

brief treatment of how reasonable social choices are to be made in a fractionated economic society headed toward an unknown future in a world of conflicts. Fundamental issues raised by Kenneth Arrow, Mancur Olson, James Buchanan, Robert Axelrod, and their critics are not mentioned. Practical concerns arising from recent experience with economic planning in other countries are not addressed.

Gruchy has produced an unfortunately narrow account of contemporary institutional economics. For the full story one must look elsewhere, to the brief essay by Warren Samuels in *The new Palgrave* (Vol. II, pp. 864–866) for antecedents and themes, and to two survey issues of the *Journal of Economic Issues* (Vol. XXI, No. 3–4, September–December 1987) for a broader view of contemporary institutional economics.

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Edgeworth and the development of neoclassical economics. By John Creedy. New York: Basil Blackwell, 1986. Pp. viii + 165. \$39.95.

It is high time that historians of economic thought accorded to Edgeworth the attention routinely given to those of his contemporaries—Marshall, Pareto, Wicksell—who were his intellectual equals. Professor Creedy's brief though expensive book is a first and potentially useful step in this direction.

For most of his professional life Edgeworth, like today's economic theorists but unlike his contemporaries, chose to publish articles rather than books: "For forty years a long stream of splinters split off from his bright mind to illumine (and to obscure) the pages of the *Statistical* and *Economic Journals*." (J. M. Keynes, *Essays in biography*, 1933, p. 285). A complete bibliography of his works does not exist but would include at least 4 monographs, 172 articles (several in multiple parts), pamphlets and notes, 173 book reviews, and 132 entries in Palgrave's *Dictionary of political economy*. Shortly before he died, the Royal Economic Society published in 1925 a severely self-edited collection of some of these papers in three large volumes; many of them remain, however, as yet unexamined.

Confronted with this abundance of varied and subtle material, Professor Creedy wisely decided to concentrate on Edgeworth's life and on the two slim, early books *New and old methods of ethics* (1877) and *Mathematical psychics* (1881), abbreviated here to *NOME* and *MP*. Creedy's first chapter is chiefly biography, his second discusses *NOME*, and the third, fourth, and fifth are devoted mainly to *MP*. Chapters 6 and 7 deal all too briefly with some of Edgeworth's papers on exchange, distribution, taxation, and international trade, and chapter 8 concludes.

The many editorial notes on *MP* in the appendix will certainly help students of that great but tantalizing book, since as modern economists they are unlikely (alas) to have had that solid grounding in Greek, Latin, and English literature which Edgeworth took for granted in his Victorian readers.

Professor Creedy's extensive discussion of Edgeworth's neglected first book (*NOME*) is especially welcome, since the analysis in its second half is important both in itself and as prologue to the much better known *MP*. Recall that the second

part of *MP*, 'Utilitarian calculus' (pp. 56–82), originally appeared in *Mind* in 1879 as an article clearly meant to be—indeed only fully understandable as—a sequel to the "exact utilitarianism" of *NOME* (p. 39). It is unfortunate that past discussions of Edgeworth's utilitarianism have usually been confined to *MP*, since an appreciation of his intellectual development from the exact utilitarianism of *NOME* in 1877 through *Mind's* 'Hedonical calculus' of 1879 to the 'Economical calculus' (pp. 16–56) of *MP* in 1881 is essential to full understanding.

Beginning in 1879, Edgeworth had the good fortune to learn economics from his friend and neighbor Jevons and by 1881 had learned enough to achieve his principal, utilitarian, aim, which was to show that: "(α) Contract without competition is indeterminate, (β) Contract with *perfect* competition is perfectly determinate, (γ) Contract with more or less perfect competition is less or more indeterminate" (*MP*, p. 20). Thus (p. 56): "*competition requires to be supplemented by arbitration, and the basis of arbitration between self-interested contractors is the greatest possible sum-total utility.*"

On the path to this (for him) highly satisfactory conclusion, Edgeworth invented such basic concepts as the general utility function, indifference curves, Pareto optimality, and the core. But these were all tools to achieve his purpose, not the purpose itself. Professor Creedy's full appreciation of Edgeworth's intentions and achievements in this regard should put paid forever to those simplistic discussions of *MP* which treat it merely as a precursor of the partial equilibrium demand theory of Fisher, Pareto, and Slutsky.

