contemporary doctrines of biology and physics remain tenable, we may have a remarkable, if undeserved, justification of some of the methods of the traditional calculus of probabilities. Keynes's point in criticizing Edgeworth was that his use of stochastic relative frequencies in economic theory was incorrect; what he needed to use were degrees of belief instead of relative frequencies.

The meaning of this well-trodden quotation, then, is not to juxtapose an organic and an atomic world. The purpose is to criticize Edgeworth's utility calculus. He criticized Edgeworth's use of probabilities which were better suited for physical science and his neglect of the complexities of utility. Both levels of criticism are well grounded in his early work in philosophy.

CONCLUSION

The purpose of this comment has been to argue against Winlow's assertion that J. M. Keynes became an atomist after he published Probability. Upon a closer examination of the evidence it seems that the major elements of Winlow's argument consist of questionable interpretations of Keynes's mind and thought. Keynes's review of Frank Ramsey's Foundations of Mathematics involves a controversy over objective versus subjective degrees of belief, not atomism versus organismism. Likewise, a fuller understanding of G. E. Moore's thought and its influence on Keynes reveals that the latter's use of the phrase 'Organic Unity' is not a statement of organismic beliefs.

Winlow's essay is important for pointing out our lack of understanding of the influence of Keynes's philosophical thinking on his work in economics. He has also directed our attention to several episodes in Keynes's life which could help us in understanding that influence. Unfortunately, his conclusion that these episodes point to an organic basis for Keynes's economics are not warranted on the evidence. Keynes's thought changed and matured through time, but there is no reason to suppose that he became an atomist.

NOTES

1. See Brithetizaw (1975) and Bateman (1987) for explanations of this idea. Although Winlow does not mention them, there are other organic explanations of Keynes's economistic view, for instance, Brown (1985) and Carnabell (1985).

2. For explanations of Moore's influence on Keynes see Bateman (1988) and O'Donnell (1988).

3. This point is a more troubling aspect of Winlow's argument. Since Keynes argues that an atomic world would warrant the use of a frequency theory of probability, but clearly argues against such a theory, how can one characterize his work in Probability as atomic? For an interpretation of Keynes's work which does not encounter such problems see Bateman (1987).

BIBLIOGRAPHY


KEYNES AND RAMSEY

Bateman takes me to be arguing that Keynes's review contains evidence directly supporting the thesis that Keynes abandoned an atomic for an organic metaphysical description. This is not what I argue.

Keynes's 1931 review contains an account of a new field of study, human logic, defined as the analysis of the "useful mental habits [we have] for handling the material with which we are supplied by our perceptions and by our memory and perhaps in other ways, and so arriving at or towards truth" (1972, p. 338). The relevance of this account to my argument is that human logic includes, as part of its subject matter, the analysis of metaphysical premises. My paper was an examination of the possibility that Keynes's own studies in human logic led to his rejection of atomic in favour of organic metaphysical premises in the social sciences. The 1931 review does not contain material directly relevant to this question. Even the evidence that the analysis of metaphysical premises belongs to human logic is found elsewhere, in Ramsey's own account of its content (Ramsey, 1965, p. 200) and in Keynes's treatment, in his discussions of Tinbergen's early work in econometrics (1973C, pp. 285–290), of the study of metaphysical habits of mind as part of logic. The evidence that Keynes abandoned atomism for organismism is also found elsewhere, specifically, but not exclusively, in the essay on Edgeworth, in the discussions of Tinbergen, and in the treatment of interdependence in the General Theory.

Bateman has also misinterpreted the review. He has Keynes abandoning both the belief

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that the objective basis for degrees of belief is provided by logical probability and relations, and the belief in the existence of an objective basis. In fact, Keynes abandoned only the first of these.

In place of the Treatise on Probability's logical theory of probability, Keynes (1972, p. 339) adopts Ramsey's view that degrees of belief are useful mental habits whose basis is "analogous to our perceptions and memories rather than to formal logic" and whose analysis belongs, therefore, to human logic. As his discussion of it demonstrates, however, Keynes believes human logic can provide objective grounds for the adoption of particular degrees of belief.

