is the one thing needful at the present time, and "the main thing that the future has to bring us"

If we missed a harmonising note in the more formal treatment of the absolute in an earlier chapter, there is no mistaking it here. Love is the typical self-transcendence, "the best, in a sense, the only thing in the world". Common sense recognises this, religion proclaims it. What we require to be reminded of is that it is not to be had for nothing. This Dr. Bosanquet is content to give as "the essence of his argument".

I have tried to bring out in this review the points at which there seems to me to be an advance on previous statements of idealist doctrine on human value and destiny, but no bare mention of these can give any idea of the power and the freshness of the illustrations, particularly in the notes with which the fullness of the author's mind brims over, far less of the impressiveness of the book as a whole

I have claimed that the line of thought here completed represents a notable contribution to contemporary philosophy. I have not claimed that it leaves no difficulties—even for the most sympathetic reader. I believe, however, that the difficulties are not those that pluralism has urged nor such as are to be met by going back on the main principle of modern idealism, but rather by following further the clue that Prof. Bosanquet's interpretation of it puts into our hands.

J. H. MUIRHEAD.

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Essai sur les Fondements de nos Connaissances et sur les Caractères de la Critique Philosophique. Par A. COURNOT. Published by Hachette. Pp. vii, 614.

THE present work is a reprint of a book first published in 1851. It was well worth republishing; for it is not only able in itself but extraordinarily modern in its way of dealing with the philosophical questions that arise on the boundaries of natural and mathematical science. The book consists of one main contention and its application to a great number of different questions. The contention is that beside necessary reasoning as in logic and pure mathematics we must take account of philosophical probability. This is not indeed measurable accurately; but we can note degrees in it, and often it is so great that it produces and ought to produce complete conviction. This philosophical probability is as much as we can expect to get in metaphysics, and it must be our criterion in judging what is objective and what depends on the peculiarities of personal or human nature in the objects that we perceive or think about. To criticise with this criterion in view is the highest function of reason.

But what exactly is meant by philosophical probability? It is closely connected with order, a notion to which Cournot does not indeed attempt to give the rigorous definiteness characteristic of modern philosophers of mathematics, but whose importance he clearly recognises. In nearly all his applications of probability in criticism the line of argument is: This order which we detect might *a priori* be due either to chance or an objective order; but it is almost indefinitely unlikely that the former should be the case. We can easily suppose that a real orderliness shall give rise to the appearance of disorder, but it is almost incredible (though not *logically* impossible) that disorder should constantly present an orderly appearance. By the production of anything 'by chance' Cournot means that the event in question consists of contemporary terms in two or more independent causal series. Suppose then that in any set of experienced objects we want to find what depends on the peculiarities of the experient and what is independent of him, and we discover that the maximum of orderliness is introduced by supposing that a certain part x is objective (in the sense of independent of the experient) and that it obeys certain laws; then it is most unlikely that the regularity should really be due to our peculiarities faced by a chaotic world. So we ought to accept that particular apportionment between objection and subjection that introduces the greatest regularity.

Cournot distinguishes appearances, phenomena, and things-in-themselves. And he constantly quotes the distinction between real and apparent motions as an example of advance from knowledge of one to that of the others. Thus the geocentic theory describes appearances, the heliocentric theory gives a true account of phenomena, whilst it does not do so of things in themselves because we do not know if or how the fixed stars are moving. Cournot does not make his distinctions very clear, but I think that his point is that appearances only exist when perceived, and may differ from anything that exists independently of an observer, whilst knowledge of phenomena is nothing but partial (and, so far, correct) knowledge about things in themselves. On this view phenomena and things-in-themselves would be identical as entities, and there is no reason why phenomena should be perceived by any one or why things-in-themselves should not be perceived by some one. If this is his view of the distinction his example is unfortunate, for it is just as true that relative to the earth the planets describe cycloidal curves as that relative to the sun they describe ellipses; and both pieces of information are phenomenal knowledge.

