individual and a belief system. Necessarily social factors are crucial elements of all moral discourse.

In her account of contextual empiricism Helen Longino has avoided relativism in an individualistic sense yet she is vulnerable to another form of relativism which is evident when we come to consider how science, as Longino conceives it, might relate to other systems of thought. Mediation and mutual enrichment of contesting systems of beliefs and values is impossible. The science of Helen Longino is in the end, closed to the possibility of systematic reform through institutional interaction with social movements and contesting systems of thought. Individual scientists who wish to retrieve something of the liberating impulse of science are left with the task of single-handedly introducing critique and reform.

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Economics of Tourism: Case Study and Analysis edited by Clem A. Tisdell, Colin J. Aislabie and P.J. Stanton (Institute of Industrial Economics, Newcastle, Australia, 1988), pp. vii + 378, ISBN 0-7259-0538-3.

A book gathering papers surveying contributions of economic analysis to the study of tourism in an Australian and South-East Asian context is needed. The urgency of the issues brought about by the rapid growth of 'global tourism' required that one questioned the relative lack of attention paid by applied economics to the subject of tourism by focusing on the limitations of what has been courageously attempted in the past. The editors argue that the 16 chapters (mostly of a working paper nature) are attached to at least one of four recurring themes found in the literature on the economics of tourism: the state of the theory pertaining to tourism in relation to economic theory and economic development; socio-economic impact of tourism on communities; the interrelationships with the environment; and the public policy implications arising from tourism growth.

The justification for assembling such seemingly heterogenous contributions stems not only from the gap between the increased importance of tourism and the limited availability of data and research, but also from the overlapping nature of the issues. Aislabie (Chapter 2: Economics of tourism: major issues in the literature) observes that the complex nature of the tourism phenomenon has lead to research lacking in rigour. No accepted definitions, characteristics or principles seem to have emerged from what would appear an interesting field for applied economics.

He notices that most such attempts have resulted in standard supply and demand theorising over hypothetical 'tourism commodities' with arbitrary stylised characteristics, varying from one study to another. Aislabie suggests that those characteristics important for matching supply and demand of tourism should constitute the primary basis for an economic contribution to tourism research. Hidden in his account of the specific contributions of micro-economic principles (such as the analysis of congestion, pricing and marketing) is the

realisation that a supply and demand approach to tourism faces important limitations. Even if the adequacy of economic theory is not directly questioned, definitional problems and the particular role of marketing are blamed for preventing price theory from being an appropriate framework for analysis. Aislabie briefly alludes to the essential fact that information, so central to the determination of tourism demand, is "influenced by supply-side investments".

Many of the contributions to this volume have in common that the authors have undertaken an evaluation of the extent to which tourism can be fitted into conventional economic moulds. Aislabie and Gordon (Chapter 3: Differential tourism input-output multipliers) review an extensive part of the most popular area of application of economic theory to tourism: the calculation of tourism impact. They have no difficulties in demonstrating that the great variety of levels of disaggregation of tourism activities and market types combined with a flurry of methodological approaches has lead to a diversity of multipliers lacking in comparability (and meaning) and apt to be abused for political purposes. The contribution by Khan, Seng and Cheong (Chapter 6: The economic and social impact of tourism on Singapore) is a straight-forward application of tourism impact analysis on the Singaporian economy complemented with comments on the social impact.

