural "theory" to mathematical "analysis" more readily attainable. More of this later, but first let us review the situation, as it unfolded during the post-war period, bringing us more or less up to the present.

During and after the Second World War, some very genuine advances were made in both econometric and mathematical techniques, and thus mathematical economics was accurately described, by one of its proponents, as "riding high" by the 1950s. However, perfect competition was still recovering from the inroads of monopolistic competition, made during the 1930s. Thus, in their Theory of Games and Economic Behaviour (1943), von Neumann and Morgenstern brought a number of mathematical techniques to bear upon the study of economic interdependence in market bargaining and exchange, but they were reluctant to treat perfect competition as the single or most important theoretical case.¹ Instead, their analogy between competitive behaviour and the idea of the "Game" suggested the need for something much closer to the concept of oligopoly than

¹J. von Neumann and O. Morgenstern, The Theory of Games and Economic Behaviour, 3rd ed., Princeton: University Press, 1953, p. 15.

of perfect competition.¹

As one example, Martin Shubik's Strategy and Market Structure (1959) detailed a more extensive application of game theory, and its techniques, to the traditional realm of competitive market exchange, retaining the semblance of a truly behavioural theory, probing the ambiguities and complexities of interdependence which arise chiefly from imperfect knowledge and uncertainty. However, in favouring the generic phrase, "oligopolistic competition," Shubik was still pursuing the traditional goals of both simplicity (i.e. uniqueness) and generality, or what he called a "unified approach to the various theories of competition."² As recent as 1975, Shubik was expressing his hope that some day the "underlying structure" of economic reality could be revealed by a unification of various approaches to the subject, in spite of the "maze of institutions and processes which make up economic life."³ Whether the seemingly contradictory goals of simplicity and generality will ever be reconciled in a single theory remains to be seen. In the meantime, the contribution of game theory has been an interesting exercise, but lacking in any definitive results. What is more important, game-theorists have not yet shown how mathematical logic can be successfully integrated into a more expanded and yet equally rigorous logic about behaviour.

However, the venerable theory of perfect competition was to have yet another run for its money. Leontieff's input-output analysis had shown the practical utility of general equilibrium concepts. Encouraged by advances in

¹The game, as a ritualized form of competition, offers some interesting analogies, but it hardly constitutes the basis for a theory of economic behaviour. In principle, a game is well-defined in terms of its objectives, rules, participants and strategies, which is not the case with competition. However, in practice, games are rarely so simple as they are defined to be. Professional sport, as it operates in reality, bears strong comparison with the complexities of economic competition.

²M. Shubik, Strategy and Market Structure, New York: John Wiley and Sons, 1959, p. xi of his preface.

³Shubik, "Oligopoly Theory, Communication and Information," American Economic Review/Supplement, Vol. LXV, May 1975, p. 283.

matrix algebra, topology and set theory, a new generation of economists - prominent among whom have been K.J. Arrow, G. Debreu and H. Scarf¹ - has sought to re-vitalize the aging centre-piece of economic theory, some stressing the static, some the dynamic aspects. None of them has claimed to have succeeded in establishing a complete and comprehensive logical demonstration, and rightly so. But claims have been made as to partial proofs, giving encouragement to the construction of ever more elaborate models, with the aid of computerized techniques of calculation.²

A useful distinction can be drawn here between those who are intent upon deriving dynamic proofs, to show that general equilibrium would tend to arise from perfectly competitive markets, and those who are content to leave dynamics alone, and to explore equilibrium concepts in their static aspects, because this division goes to the heart of the matter. Let us first concentrate on the dynamic side, to uncover an essential flaw, before re-interpreting the static approach.

With the assistance of computer methods for rapid calculation, some very sophisticated attempts have been made to build "models" of equilibrating processes. In effect, what these models do is to investigate the purely mathematical properties of the converging sequences of numbers generated by the functions from which the models are built. However, the task of bringing these essentially mathematical exercises to bear upon the realm of economic behaviour illustrates not merely how inadequate have been previous attempts at

¹This school of thought has tried to integrate Edgeworthian indifference-curve analysis and Paretian "optimality" with Walrasian general equilibrium theory, key works being K.J. Arrow's Social Choice and Individual Values (1951), 2nd ed., New York: John Wiley & Sons, 1963; Arrow and Debreu, "Existence of an Equilibrium for a Competitive Economy," Econometrica, Vol. XXII, July 1954, pp. 265-90; G. Debreu, Theory of Value, Yale University Press, 1959; and Debreu and H. Scarf, "A Limit Theorem on the Core of an Economy," International Economic Review, Vol. IV, Sept. 1963, pp. 235-46. Arrow provides a useful survey, embracing the contributions of other schools of thought, in his item on "Economic Equilibrium," Encyclopedia of the Social Sciences (1968), Vol. IV, pp. 376-89.