In an interesting chapter on the Senses Cournot applies his general line of argument to the commonly accepted grounds for distinguishing primary and secondary qualities. He considers the deliveries of each sense in turn, and draws a distinction between those that are and those that are not 'representative'. The conclusion is that sight pre-eminently, touch to a less extent, and

hearing to a slight one are representative. These are of course the senses that give us acquaintance with relations—spatial in the case of the first two and numerical in that of the last—and it is in respect of these relations that they give us something which is directly correlated with what exists independently of us. Whilst I agree with Cournot's conclusions I think that in his reasonings he confuses the direct objects of our sense-perception with the physical causes of the latter. Indeed he seems to think that sight *e.g.* is representative because the essential qualities and relations of what we see are correlated with the shape and size of the patch of our retina affected by light. But this surely is to found an argument for the representative character of sight on a physiological theory which already assumes that our senses are representative of spatial relations.

Cournot has a peculiar theory about mathematical reasoning. It is always *a priori*, but Kant was wrong in supposing that it is always synthetic. Algebra apparently is analytic, for any algebraic proof of a geometrical proposition is analytic. Moreover, it is a great advantage of mathematics that all its propositions can be verified experimentally, in spite of the fact that the proofs do not depend on experiment. The same is true of formal logic. I confess I do not see what is the advantage of the mere possibility of experimental illustration: for in these cases it is admittedly nothing more.

In the matter of universals and our knowledge of them Cournot adopts a balanced position. Some are merely the results of our subjective activities directed to some special object; others are actually present in the nature of things. With regard to the latter Cournot is almost as realistic as Meinong, though he does not touch on the question of non-actual Objectives. Surely with regard to the former too we find and do not make. In a very artificial classification the universals under consideration do not indeed stand in relations that are important in the existent world (as *e g.* do the universals ruminance and cloven-footedness), but still they are there independent of us, and it is only our selection of these rather than of others that is subjective.

Cournot has an interesting discussion on the merits and defects of language and sybolism. Any symbolism necessarily consists of a finite number of discontinuous objects. Now, some things in the world are discontinuous whilst others are not. In representing the former by symbols we can often reach complete accuracy without excessive complication; in representing the latter, exact accuracy is infinitely improbable. Hence such a scheme as Leibniz's Philosophical Language must fail. The only continua that can be accurately represented by symbols are magnitudes, because our notation enables us to approximate as nearly as we choose, and to know the limits within which our error lies Another inevitable source of difficulty is that symbolism must be read and language

heard in an order in time, whilst what is represented is timeless or in a temporal order that bears no definite relation to that of the discourse.

An application of the general theory is made to Ethics and Æsthetics with the object of seeing what is objective in these. Cournot is a strong rationalist. He has little difficulty in disposing of sceptical objections drawn from varieties of moral judgment in different times and places. Moral discoveries are made by persons of moral genius as time goes on. From the fact that these new obligations endure Cournot draws an argument for the objectivity of morality, and its difference from a mere set of rules, for securing what will best satisfy human nature in this world. If morality were only such a set of rules we might expect that all men would gradually approximate to them, and that new obligations felt by individuals would gradually fade away as being aberrations due to their personal eccentricity. This argument is surely inconclusive. In the science of what makes for human happiness there might surely be discoveries to be made, and if the new obligations were just newly discovered laws in this science we might expect them to endure as well as if they are laws of another and higher science.

Cournot devotes two long and rather needless chapters to Jurisprudence, for which he not unreasonably apologises. He has rather a difficult chapter on the relations of history, science, and philosophy. Philosophy can never become a science, and it is important to remember this when people say that philosophy is useless because the same old questions constantly recur. But every science has its philosophic part. It is not at all easy to see the precise distinction that Cournot could draw between the hypothetical part of any science and its philosophy; and it would seem that he forgets that the laws of science are themselves only probable, and are discovered in exactly the same way as he himself philosophises. Perhaps it is fair to say that the philosophy of a science is those unifying and co-ordinating hypotheses which cannot be experimentally verified, but are introduced as ideals out of respect for the order and connexion that reason looks for in the world.

Cournot criticises introspective psychology rather severely on the usual grounds, and concludes by a review of Plato, Aristotle, Descartes, Leibniz and Kant. He is most favourable to the last two; but he blames them all for expecting logical demonstrations where philosophic probability alone is possible.

C. D. Broad.