

REVIEW OF EDGEWORTH'S *MATHEMATICAL PSYCHICS* (1881)

by

William Stanley Jevons

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[Note on Electronic Edition: This is an electronic version of William Stanley Jevons's review of F.Y. Edgeworth's treatise, *Mathematical Psychics*, from *Mind*, 1881, Vol. 6, p.581-83. Page numbers in bold square brackets, e.g. **[p.582]** denote the beginning of the respective page in the original *Mind* version. Page numbers in normal brackets, e.g. (p.66), were inserted by Jevons and refer to Edgeworth's book.

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***Mathematical Psychics: An Essay on the Application of Mathematics to the Moral Sciences.* By F.Y. Edgeworth, M.A., Barrister-at-Law. London: Kegan Paul & Co., 1881. Pp. viii., 150.**

Whatever else readers of this book may think about it, they would probably all agree that it is a very remarkable one. The fearless manner in which Mr. Edgeworth applies the conceptions and methods of mathematical physics to illustrate, if not solve, the problems of hedonic science, is quite surprising. As the invisible energy of electricity is grasped by the marvellous methods of Lagrange, so may the invisible energy of pleasure admit of similar handling. The soul is likened to a steam car moving upon a planed in a direction tending towards the position of minimum potential electro-magnetic energy, but with inconceivably diversified degrees of freedom. The book proceeds upon the conception of Man as a *pleasure-machine*; but the great difficulty seems to consist in the fact that society is a great aggregate of such machines, the collisions and compacts between which "present an appearance of quantitative regularity in the midst of bewildering complexity resembling in its general characters the field of electricity and magnetism" (p.15). It would be a great mistake, however, to suppose that Mr. Edgeworth's investigations, though stated in so daring and apparently erratic a manner, are devoid of scientific basis and exactitude. The book is one of the most difficult to read which we ever came across, certainly the most difficult of those purporting to treat of economic science. But it may, nevertheless, be recognized in the future as containing new and most important suggestions. Starting from such empirical bases as Fechner's law, Wundt's curve of pleasure and pain, or Delbœuf's formulæ, Mr. Edgeworth undertakes to determine the distribution of means and of labour which shall be conducive to the highest aggregate of well-being. Some of the conclusions drawn are very curious, but after a little consideration will probably commend themselves to the common sense of the reader. Thus (p.66) the **[p.582]** distribution of labour as between the equally

capable of work is equality, and generally is such that the most capable of work shall do more work -- so much more work as to suffer more fatigue. The general tendency of Mr. Edgeworth's philosophy is towards a hierarchy of social ranks rather than rigid equality. Considering that the highest in the order of evolution are most capable of education and improvement, he holds that in the general advance, the most advance should advance most. It is deduced that population should be limited, so that pleasure-giving means should not be too much attenuated. But the hedonical conclusion on this head is not necessarily of the same extent as the Malthusian. A good specimen of the kind of problem which Mr. Edgeworth has the courage to attack is stated on p. 69, namely -- "*Not* assuming that all sections (of society) multiply equally, to find the average issue of each section, so that the happiness of the next generation may be the greatest possible". The general answer, if we gather it rightly, is that the average issue shall be as large as possible for all sections above a determinate degree of capacity, but zero for all sections below that degree. The last deduction has been carried into effect in poorhouses since 1834, but it is to be feared that outside of the poorhouse the returns of the Registrar-General would show great divergence from Mr. Edgeworth's megisthedonic curves.

The remarks upon the hedonic bearing of our social institutions are often very interesting. Thus Mr. Edgeworth evidently regards the custom of family life favourably as compared with communistic education, because it secures for the better born better education. He also concludes that "account being taken of existing, whether true or false, opinions about the nature of woman, there appears to be a nice consilience between the deductions from the utilitarian principle and the disabilities and privileges which hedge round modern womanhood." (p. 79). But we do not find that the author furnishes any explanation of the very different position of women in the lower races, from which, of course, the higher races have emerged. Among the Australian aborigines, for instance, the husband makes the wife carry all the burdens, and knocks her on the head if she declines or flags. The anthropologists have hardly succeeded as yet in reconciling with theory the unfortunate position of women in primitive society.

The general conclusion drawn from these speculations is worthy of notice (p. 82). "While we calculate the utility of pre-utilitarian institutions, we are impressed with a view of Nature, not, as in the picture left by Mill, all bad, but a first approximation to the best. We are biased to a more conservative caution in reform. And we may have here not only direction, but a motive, to our end. For as Nature is judged more good, so more potent than the great utilitarian (Mill) has allowed, are the motives to morality which religion finds in the attributes of God."

To the principle text of the Essay there follow appendices "On Unnumerical Mathematics," "The Importance of Hedonical Calculus," [p.583] "The Formulæ of Exchange", "The Errors of the ἀγέωμετρητοί," and even the Freedom of Contract as illustrated by the present crisis in Ireland and the Trades' Union question. These appendices are full of suggestive remarks and are generally more ready of comprehension than the body of the Essay.

There can be no doubt that in the style of his composition Mr. Edgeworth does not do justice to his matter. His style, if not obscure, is *implicit*, so that the reader is left to puzzle out

every important sentence like an enigma. It is probable that most of the propositions are worth puzzling out, and that they would be puzzled out if some great pecuniary matter like a great lawsuit or the design for a great engineering work depending upon their comprehension. But social science has not yet taken such a rank that students feel bound to master any new truths propounded; and it is a misfortune, therefore, that a book, which at all events purports to contain a new science, should be such hard reading. Students of the book will probably be divided into two widely separated classes: -- those who hastily set it down as nonsense; and those who, allowing that it is an uncouth and even clumsy piece of literary work, see in it unquestionable power and originality. Now and then, indeed, we come across a sentence or a paragraph in Mr. Edgeworth's work showing much command of language and no slight elegance and picturesqueness of style. But immediately again we fall among enigmas. Would it be too much to ask of Mr. Edgeworth that when he prepares his next work he will endeavour to save the labour of his reader, even at the expense of his own labour? In fact, may we not apply to the author his own theorem already quoted showing that the best distribution of labour "generally is such that the most capable of work shall do more work"?

W.S. JEVONS