²See especially H. Scarf's The Computation of Economic Equilibria, New Haven and London: Yale University Press, 1973.

formulating dynamic theory, but even more so, just how truly complicated this theoretical endeavour is, apart from its mathematical discipline. If we consider the lack of success in duopoly theory, reported within the past few years, and bearing in mind that duopoly is in many ways a simpler case than perfect competition by virtue of the number of sellers involved,¹ then the prospects for perfect competition must be judged even less favourable.

To understand why even the most sophisticated of mathematical models have not managed to provide a satisfactory proof for the allegedly equilibrating tendencies of perfect competition, we need to recognise what mathematical logic by itself can and cannot accomplish.

When Samuelson quoted the statement, "Mathematics is a Language," on the title-page of his Foundations of Economic Analysis (1947), he was giving expression to perhaps the most profound error in the history of science in general, an error which lies deeply rooted in ancient thought.²

Language and logic are inseparably bound together, but they are nevertheless very distinct things, and to confuse them can lead to no end of trouble. To be communicated and understood, all propositions must be expressed in some language, that is, by some system of notation or set of symbols, and all concepts and propositions, whether they be formal and logical or descriptive, must

¹The belief that perfect competition is simpler than duopoly, in spite of the numbers of independent sellers, goes back to Cournot himself (Recherches, 1838, p. 101 - for which see above, Chapter V, section 4), and is founded on the now familiar and false sequence of inferences running from (1) large numbers to (2) individual powerlessness to (3) passive acceptance of some "given" price.

²Galileo made the celebrated statement, "The Book of Nature is written in mathematical symbols," adding that "Mathematical Principles are the Alphabet in which God wrote the world," while Roger Bacon believed that "the book of nature is written in the language of geometry." (See Morris Kline, Mathematics and the Physical World, London: John Murray, 1960, p. 135). The fundamental error consists in trying to treat the similarities between numerical sequence, spatial extension and temporal duration not as analogies but as strict equivalences - which they are not. The mathematical mysticism of the Pythagorean School (fl. 500s B.C.), suppressing any recognition of the so-called "irrational" numbers, is now legion. Because of their use of analogical forms of reasoning, ancient philosophers were very much preoccupied with paradoxes involving space, time and number. Since the 19th century, the philosophy of mathematics has been devoted to a similar set of paradoxes, based on analogies between space, time and number, in the search for the exact specification of the so-called mathematical "continuum." Max Black's The Nature of Mathematics, London: Routledge and Kegan Paul, 1933, provides as good an introductory survey as any in the philosophy of mathematics.

possess a meaning. It is only by examining their meaning that we can begin to discover their logical implications.

Mathematics is not a language, but is a field of logic, the logic (or logics) treating of the abstract relations subsisting between numbers, where abstract here means "considered apart from anything" (according to the original Latin roots of that word, ab and trahere, "to draw apart from").¹

Interpretors of mathematics have often spoken of this branch of logic as if its defining characteristic were the use of "symbols," that is, an abbreviated notation. But this is not so. Mathematics derives its special character from its substance, the study of abstract numerical relations, and not from the choice of symbols employed to express those relations. All expression of thought entails the use of symbols of one sort or another, and in fact mathematics, during its infancy and early growth as a recognized discipline, was formulated in ordinary prose, a prose which grew increasingly more clumsy as mathematical reasoning grew more complicated.² In time, the selection of more concise symbols and modes of expression occurred as a matter of notational convenience, to facilitate the manipulation of terms and concepts. For any field of discourse, the choice of symbols is partly arbitrary and partly a matter of historical contingency. Indeed, there is not, and never has been, any single

¹The foregoing is not a definition of mathematics. In actual usage, mathematics has long been a generic term, loosely referring to a wide and ever-changing field of logic. The very fact that the Greeks included their geometry (i.e. the logic of spatial forms of shapes and relations) under the general heading of mathematics has encouraged the belief that logical inferences about space and logical inferences about numbers are based ultimately on the same principles. The very great practical usefulness of measuring distances, by dividing them up into equal and discrete "units" and then treating them in numerical terms, has re-inforced this belief. Even though such analogical reasoning, pushed to the extreme, produces paradoxes, it has nevertheless made most of scientific progress possible.