However, at several points Creedy's analysis can be questioned. For example, Edgeworth first used Lagrange multipliers in *NOME* not for the finite dimensional case on p. 43 discussed by Creedy, but in a problem of the calculus of variations introduced earlier on p. 38. Creedy also omits any discussion of Edgeworth's introduction (on p. 44 of *NOME*) of the idea of a continuum of economic agents, 83 years before Aumann's classic paper in *Econometrica*, 1964. In general, the author seems at home neither with the subtle and sophisticated variational approach used throughout *NOME* and the Hedonical Calculus, nor with modern treatments of the core.

In six places (pp. 52, 65, 69, 70, 73, 79) Creedy claims explicitly or implicitly that competitive equilibrium of exchange is unique, and in two of them (pp. 70, 79) that Edgeworth proved this, e.g. "He showed. . . how a unique determinate exchange rate results from competition among a very large number of traders" (p. 79). Since such equilibrium is certainly not unique in general, it is difficult to see how Edgeworth could have proved that it is, and indeed one looks in vain for such a proof in *MP* (a book cannot be criticised for not including a proof of a false theorem).

However, it does seem fair to conjecture that: (A) While Edgeworth strongly suspected that the competitive equilibrium of his exchange system was unique, he had no actual proof; (B) He was acutely aware that Walras and Marshall had earlier given examples of multiple equilibria in each of their own systems; (C) Hence, he decided against any clear assertion on the matter. (This conjecture differs somewhat from the view expressed in my article on Edgeworth in *The new Palgrave* [1987, vol. 2, p. 95], whose draft was complete before Professor Creedy's book became available).

The book's scholarly usefulness is seriously impaired by some errors of fact, several misprints, and phenomenally many inaccurate quotations. A few factual errors are: Maria Edgeworth wrote not the whole but only vol. II of the *Memoirs* of her father Richard Lovell Edgeworth (*RLE*) (p. 7); vol. I was by *RLE* himself. It was not *RLE*'s great-grandfather who figured in the romantic incident at Chester cathedral, but his great-great-grandfather (p. 8). Edgeworth did not serve as "editor or co-editor" of the *Economic Journal* "from its first issue until his death in 1926" (p. 19). In 1911 he gave way to Maynard Keynes and became Chairman of the Editorial Board; in 1919 he became Joint Editor with Keynes.

The several misprints (e.g., *Humaniars* for *Humaniores* [p. 9], *Researches* in the *French* title of Cournot's book [p. 136] are merely a nuisance. Much more troublesome are the many passages carelessly misquoted or mis-referenced by Creedy, which is not without irony in view of his own complaint concerning Edgeworth's "often inaccurate, references to other authors" (p. 135). I count more than 60 such passages with one or more significant errors.

Sometimes these errors are relatively harmless, probably the result of illegible copying: thus, 'product' for the correct 'productivity' (p. 107), 'heights' for 'flights' (p. 109), 'foundation' for 'fountains' (p. 125), 'profit and loss' for 'profitableness,' and 'comparison' for 'disparagement' (p. 126). I especially enjoyed his misquotation (p. 31) of Edgeworth's own misquotation (p. 35 n.1 of *NOME*) of a passage in Sidgwick's *Methods of ethics* (1874, 1st ed., p. 386), a comedy of errors in which Sidgwick's phrase "must necessarily be rough" is weakened first to "must be rough" by Edgeworth and then further diluted to "may be rough" by Creedy.

Quite often, however, the misquotation or misreference is such as seriously to damage the quotation's usefulness. Thus, the reference on p. 25 of Creedy to "the voluptuary and the Hegelian" is not from p. 70 of *NOME* as alleged, but from p. 30. Again on p. 25, the quotation from Maria Edgeworth includes the abridged passage "he observed how much . . . our real tastes are gratified," whereas the original passage reads rather differently, viz: "he observed how much, or rather how little, our own real tastes are gratified."

Our hopes that these many blemishes will eventually be removed, since they mar a book that will otherwise be quite useful to the serious student of Edgeworth.

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Economic development: the history of an idea. By H. W. Arndt. Chicago and London: The University of Chicago Press, 1987. Pp. 212. \$20.75.

In his essay on economic development H. W. Arndt sets himself the task of tracing the evolution of ideas about the objectives of economic development policies in the third world. He tells us that he is concerned with the changing views on the ends, not the means, of policy and explicitly denies the intention of giving an account of the history of development economies. Inevitably he fails to live within his constraints and has produced an admirably succinct history of development economies that has quite a lot to say about means.