Burgess and Stanton (Chapter 4: Problems in the evaluation of a large scale tourist resort proposal: the Caves Beach Proposal) and Stanton (Chapter 5: The supply of coastal resorts, demand and community returns: the Caves Beach Resort in its market context) provide a very timely overview of the range of issues involved in evaluating the costs and benefits associated with the creation of a large-scale tourist resort. The integration of such projects within the local economy and the environmentally-sensitive nature of the project is especially complex because of the lack of knowledge about the externalities for the community, about the private profitability of the project itself and about its environmental consequences. The authors mention that differences in valuesystems make the dynamic evaluation of such projects in terms of costs and benefit totally unrealistic. They are right to attempt to shift the contribution of economic analysis towards improving the decision process and its implementation. The arguments which have been put forward by the developers and by the local community representatives and councils not only clash in terms of the values that they carry, but are also based on contradictory information. The lack of both a conceptual framework and any objective and reliable source of data or information has hindered the complex negotiations. Stanton demonstrates how the composition of the very heterogenous resort product is intrinsically determining the expected impact on the community. Any satisfying decision-making process would have to deal quite precisely with such issues as the nature of the product and its marketing and would be involved in a relatively high information-consuming level. By emphasising the need to research such crucial issues to affect regional development and the environment in Australia, the work of Burgess and Stanton is particularly welcomed.

Tisdell and McKee (Chapter 8: Tourism as an industry for the economic expansion of archipelagoe and small island states) provide a balanced survey of the literature on tourism and economic development in small island states. It demonstrates the potential for positive contributions by tourism but is followed by a "warning against heavy reliance on this industry for economic development". The concepts of sustainable capacity and congestion are used by Sathiendrakumar and Tisdell (Chapter 9: Economic importance of tourism

for small Indian Ocean and Pacific island states) and by Tisdell (Chapter 10: Sustaining and maximising economic gains from tourism based on natural sites: analysis with reference to the Galapagos; Chapter 11: Measuring the costs to tourism of pollution, especially marine pollution: analysis and concepts) to approach the question of tourism levels regulation in natural locations. Once again, economic theory provides simple design procedures if the object is to maximise costs and benefits which follow known paths. Problems arise when it is necessary to evaluate the disutility (present and future) associated with congestion in specific natural sites and when the quality of the tourism assets (or inversely its rate of deterioration) is related to the level of congestion, i.e., the number of visits. If the natural assets are unique, there is no knowledge about these relationships and about the trade-off between present and future net benefits from access by tourists. Viryasiri and Tisdell (Chapter 12: Tourism and the state of the marine environment in Thailand: a case study of marine pollution in Phuket), Pritchard (Chapter 13: Tourism, marine pollution and corals in the Philippines), Doeleman and Watson (Chapter 14: Marine pollution and tourism with reference to Indonesia and Australia) and Khan (Chapter 15: The impact of marine factors on tourism demand: some evidence from Singapore) are all case studies demonstrating that practical contributions based on economic theory are totally bounded by the lack of primary knowledge on and the lack of understanding of tourist behaviour and about the general relationships between demand, congestion and environmental deterioration. The authors can only notice the need to identify such concepts, study them, obtain information, measure it and possibly calculate the trade-offs, only enlightening the limitations of cost-benefit analysis to provide practical guidelines for decisions located at the intersection of some of the most important areas for the future of Australia, tourism and the environment.

Aislabie (Chapter 16: Tourism issues in developing countries) discusses the practical problems of evaluating the contribution of tourism to less developed economies, especially its relationship with agriculture. He rightly points out that again, not only data and information are lacking, but that inadequate economic research has resulted because no account has been taken of the fact that the economies affected by mass tourism are structurally, socially and economically transformed in the same process. Aislabie finds that it would be inappropriate for tourism research to "include everything" in tourism studies and suggests as a conclusion that future research agenda for tourism research should be based on the identification of "what is known and what is not known".

In summary, this book is a useful and necessary survey of the problems which have arisen from attempts to apply orthodox economic theorising to the study of tourism. It focuses mainly on issues of impact, development and environment and demonstrates that the lack of a coherent framework to address most issues of interest has lead decision-makers to stick to arbitrary measures. Attempting to provide a framework leading to optimal decisions might not be the best way to go about these issues, since complexity and uncertainty are inherent characteristics of tourism decisions involving irreversible social and environmental commitments. Our attention should go towards creating expertise in managing the data, information and knowledge required for well-informed decision-making. Innovative management and the creation of experimental projects providing the required knowledge basis constitute the most immediate challenges confronting leisure, tourism and environmental management.

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