²A case in point is Galileo's awkward and partially erroneous formulation of his famous laws of motion, for a good account of which see Charles C. Gillispie's The Edge of Objectivity, Princeton: University Press, 1960, pp. 3-7. The notational simplification of mathematics began in earnest in the 16th and 17th centuries (with Viète, Descartes and Leibniz), and it was only in 1557 that Robert Recorde first introduced his '=' sign, in order to (as he put it) "avoide the tedious repetition of these woordes: is equalle to." See the item, "History of Mathematics," in the Encyclopedia Britannica (15th ed., 1974) Macropedia, Vol. XI, pp. 639-70 (various contributors) and especially V. Sanford's item, "Mathematical Symbols," p. 649.

language or system of notation by which mathematical logic has been formulated and expressed.

As we have already seen from the previous chapters, in the transition from the classical "literary" style towards the more explicitly mathematical economics of neoclassicism, economists fell into the error of believing that what was needed was a translation of the "verbal" reasoning of classical theory into the "language" of mathematics. Now, strictly speaking, the process of translation involves expressing one and the same proposition in two different languages or systems of notation. That is all. But what the pioneers of mathematical economics were really attempting to do was to reduce or transform propositions about market behaviour (referring to events and objects in space and time, even if hypothetical) into purely mathematical propositions about abstract numerical relations. This was done in order to take full advantage of the kind of rigour that purely mathematical logic affords.

However, if mathematical logic is to be used to establish the validity of economic theorems, then a way would have to be found to incorporate that mathematical logic into an expanded behavioural logic referring not only to numerical relations, but to spatial, temporal, causal or whatever kinds of relations were embodied in the economic theorems in question. This is a far more difficult task than is generally recognized. Logical rigour consists in the precision and explicitness with which terms (or concepts) are initially defined, but also in the consistency and explicitness by which those terms are subsequently substituted for one another and manipulated, according to formal rules of substitution and manipulation.

Thus, mathematical logic alone cannot establish the logical validity

of extramathematical inferences,¹ nor can informal or casual definition and translation of terms, nor can the informal reasoning which may follow from these. But we must not despair. Certain kinds of economic theorems, those referring solely to the numerical relations subsisting between economic concepts, can be established as formally valid, on the strength of mathematical inference, when strict translational procedures are adopted and adhered to.² In future, it will be the task of mathematical economics to distinguish between those theorems which can be so constructed and those which cannot. In these few concluding pages, I can do nothing more than briefly suggest how these logical issues affect competitive doctrine.

It is highly unlikely that propositions linking empirically distinct events and situations (whether these be actual or hypothetical) are capable of being formally deduced and demonstrated as logically valid, because the logical relation of entailment does not extend through space and time (as do causal relations) but is the purely arbitrary creation of conscious thought. Logical validity rests solidly upon the basis of consistency in the use of terms to express

¹To clarify the distinction between purely mathematical and extra-mathematical statements (and the different logical implications they lead to), let us consider first the expressions: m1: $X = f(Y)$, where m2: $Y = 2X + 3$. Here, m1 and m2 are interpreted in purely mathematical terms, referring solely to the abstract numerical relations subsisting between sets of numbers, 'X' and 'Y' being variables ranging over the sets of numbers $\{(1, 5), (2, 7), (3, 9), \dots\}$, and 'f' being a function, or rule for associating these sets of numbers. Suppose, however, that we decide to interpret these symbols in an economic manner, for example, by defining 'X' as the numerical value of the minimum unit cost of producing an economic good, and 'Y' as the numerical value of the quantity of output of that good. Here, e1: $X = f(Y)$ is no longer a purely mathematical expression, but an extra-mathematical statement about a numerical relationship between economic concepts. For some further comment on the problems and limitations of formal translation, see the note immediately following.

²To cite a very simple example, suppose that 'P', 'MR', and 'MC' are defined as unspecified numerical values, so that the two purely mathematical propositions, m1: $P = MR$ and m2: $MR = MC$, together yield by logical inference the purely mathematical conclusion, m3: $P = MC$. Then, 'P' could be re-defined as the numerical value of price, and similarly for 'MR' and 'MC', such that an economic (i.e. extra-mathematical) argument could be framed around a mathematical argument, leading to the economic conclusion, e3: Price equals marginal cost. However, we cannot use these simple translational procedures to construct an economic theorem around m1-m2-m3, having the behavioural character of this sort: "If sellers seek maximum profit and face infinitely elastic demand for their output, then they will set price equal to marginal cost." This type of inference would require a more elaborate behavioural logic and grammar.

meanings.¹ Logical entailment, including mathematical inference, can apply to single events or situations which are complex in their nature (as is, for example, a general equilibrium state of affairs), and it is in this sense that the distinction between static and dynamic propositions come back into focus, since general equilibrium can be construed as a single complex situation.