The review distinguishes human logic from descriptive psychology (1972, p. 339). The object of human logic is not, as it would be if degrees of belief had to be subjective, simply to describe the mental habits we employ; it is to tell us the mental habits we ought to employ. The distinction presumes there are objective grounds for preferring some habits to others.

Keynes (1972, p. 339) rejects Ramsey's claim that these grounds can be provided by pragmatism. Pragmatic justifications, as Ramsey himself admits (1965, p. 198), are circular. In rejecting the validity of pragmatic justifications, however, Keynes is not rejecting the conception of human logic as a field of study able to provide objective grounds for the adoption of particular mental habits. This is made clear by the review's stance on marginalism. Attempting to distinguish a 'human' logic from formal logic on the one hand and descriptive psychology on the other, Ramsey may have been pointing the way to the next field of study when formal logic has been put into good order and its highly limited scope properly defined (1972, p. 139)." In my paper (1986, pp. 422-7) I pointed to evidence that Keynes moved to a conception of experience which enables direct acquaintance to provide the objective grounds pragmatism cannot provide.

ORGANIC UNITY AND ATOMISM

Bateman argues that we should interpret Keynes as being the phrase "organic unity" with the meaning given to it by G.E. Moore in Principia Ethica. The effect of this, however, would be to make the passage from the essay on Edgeworth self-contradictory. The first sentence of that passage, as Bateman himself accepts, rejects the hypothesis that the social world consists of independent atoms. Moore's definition of organic unity, however, is explicitly based on this hypothesis.

As I pointed out in my paper (1986, p. 428, note 4), Moore argued (1959, p. 33) that the atomic view of part/whole relations, the hypothesis that the nature of the part is independent of its relations to the whole, had to be adopted because the organic view, the hypothesis that the nature of the part depends on these relations, was self-contradictory. Consequently, his definition of "organic unity" excluded meanings which are inconsistent with the atomic hypothesis. The attribution of this definition to Keynes would, therefore, make the second sentence contradict the first.

It seems to me to make more sense to interpret the second sentence to be a consistent elaboration of the first and, hence, to interpret the whole passage to be juxtaposing atomic and organic views of the social world. The context reinforces this interpretation. The passage is part of a paragraph explaining why "Mathematical Psychics has not, as a science or study, fulfilled its early promise (Keynes, 1972, p. 262)." As the context makes clear, Mathematical Psychics is to be understood in the general sense of "the application of quasi-mathematical method to the Social Sciences (1972, p. 256)." In the social sciences, as in physics, application of the method is rooted in acceptance of the atomic hypothesis, Keynes is claiming the application fails because this hypothesis breaks down in the social sciences.

This interpretation is also reinforced by the other evidence noted in my paper (1986, pp. 417-8, 425-6). This evidence, in particular, it emphasizes the use of mathematical methods in economics (1972, p. 300), for example, Keynes denies that the "habit of mind" of the social sciences can be derived, by analogy, from the physical sciences. In the General Theory, he adopts an organic view of interdependence (1971a, pp. 245-7) and, consistent with this, criticizes the use of mathematical methods in economics (1971a, pp. 297-8).

CONCLUSION

In summary, Bateman's first point misinterprets the role of Keynes's review of Ramsey in my argument. It also misinterprets the meaning of Keynes's inclusion of degrees of belief in the field of human rather than formal logic. His second point misreads the passage from the Edgeworth essay and overlooks the other evidence supporting the hypothesis that Keynes abandoned atomism for organicism.

FOOTNOTES

1. As Bateman points out, this aspect of Keynes has also been examined by Brown-Collier (1983) and Carnabell (1985). It is also discussed in Lawton (1985A and 1985B). These treatments did not come to my attention soon enough for me to be able to take account of them in my 1986 paper.

