

Palaeoepidemiology. The Measure of Disease in the Human Past

Tony Waldron

Walnut Creek, CA: Left Coast Press, 2007, 148 pp. (hardback), \$49.00.

ISBN-13: 9781598742527.

Reviewed by CLAIRE MARIE RENNIE

Department of Archaeology, Doorway 4, Teviot Place, University of Edinburgh, Edinburgh EH8 9AG, UNITED KINGDOM;

Claireremie83@gmail.com

This is a comprehensive study of how modern epidemiological methods can be applied to archaeological skeletal assemblages. These methods include frequency and prevalence rates and mortality ratio odds. Waldron makes a good case for how these methods can be applied successfully to archaeological assemblages using many interesting and applicable examples.

The book is short, divided into ten chapters with a total of 148 pages. It begins with a brief description of the history of epidemiology, which is a good introduction to the book and the methods that will be explained. Waldron explains the need for this book, indicating a lack of literature about this subject. The second chapter addresses the biases and limitations of skeletal assemblages, mainly that they are not representative of the population as a whole. Therefore, Waldron insists that instead of 'populations' or 'samples,' they be referred to as a 'study-base,' although throughout the book, Waldron does continue using the term 'population.' Waldron also helps to make sense of one of the most confusing points of demography and palaeoepidemiology—the population sample. Deciding whether a particular study base is a 'closed' sample or an 'open' sample and identifying both intrinsic and extrinsic factors affecting this are a difficult task. This is all fully explained with examples provided. Chapter Three outlines the outcome variables, and emphasizes the importance of inter- and intra-observer errors and the changing nature of diagnosis. A discussion on the lack of certain diagnosis of diseases also is presented here, and how this can affect the prevalence rates within study bases.

The main section of the book is contained in Chapters 4–7. These deal with the fundamentals of analysis, identifying various modern techniques which can be applied to archaeological assemblages, along with techniques that cannot. Useful techniques include the recording and interpretation of disease prevalence within assemblages, dealing with missing data, methods of comparing prevalence rates between assemblages and analytical palaeoepidemiology. Incidence and prevalence are defined in Chapter Four and explained, as they are often used interchangeably, and this can often be seen in various research papers, although thanks to Waldron, it is a lot less common now. Incidence and prevalence are each a separate measure of disease frequency and their definition is needed. Missing data also are briefly mentioned here. This can have a large impact upon prevalence rates, yet a cemetery sample is not

a full representation of the living population. Methods are explained which can help the researcher make clear these missing data. The comparison of prevalences within and between study bases is well explained in Chapter Five, although this appears to be the most math heavy chapter. Cautionary notes are provided at the end of this chapter, regarding the use of a small study base, and the subsequent high prevalence of disease. This is an important note which could have done with slightly more page space. Proportional mortality and morbidity is the topic of Chapter Six, with specific focus on comparing the frequency of diseases between study bases. This is the shortest chapter in the book with only seven pages. Chapter Seven focuses on the analytical side of epidemiology, however, this again focuses more upon modern epidemiological techniques such as the case-control study. I feel this may be particularly tricky when examining human remains, although Waldron does discuss this further with options for the osteologist to consider.

Chapter Eight concentrates on the question of determining occupation from the skeletal record, whilst Chapter Nine shows how to plan a study, including information on planning the study, data collection, analysis, and the comparison of data. This section also gives ideas about how to obtain comparison data and how to communicate with other researchers. This chapter is overall something that will be particularly useful for students planning research dissertations. The final words of Chapter Ten give us an idea of Waldron's personal reasons for writing this book, which includes the need to further knowledge on the subject.

This book is well written, making it an easy read despite the often difficult content. Waldron uses many examples which colorfully illustrate the points he is making. The math of palaeoepidemiology, which makes up a large part of an epidemiological study is explained well with examples that are often missed out in many mathematical textbooks. Therefore, even those, such as myself, who are not mathematically inclined can understand how they work, and their purpose in analyzing skeletal assemblages.

Much is made of modern epidemiological methods, which is good, although not all of these methods are applicable to archaeological assemblages, therefore they could have been omitted. For example, in Chapter Three, Waldron discusses how modern medical students are taught to diagnose a disease. A page is taken up with this discussion, but, when he is describing how an osteologist makes

a diagnosis, there is only one paragraph! However, it does need to be acknowledged that Waldron's initial interest is modern epidemiology, with Osteology and Palaeopathology being secondary career moves. There is no overall bibliography for this book. Each of the chapter's references are compiled in an endnote, which appears at the end of each chapter. Whilst this is useful during the reading of the book, it is not so useful when looking back for a reference, as one has to remember the chapter in which it was referenced. When discussing the different diseases that can be present on the human skeleton, Waldron focuses mostly on joint diseases. This is particularly obvious in Chapter Eight, which focuses on identifying occupation from the skeleton. It is well known that joint disease is a particular interest of Waldron's, as he published several books and articles on the subject, but I feel it would have been possible for him to use other diseases as examples, as there are many out there. However, the methods are clear and can easily be transferred to the identification of occupation using other

markers of the skeleton.

Overall, this is an excellent book, and a very much needed update on Waldron's first book on palaeoepidemiology entitled *Counting the Dead* (1994, Chichester). *Counting the Dead* was Waldron's first venture into applying epidemiological methods to archaeological assemblages, and is now sadly out of print. This book focuses much more on the actual methods than *Counting the Dead* did, and also has incorporated much more modern techniques and developments. Despite the high price for this book, it is well worth its value. There are no other comparable text books available, therefore, I would recommend this book to all students of Osteology and Forensic Anthropology, and to anyone interested in epidemiology or palaeoepidemiology.

REFERENCE

Waldron, T. (1994). *Counting the Dead: Epidemiology of Skeletal Populations*. Chichester, John Wiley and Sons.