So, let us turn one last time to the problem of dynamics. I shall cite but one example, Edmond Malinvaud's elegant and concise Leçons de Théorie Microéconomique (1969), to illustrate the nature of the problem.² In the opening chapters I to IV, Malinvaud admirably sets forth the main elements for the micro-economic analysis of markets, employing the concept of general equilibrium. Here, in effect, he is constructing a taxonomy of economic possibilities, mapping the various constraints which limit or reduce all possibilities to those which are more or less favourable, according to certain specified criteria for evaluating results - criteria such as efficiency and justice.

It is only when Malinvaud tries to link the concept of general equilibrium to that of perfect competition that he begins to run into serious difficulties. In his gallant attempt to validate Walrasian dynamics, Malinvaud does not claim to have furnished a complete and final proof for the equilibrating tendencies of perfectly competitive markets, but he does claim to have succeeded in formulating some partial proofs,³ and this is enough to make us inquire into the adequacy of his demonstrations.

The chief difficulties lie not in the mathematical portions of his

¹Of course, I do not mean here that we can establish at will the logical validity of any proposition we choose, but only that logical truth flows from the consistency with which our symbols are used to express meanings.

²Malinvaud's Leçons (Paris: Dunod, 1969) is perhaps better known to English readers as Lectures on Microeconomic Theory, Amsterdam and London: North Holland, 1972, though the English edition differs in details from the French.

³In his Lectures, Malinvaud describes his theory as an imperfect picture of price determination (p. 105) and Walrasian tâtonnement as a "fairly extreme idealisation," (p. 140). Various other candid comments throughout his text, alluding to the limitations of the theory, do tend to create some doubt as to what Malinvaud believes he has proven.

argumentation, though mathematical rigour certainly is one of the vitally important aspects of equilibrium analysis, ensuring internal consistency of the quantitative relationships being examined. Instead, the problems concern the way in which Malinvaud tries to bring his mathematical logic into contact with the extramathematical, and especially the behavioural, components of his theory, and even more so, in the specification of his economic concepts themselves. Two sources of perplexity will suffice to illustrate.

At the outset of Chapter I, Malinvaud explicitly defined economics as "the science which studies how scarce resources are employed for the satisfaction of the needs of men living in society,"¹ and shortly thereafter, he states that "microeconomics" is called "micro-" because "in its abstract formulations, it respects the individuality of each good and each agent."² Both of these are eminently reasonable statements. However, when Malinvaud reaches the stage of formulating his theory of tâtonnement, he finds himself obliged to violate both of these initial stipulations.

First, in order to make his mathematical logic work effectively, using the concept of the "limit" for converging infinite series, Malinvaud abandons his defining characteristic of economics, namely, scarcity of resources, arguing that his logical apparatus can be built up for an "imaginary economy" wherein "it is permissible for us to assume that w increases with x so that the ratio w/x remains constant as x tends to infinity,"³ ' w ' being defined as initial resources and ' x ' the number of consumers of an economy.

Later, Malinvaud runs up against another problem in regard to the number of "agents" (consumers and producers) to be specified in his model, the problem of collusion in market bargaining. With free entry, combinations of

¹Lectures, p. 1, and Lecons, p. 1 reads "des ressources rares."

²Lectures, p. 2, emphasis added. Also in Lecons, p. 2.

³Lectures, p. 169.

traders can "block" Pareto-optimal situations, necessary for equilibrium,¹ Therefore, Malinvaud introduces some very obscure terminology, whereby "atomistic" economies are distinguished from "atomless" economies. In the latter, Malinvaud states that "no unit is an undissociable entity of appreciable size relative to the whole,"² where "units" refer to his agents, that is, consumers and producers. The individuality of each agent would seem to be lost.

Both of these examples raise questions, not merely about the internal consistency of his theory (i.e. scarce versus infinite resources, distinct versus "undissociable" entities), but more critically about the conceivability of the concepts referred to. For, logical rigour depends upon our being able to grasp the meanings of the terms employed, and while abstraction allows us to isolate and consider hypothetical possibilities, it does not permit us to escape the rigours of logic and of logico-semantic clarity.

There can be no doubt that the genuine advances made in the field of mathematical economics have greatly improved our ability to analyze complex economic concepts in their quantitative aspects. The ever-present danger is that an undue emphasis placed upon mathematical rigour for its own sake will result in a double standard of logical rigour - mathematical sophistication being achieved by the neglect of semantic rigour.

Rather than dwell any further on this negative point, let us consider the history of competitive dynamics in its more positive light. Even though it has not proved successful, the study of competitive market dynamics ~~was~~, rationally speaking, worthy of being investigated in the first place, if only to explore the problems involved; and furthermore, indirectly it helped to bear fruit in other fields, by shoring up confidence in the study of equilibrium for its own sake. To round out this assessment of competitive theory in its logical setting, I shall refer briefly to the potentialities of static analysis.