2. Bateman argues that this rejection of the atomic hypothesis in psychics is the foundation for Keynes's critique of Edgeworth's use of the frequency theory of probability. I am unable to see what support this gives to his conclusion that the passage does not juxtapose an atomic and an organic world. The argument itself, however, is based on the mistaken premise that Keynes asserts in A Treatise on Probability that the frequency theory would be justified in an atomic world, a premise Bateman has defended elsewhere (Bateman, 1983). What Keynes asserts in Probability is that the practical usefulness of statistical (and universal) induction "can only exist ... if the universe of phenomena does in fact present those peculiar characteristics of atomism and limited variety which appear more and more clearly as the ultimate result to which material science is tending (1938, p. 461)." This involves no departure from the logical theory of probability. Keynes claims that atomism and limited variety would make statistical and physical phenomena the outcome of circumstances similar to the one chance; they would approximate to what he calls "objectively chance" phenomena (1938, p. 457). He argue that in these circumstances valid statistical inductions would be possible. Objective chance, however, is a "derivative type" of "subjective chance" (1938, pp. 317-8). The latter, which "is fundamental," is "concerned with knowledge and ignorance"; its definition is based on Keynes's logical theory (1938, p. 312).

3. There are, moreover, other reasons for not attributing Moore's definition to Keynes. Even in A Treatise on Probability, for example, Keynes treats the organic view of natural law as a consistent view (1938, p. 227). Had he accepted Moore's argument, he would have rejected it as self-contradictory. (See also Winson, 1986, p. 428, note 4.)

4. In contrast, A Treatise on Probability (1938, pp. 468 and 458-9) had suggested that the hypothesis that the qualities of men are the product of "the collisions and arrangements of chromosomes" might provide an atomic hypothesis for psychics analogous to that provided for physics by the hypothesis that matter can be reduced to "the collisions and arrangements of particles, between which the ultimate qualitative differences are very few."

REFERENCES


Book Reviews


Dr. Jones has written an interesting and challenging book. He has used the records of a substantial sample of international merchant businesses to suggest several interesting hypotheses about the broad sweep of social and economic change in the nineteenth century. He is familiar with the detailed records of some of his subjects but his basic source is the largesecondary literature of the period. The book is essentially an analysis of commercial development illustrated by small synopses and selections of company histories; but not only business history is grid to the mill, for he illustrates and strengthens his argument by adept use of political, social and literary sources.

Jones' thesis is that British industrialisation created a great mercantile diaspora in the early nineteenth century as agents and partners were sent all over the world to sell manufactured goods and buy raw materials. The traumas of the French Wars in Europe, and on the periphery, destroyed many local merchants, which opened the way for outsiders, both in Britain and overseas. Initially, between 1790-1820, manufacturers who had to maintain output made direct sales overseas; but by the 1830's, acceptance bankers and commission merchants were taking over the role. Many nationalities joined the British in this expansion—Americans, Spanish, German Jews, Greeks etc. and their intermingling created a new cosmopolitan bourgeoisie with international values and connections. Jones illustrates his argument particularly from Argentina, India and Britain itself, but so wide ranging were these merchants' connections that his examples are also drawn from many other areas. He generalises from the experience of scores of merchant firms and shows how local agents integrated commercially, socially, and politically in their local communities without losing their cosmopolitan connections. Foreigners could seek high political office without embarrassment. Naturally the degree of fusion varied greatly between individuals, ethnic groups and areas. Integration and the liberal ideology that went with it probably went furthest in Latin America, a young open society, but in China cosmopolitan merchants were opposed by an ancient civilisation and in India they ran up against the power of the state. India, he claims, aptly got Rethmannot Smith; London not Manchester.

This cosmopolitan world collapsed as nationalism and formal imperialism grew in the late nineteenth century. The local merchants were gradually squeezed both by the growing nationalism of their hosts and the centralising demands of British business. Their private partnerships were an imperfect institution for continuity and growth as the scale of business increased after 1860, but if they incorporated they became more visible and more vulnerable. Nevertheless many colonial firms did effectively strengthen their position by creating strong credit and marketing organisations to export the local crops, and by diversifying into local shipping, railways, banking, manufacturing and service industries. However the increasing centralisation of business in the late nineteenth century always threatened to erode their position. The largest British firms were themselves changing rapidly from loose knit merchant houses into embryonic multinationals which wanted to use the new communications and