Review of "Operational Research in War and Peace, The British Experience from the 1930s to 1970" by Maurice W. Kirby, Imperial College Press, 2003

Denis Bouyssou

CNRS, LAMSADE, Université Paris Dauphine, Place du Maréchal de Lattre de Tassigny, F-75775 Paris Cedex 16, France.

1 Introduction

This volume is the result of the efforts of the Operational Research Society (ORS) to build up a history of Operational Research in the UK. As indicated on the web page of the ORS "The ORS has sponsored the world's first official History of OR. This traces the development of OR in the UK from its beginnings until the mid 1980s". This volume is the first of a series of two and deals with the period starting with the origins of OR up to 1970. It is authored by Maurice K. Kirby, Professor of Economic History at Lancaster University.

This volume has nearly 450 pages and is quite reasonably priced. It can be obtained from `amazon.com` at 35 USD.

2 Content of the book

This book has 11 chapters. The first chapter is an overview of the volume and contains a brief compendium of the various definitions of OR that have been proposed in the literature. Chapter 2 is a survey of OR-like techniques developed prior to the second World War. The works of F. W. Lanchester (the Lanchester Prize of INFORMS being named after him) on aerial warfare at the

Email address: `bouyssou@lamsade.dauphine.fr` (Denis Bouyssou).

turn of the century, R. Appelyard on the organisation of convoys during the First World War (work that was mysteriously forgotten after this war and had to be re-invented afterwards) and of A. G. L. McNaughton on the detection of artillery batteries also during the First World War are quite justly cited as of the most direct antecedents of OR techniques. Earlier antecedents are traced to the works of classical economists, C. Babbage and, of course, F. W. Taylor.

Chapter 3 is devoted to the early development of OR techniques in the British army. An interesting point is that OR in the army is rooted prior to the beginning of the Second World War (the French reader will discover that the first systems of aerial detection in the UK were conceived in the beginning of the 1930s so as to allow an early detection of a French attack). History really begins in 1935 with the Committee for the Scientific Survey of Air Defence (CSSAD) responsible for the development and implement of radar detection. Patrick Blackett was involved in the work of the CSSAD. The less well known role of Henry Tizard as the chairman of the Committee is underlined. The chapter ends in September 1940 and the use of simple OR-like techniques to discuss the decision of sending or not more planes to Northern France during this turning point of the War.

Chapter 4 discusses the development of military OR after September 1940 to the end of the War. This part of history is probably the most well known to OR readers. The work of the "Blackett circus" during the Blitz is obviously central in this chapter. The role of Blackett in the anti U-boat campaign is also fully described. More importantly, the chapter gives right place to other important personalities in the development of OR, e.g. Solly Zuckermann or Cecil Gordon.

Chapter 5 is a discussion of the strategy of Bomber Command under the direction of Arthur Harris giving priority to massive bombing of German main cities in order to disrupt the morale of the population and bring the War to an end. This chapter deals with an important and controversial point in the history of the Second World War in which OR had a part through the Bombers Command's Operational Research Section under the direction of B. G. Dickens. Solly Zuckermann's mostly unsuccessful efforts in order to modify Harris' strategy in favour of precision bombing of railways and communication centres are discussed at length.

Chapter 6 begins the non-military history of OR with the period 1945-51. The role of Charles Goodeve in the promotion of civilian OR is of course central to this chapter. In spite of his influence, the difficulties experienced in the transition of OR from War to Peace are lucidly discussed. The history of OR in this period is less well known than that of the heroic times of War. The chapter insists on the importance of the Committee on Industrial Productivity (CIP) and its, not very successful, attempts to codify the OR approach as was

developed during the War. This period also witnessed the relative disappearance of Patrick Blackett from the OR scene (due to his negative views on the development of atomic weapons).

Chapters 7 and 8 are devoted to the development of OR in Iron and Steel and Coal mining. The development of OR in the coal mining industry was already well described in Tomlinson's famous book (Tomlinson, R. C., OR comes of age: A review of the work of the Operational Research Branch of the National Coal Board, 1948–1969, London, Tavistock Publications, 1971). Chapter 7 contains a lively description of the crucial role of Charles Goodeeve at BISRA (British Iron and Steel Research Association) in the development of OR. BISRA developed quite innovative simulation techniques that were applied to many problems in the steel industry. Pat Rivett, Charles Goodeve and Stafford Beer clearly are the central characters of these two chapters.