¹Lectures, Ch. VII, pp. 170ff.

²Lectures, p. 164, emphasis added. The passage cited here did not appear in the French edition (see Lecons, p. 139). Malinvaud's Ch. VII is entitled "Economies with an infinite number of agents" (or "Economies Groupant des Agents Infiniment Nombreux").

If equilibrium situations cannot be ^{proved} shown to arise out of any specific patterns of behaviour and institutional circumstances, then, one might legitimately ask, wherein lies the scientific value of equilibrium analysis? An answer to this question has already been supplied by G.B. Richardson in his book entitled, Information and Investment (1960). Having lucidly examined several of the difficulties encountered in the dynamics of competitive market equilibration, particularly in regard to the long-run decisions effecting capital investment, optimal scale and productive capacity, Richardson went on to draw this rather far-reaching conclusion:-

The theory of perfect competition offers us, under the guise of an equilibrium position, a particular configuration to which the organization of production and exchange could conform, a configuration moreover which has important normative characteristics. But the theory provides us, neither with a satisfactory account of how this state of affairs might come about, nor with a blueprint of the institutional or market arrangements which would best promote it.¹

In essence, Richardson was taking the Edgeworthian view one further and natural (and one might almost say inevitable) step forward, away from the realm of "theory" towards that of "technique." "All that had genuinely been demonstrated," he wrote, "was the logical possibility of a hypothetical economic arrangement with certain harmonious properties."²

Interpreted as an abstract technique rather than as a theory, the concept of equilibrium becomes nothing more than a formal definition of various aspects of economic efficiency (in production and allocation) and of justice (in distribution, in qualified terms, as Pareto-optimality). Here, mathematical logic ensures only that the quantitative properties of equilibrium are mutually and internally consistent, thus guaranteeing only the logical possibility that such an equilibrium could conceivably be reached. The truly economic logic rests, in large measure, upon the appropriate translational procedures and definitions of

¹G.B. Richardson, Information and Investment, Oxford: Clarendon Press, 1960, p. 45, emphasis added.

²ibid., p. 45, emphasis added.

economic concepts to be framed around the mathematical skeleton.

Furthermore, equilibrium analysis can be employed to investigate the kinds of adjustments that would have to be made in the relevant quantities required for equilibrium to exist, if the parameters or constraints defining the equilibrium were themselves altered,¹ though this method of comparative statics would not be construed as the study of the processes of adjustment, but only of the comparison of possible and ideal states of affairs. Neither behavioural patterns nor institutional connections would be proven. However, in applied economic analyses of actual economic behaviour and institutions, the techniques of abstract analysis, in conjunction with other techniques, such as statistical description, could be employed to elucidate the nature of economic inter-relationships, not with the end in mind of establishing "theories," but simply with the aim of better understanding concrete situations and problems of the real world. This is the professional role of the economist.

The foregoing re-interpretation of the purposes of abstract economic analysis was set forth in this chapter, because, in the past, so much of that abstract body of knowledge and analytical skill has been thought to depend upon the validity of the theory of perfect competition. Yet, the divorce between that theory and the set of concepts and tools it helped to produce does not constitute so discontinuous a step in the history of economic thought as it may first seem. In truth, this separation has been in the making for a very long time. Even if now the theory of perfect competition is relegated to the annals of history, (and a very eminent place in history it will occupy) that theory nevertheless stands as one prominent link in a long evolutionary process, a process which began with the classical tradition of "empirical law," advanced into the neoclassical tradition of abstract or hypothetical "theory," and has now reached the stage of abstract technical analysis.

¹I must acknowledge my debt here to Mr. J.S. Flemming, who drew my attention to this point, at a stage in my work when I had been overlooking this role for equilibrium analysis.

Many different strands of thought, stretching out across several decades and centuries, are intertwined with one another in such a way as to bind these three traditions - of empirical law, abstract theory, and analytical technique - into a strong and enduring continuum. I shall cite but one very instructive example which highlights the role of competition in this evolving scheme. During the first half of the 19th century, competition had been singled out as a behavioural principle in contrast with co-operation. Gradually, this contrast was adapted to the needs of the economic calculus in such a way that a parallel was drawn between the ideas of substitution and complementarity, whereby the behavioural relationships were transformed into purely functional relationships entering into the logic of rational choice, as part of the economic calculus.

Building upon the foundations laid by Edgeworth, Pareto and others, economists in the 20th century have sought to refine their analytical principles, and we can see this programme being carried out most elegantly in a work such as Sir John Hicks' Value and Capital (1939), wherein a deeper appreciation of the subtleties and complexities of economic inter-relationships was achieved by taking the earlier theories of neoclassicism much further into the realm of abstract logical rigour.¹

Albert Einstein once said of Sir Isaac Newton (whom he much admired) that the greatest praise a scientist could bestow upon his predecessor was to say that his theory had not been repudiated but had been incorporated as one integral part of a much greater theory. In this vein, we can say that the theory of perfect competition has not been replaced by a more general theory, but by a more logically rigorous and hence more enduring body of abstract analytical technique.

As evidence that this transition has already occurred in practice,

¹Hicks, Value and Capital (1939), 2nd ed., Oxford: Clarendon Press, 1946, in particular, Ch. II on Complementarity and Ch. VII on Technical Complementarity and Technical Substitution.

we could cite many recent studies, such as General Competitive Analysis (1971) by Hahn and Arrow, in which general equilibrium concepts and techniques are employed not to construct behavioural theories so much as to formulate quantitative rules or principles of an economic calculus. In a great many of the current treatises on mathematical economics, the adjective competitive has been almost completely emptied of its former behavioural content, and has acquired a technical meaning which renders its continued presence in this branch of economics quite superfluous. It is now usually defined in such a way that it refers to any and all situations in which price is taken as "given," that is to say, in which prices are treated as vectors in set-theoretic analysis.¹ In effect, the phraseology of competition has become virtually synonymous with, and indistinguishable from, the phraseology of equilibrium, such that "competitive" means little more than "pertaining to equilibrium."

One might reasonably ask, then, why competitive terminology still finds its way into abstract mathematical economics, so long after the effective cessation of its relevance to that branch of economic thought? Probably for the same reason that Marshall chose to retain the phrase, "the law of diminishing returns," at a time when the concept of diminishing returns had become merely a part of a classification scheme (constant, increasing and diminishing returns) and no longer had the classical character of an empirical "law."

The reason is that scientific terminology often lags behind scientific progress, preserving a sense of continuity between past and present, allowing scientists to push forward without seeming to destroy former achievements. The scientific enterprise is, by its very nature, both progressive and conservative. It thrives on controversy and independently-minded inquiry, ^{but} and genuine and enduring advances can only be acknowledged and consolidated by the scientific community at large. General consensus usually requires that due

Hahn and Arrow, op. cit., exemplify the current trend when they state the matter thus: "An (uncompensated) competitive equilibrium has the meaning usual in the economic literature: a set of prices and production and consumption allocations such that each firm maximizes profits at the given prices," (p. 107).

recognition be accorded to the positive accomplishments of those who came before, preparing the ground for those who came after. Scientific "progress" inevitably means that errors and limitations of previous work will be uncovered, but it also means that any new advances must depend to a large extent on the accumulated merits of that same reservoir of scientific experience.

Terminological "lag," such as we find it in the case of competition, helps to subdue and temper those disruptive tendencies which may arise from the healthy tension between progress and continuity.

5. Conclusions

I began this chapter by asserting that the judgements we make about the idea of economic competition in general, in its broadest sense, should be carefully distinguished from the judgements we make about the very much more specific concept of perfect competition and the scientific theory that has been associated with it.

Before venturing some conclusions about the broader notion itself, I shall recapitulate, in a very concise fashion, the various classes of judgement I have made about the scientific concept and theory, in the previous sections of this chapter.

(1) Empirically, the theory of perfect competition has not yet been adequately tested and confirmed, though a very much weaker hypothesis about the possession and exercise of market power has been consistently supported by empirical evidence, leaving in doubt some of the conflicting claims as to static and dynamic efficiency.

(2) Logically, the theory of perfect competition has not yet been demonstrated, in a fully rigorous and explicit manner (with appropriate translational procedures), to yield valid inferences about human behaviour, though the theory is framed loosely around a mathematical apparatus which does afford a rigorous means for exploring the properties of equilibrium, set apart from any behavioural or institutional context.

(3) Conceptually, the idea of perfect competition falls short of the scientific requirement of generality, because it does not capture all the essential meaning of economic competition, being narrowly confined to the context of market exchange, leaving in doubt the exact nature of competitive grouping, and giving attention only to the passive and equilibrating (as distinct from the innovative and disequilibrating) tendencies of competition.

(4) Normatively, the concept of perfect competition is not imbued with those virtues or ideal qualities which have been, or which might be, ascribed to the broader concept of competition according to a classical or liberal philosophy. For example, it highlights the constraining and conforming features of competition, at the expense of the freeing and individualizing features.

To these, one could add a fifth category of argument.

(5) Methodologically, both the concept and the theory of perfect competition have been defended as serving in the role of a "useful analytical tool," but it is not at all clear what is meant by this in present-day circumstances. How can a theory act as a useful tool of analysis, when its logical inferences have not been demonstrated, its empirical hypotheses have not been tested and confirmed, and its concepts, on close inspection, lack generality and precision (i.e. in regard to grouping)?