Chapter 9 contains a brief overview of the development of OR in various sectors of industry and contain short monographs on the OR groups at Courtaulds, Cadbury, Kodak, BP, National Westminster Bank. The re-appearance of Patrick Blackett as the advisor of the Labour Government in the 1960s is also discussed in some detail.

Chapter 10 presents the development of OR techniques in Local and Central public authorities in the UK, mainly after 1969. The cases of the British Transport Commission and Central Electricity Generating Board receive special attention.

The final chapter contains a description of the structuration of the OR Society and the diffusion of OR in academia. The chapter end with a brief discussion of the "OR crisis" in the 1970s.

3 Discussion

I have argued elsewhere (see D. Bouyssou, "La 'crise de la recherche opérationnelle', 25 ans après", *Mathématiques et Sciences Humaines*, **161**, 2003, 7–27) that working on the history of OR was an urgent necessity. It should be therefore no surprise that I consider this book as a very useful addition to the literature.

The author has turned a very rich documentation into a book that is quite pleasant to read. Readers will not only find very lively portraits of most of the fathers of OR in the UK but also a rather precise description of the type of work they were doing.

The author does not mention the intended audience of the book. I would surely highly recommend it to a client willing to know "something of OR" without wanting to enter into technical details. The average operational researcher has probably already read many papers or books dealing with some part of the history of OR. Nevertheless, my guess is that he/she will find in this book much food for thought, if only because the author has gathered information that was published in many, sometimes not very accessible, reports, papers and books. My only regret would be that the content of the many internal reports that were studied by the author does not show more in the book. I might suggest that a thorough critical edition of some of the many internal reports that are referred to in the book would be an excellent companion to this volume.

It is clear that such a book cannot possibly answer all questions that may be raised about the early history of OR in the UK. This is only the first systematic enquiry about this history and I do hope that the book will generate more research on the subject. Let me just say here that I have been puzzled by the fact that no mention is made of the work of scientists during the War in areas other than OR per se, e.g. in cryptography. The exact role and nature of the "Association of Scientific Workers", to which many of early OR people belonged, is also not entirely clear. Finally very little is said about the contacts that the ORS tried or not to establish with other well established scientific societies, e.g. the one grouping Statisticians.

Since I am writing here for an International audience, I should perhaps make clear that a reader looking for a comparison of the way OR developed in the UK with the way it developed in other countries will certainly be frustrated by the book. It only deals with OR in the UK and international relations are hardly ever mentioned except the ones with the USA. But let me stress that OR in the UK has such a rich history that this should surely not detract any reader. It is also worth mentioning here that the book is not always easy to read for a Continental reader. Many aspects of British politics and government are left implicit. The reader should also be prepared to a continuous fight with "miles", "yards", "feet" and "tons", not to mention numbers written as "2,153,489.12". The content of the book is highly worth this effort however.

I would like to conclude with a few comments on the presentation of the volume. Hopefully, these comments will be an incentive to the publisher of this book to provide more service to the author in the preparation of the second volume.

More than often, publishers nowadays limit their involvement to the mere reproduction of texts that authors give them in a "camera-ready" form, often using word processors that are to professional typography what Napoléon III was to Napoléon Bonaparte. In spite of a very impressive name for a Con-

tinental reader, I am sorry to say the publisher of this book seems to be no exception. This publisher should know that good authors might not also be professional proof-readers and typographers.

4 Some thoughts on possible things to come

This book is the first of a series of two. I am quite confident that the reader of the first volume will be anxious to read the second one.

My hope is that this book will stimulate research on the history of OR. Although I am not a professional historian, I might suggest the following line of development.

It seems clear that an essential characteristic of OR is that it deals with problems that are very close to *production processes* (this should be accepted even by people without any Marxian inclination—like the author of this review). Hence, studying OR from a historical perspective leads to be interested in the history of production processes and of the organisations that were developed to conduct these processes. Ideally, an history of OR should therefore be also a history of production and of organisations. My view is that OR offers the historian quite an interesting perspective on organisations mainly considered from a production point of view.

Clearly such a history of OR used as a *porte d'entrée* to a history of organisations would require years of work. This does not seem without interest however. People studying the history Taylor's Scientific Management seem to have used such a perspective quite fruitfully (see, for instance, A. Hatchuel, "Frederic Taylor, une lecture épistémologique. L'expert, le théoricien, le doctrinaire". In: *L'invention de la gestion, Histoire et pratiques*, Bouilloud J.-Ph. and Lécuyer B.-P. (eds.), L'Harmattan, Logiques de gestion, Paris 1994, 53–64).