If the concept and theory of perfect competition are judged faulty on all of these counts, how then can we justify its existence in history?

(6) Historically, the vague notion of perfect competition in the classical period served reasonably well as a rough-and-ready empirical account of actual market behaviour. As it became more sharply defined in the neoclassical era, it served as a useful heuristic fiction, allowing economists to develop abstract concepts and methods of equilibrium analysis. Even though it is no longer scientifically acceptable, at one stage in history it was rightly explored as a rational possibility, and the strategic place it now occupies in the history of economic thought is accounted for by its formative influence upon the development of a body of abstract techniques which were once so closely

associated with it but which now transcend it.

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There remains only to answer one final question: What status is to be given to the concept of economic competition in general, that is, in its very broadest sense? To answer this question is to summarize, in a more decisive and resolute manner, the four key themes enunciated at the outset of this history.

In setting down my personal views on this intricate subject, I shall try as far as possible to distinguish between the cognitive and the emotive dimensions. To repeat, the cognitive/emotive distinction separates the scientific from the moral, the objective from the subjective. It contrasts fact with attitude, or empirical and descriptive statement with evaluative and prescriptive judgement. I say that I shall "try" to maintain this distinction, because ultimately it begins to break down as we enter into the semantics of the matter. The subtle shades of meaning each of us chooses to attribute to the word will in part reflect the attitude we have towards the realities which the word is intended to cover. Even so, the distinction is worth trying to maintain.

To express my outlook as tersely as I can, I will say this:

A. In the cognitive sense, economic competition is a ubiquitous fact of life, but it is not "law-like" in its manifestations.

B. In the emotive sense, there is nothing inherently good or bad about economic competition in general, and any value judgements that are to be made about it should be in regard to specific and context-bound circumstances.

Let us examine some of the implications of these two statements, and first, the statement that economic competition is a ubiquitous, and one might almost say universal, fact of life. According to common usage of the words economic and competition, there is no good reason to say that "economic competition," by its very meaning, is either limited to, or co-extensive with, "market competition," in the traditional sense of bargaining and exchange between buyers and sellers of goods and services, though that traditional arena of

economic behaviour is obviously still the single-most important setting for much economic competition.

Wherever disagreements arise between human beings as to the production of wealth, the allocation of resources, and the distribution of income, and wherever those disagreements are disputed and, in some way, resolved by "civilized" forms of conflict, then it could be said that economic competition has occurred, though precise boundaries for this range of meaning are difficult to lay down, for the reasons which were outlined in Chapter I.

Thus, economists were quite correct in seizing upon the principle of competition for their investigations into economic behaviour. The concept, understood in its broadest sense, is as relevant today as it has been since the very inception of economic thought itself. However, this same wide-ranging applicability of the concept does not imply that economic actions must follow regular, systematic or "law-like" patterns. On the contrary, the fact that the word does encompass such a wide spectrum of human behaviour makes it all the less likely that rigid and uniform patterns of behaviour be associated with it. The very meaning of the word suggests diversity and complexity, not simplicity and precision.

For some, this may seem to pose a dilemma. If competitive striving is not law-like, how then can economics be considered a "science"? For, historically, that science grew up around the belief in competition as a principle of law-like simplicity. As with so many intellectual disputes, the positions we adopt depend to a large extent upon our initial terms of reference. Science originally meant the pursuit of knowledge of any and all kinds. Renaissance man turned that into the more narrowly defined pursuit of simple and general laws governing the world. But where those aspects of reality, to be explained by scientific law, are themselves complex by their very nature, then the dual search for generality and simplicity is a dilemma of our own making.

Competition poses another dilemma for economic science, when it is

interpreted as the search for rigid and precisely specifiable laws governing human behaviour. So defined, the scientific enterprise rests upon the metaphysical hypothesis of "determinism," that is to say, the belief that the universe is a "closed system" in which every effect has its cause, and thus in which there is a causal explanation for everything. But, by its very essence, competition refers to economic behaviour in its consciously, deliberately, rationally "voluntary" aspects, the exercise of "free will," even if that includes the clash between opposing free wills of different people.

Now, freedom - whether it is an illusion or a reality, for the scientific mind to deal with - must be understood either in the positive sense, as the ability to take decisions, or in the negative sense, as the absence of any complete and total constraint over our actions. Either way, positive or negative, it suggests to us, intuitively, the possibility of a partially "open" universe, wherein to take a decision is not to conform inevitably to some pre-determined causal chain of events, but to take, as it were, a "leap in the dark" (causally, rationally, and logically speaking) into the uncertainty of the future. All our intuitions about freedom strongly suggest that the world is not an entirely closed system, only a partially closed system, in which all our decisions are made in the face of an incomplete set of constraints which together define the range of possible alternatives open to us.

Thus, whether an illusion or not, competition "seems" to be an open-ended process. When people engage in competitive striving (as with any other kind of striving), they summon up all that human ingenuity can offer. Even though we can often observe typical or repeated sequences of events, for example, in the way that prices respond to changes in supply and demand, these approximate uniformities, which make the world appear an orderly place, are only one half of the total reality. The other half of that same reality includes people who are engaged in competitive struggles, attempting to escape those very confines of uniform repetition.

The longstanding dilemma of reconciling the deterministic bent of science with the appeal of freedom is incapsulated, for economics, in the idea of competition. The most sensible and satisfactory way to resolve this dilemma is to accept the reality of the world as a closed system, for scientific purposes, but at the same time to acknowledge that there are modest and realistic limits to the kind of scientific knowledge that we can learn about our own behaviour, as one part of the functioning of this closed system, limits which are set by the human intellect itself.

On the emotive side, competition will always be subject to controversy, whatever the social and institutional setting, because those who express an opinion about the concept will project a part of themselves into that concept. People who are physically, emotionally, materially and otherwise well-endowed to engage in competition, will do so, naturally and without thinking about it, as a normal aspect of living and coping. Those who are less well-endowed, by way of temperament and aptitude - and, in varying degrees, that includes most of us - will, upon deliberate consideration of the subject, find something special about competition, be it desirable or distasteful, which will reflect some portions of their own uniquely individual experiences, however closely or remotely connected those experiences may be to the common-sense or ordinary meaning of the term.

Thus, because the word competition ultimately lacks any truly precise meaning, upon which every one could agree, it will inevitably conjure up for each of us somewhat different connotations, loose mental associations which no formal attempt to define the term can eliminate from our minds. Hence, much of the controversy over the normative status of competition will be seen to derive from semantic disputes over what the word "really" means. Consider the question as to the inevitability of competition. Can it or should it ever be eliminated?

Well-meaning and compassionate idealists will insist that competitive striving is not universal and can be avoided, given the right set of institutions

and the right frame of mind. Among those who have in the past intimated, in one way or another, that competition - that "struggling to get on, the trampling, crushing, elbowing, and treading on each other's heels" - would not be a feature in their ideal world, are included not only the many and various propounders of socialist or communist utopias, or social anthropologists who have visited remote and primitive communities, peacefully established on the islands of the South Pacific, but even some of those who understood their contemporary surroundings in largely classical-liberal terms.

The difficulty with this anti-competitive attitude is that, for all but the most stable, isolated and traditional societies, disagreements about the production and distribution of material wealth do inevitably arise, and must be resolved, somehow. As I tried to indicate in Chapter IV, the kinds of solutions offered by the would-be eliminators of competition only seem to avoid any reference to that concept, by defining it in too rigidly narrow terms, according to only one institutional setting. Wherever social conflicts arise and are resolved, by civilized means, competition of some kind occurs. The mistake is to think that most competitive struggles are voluntarily and deliberately entered into, for their own sake, by the participants involved. More often, people find themselves caught up in a competitive struggle which was no part of their intention to bring about and for which they have no liking.

By way of contrast, the pro-competitive proponents - those who style themselves as tough-minded realists - are not content simply to say that competition is inevitable, so that we should learn to live with it; they want to go much further, by arguing that we should also learn to like it, and perhaps even see in it a beneficent panacea for all the world's ills. Competition, according to them, should be encouraged for its own sake.

In its extreme formulations, the pro-competitive argument is based upon the naturalistic fallacy: Because a thing is an inevitable part of the nature of things, it must be good, because Providence designed things that way.

Putting questions of religious faith to the side, this general presumption in favour of competition is supported neither by semantic considerations nor by the full weight of empirical evidence.

In occupying the middle ground, I certainly do not intend to leave myself open to the charge of indecision, nor do I thereby wish to suppress or deny any faculty for making moral judgements. As I have said earlier in this chapter, valid moral judgements can and should be made about competition, but only with respect to specific or context-bound circumstances, each judged on their own merits. And so often those value judgements concern not whether competition should be promoted or eliminated, but rather which kind of competition is to be condemned or condoned.

If I have placed so much emphasis upon the dualities of the concept, it is because, as the foregoing history has shown, so often in the past, people have advanced extreme interpretations which do not bear up well under closer and more dispassionate examination.

So I end more or less where I began, by observing that in the history of economic thought competition is first and foremost only a word, a word which may or may not be used effectively, in economic discourse, to communicate propositions about realities.

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