Book Reviews

Mercer, Alexander: **Infections, Chronic Disease, and the Epidemiological Transition.** A New Perspective. Rochester NY, University of Rochester Press, 2014. 352 p. Ill. £ 80.–. ISBN 978-1-58046-508-3 (e-book available)

Some debates are productive without ever reaching a conclusion. Since Thomas McKeown in 1976 published his book *The Modern Rise of Population* and forcefully denied that medicine had played a substantial role in the demographic transition, debates have raged. While the research that feeds such debates is rich in detail the core of the matter is whether or not McKeown, in his wholesale rebuttal of medicine's role, underestimated the importance of preventive medicine and general hygiene. Also since it started in the late 1970ies the debate has widened to include the epidemiologic transition, thereby linking the study of life expectancy to that of shifting causes of death that it can be associated with.

Alexander Mercer's book is the latest contribution to that debate and it is as useful as it is interesting. The material employed in his study is of almost classical tailoring, namely mortality statistics detailing causes of death covering England and Wales since 1901. To this dataset older material is added where available. The collected set of data is subjected to a multitude of statistical analyses which are done with current knowledge on acute and chronic infectious diseases in mind. Finally, the result is compared to what is known about the process of the epidemiological transition in other countries.

The result is a pretty comprehensive overview of the epidemiologic transition, synthesising an enormous amount of knowledge and adding new analysis at the same time. To the benefit of the reader the text is driven forward by pursuing two clear cut hypotheses: The first one of these is, once again, a refutation of the McKeownian framework. Against linking the rise of life expectancy to changes in life style, Mercer argues for a broad spectre of medical interventions that influenced death rates throughout the 19th century already. They range from the smallpox vaccination to noticeable increases in household cleanliness. To this, rather interestingly, a perspective of life-time effects is added and for instance declining rates of childhood infections would affect health biographies later on, as can be shown in cohort analyses. This line of study is pursued through analysing the usual suspects of common infectious diseases such as smallpox, typhus, tuberculosis or cholera.

The second line of argument that the text offers is probably less shaped by classical approaches and it is in fact the more interesting one. Here Mercer tries to challenge the established wisdom that the epidemiologic transition entailed a shift from infectious to chronic disease. Employing a large amount of research on infectious

factors in chronic conditions he argues for a much broadened concept of infection. Thus non-acute infections or past exposure to infections can influence chronic disease mortality. Such when patient histories of childhood respiratory infections do re-surface as measurable risk factors in cardiovascular disease mortality later on. Likewise, certain cancers are associated with previous viral infections that have occurred earlier in life, HPV and cervical cancer being the best known example of such an association. This line of argument is pursued through a host of examples in which cancers and cardiovascular diseases are central but also showcase chronic infections such as peptic ulcers are studied. The result is a picture of development in which the opposition of infectious versus chronic that has inspired much of the older historiography of the epidemiologic transition is replaced by that of a continued presence of infectious disease, albeit to higher degree as a contributing factor in chronic pathologies. The epidemiologic transition is thus no longer one from infectious to degenerative but rather more one that goes from acute to chronic. In Mercer's summary this history is rather boldly summed up by referring to a set of paradigms in the history of epidemiology. In studying epidemic disease that field went from miasma to microbe in the 19th century. Into the 20th century environmental and life style associations, known as risk factors, stood centre. Epidemiology should, if we follow Mercer, now move on to what he calls an "eco-epidemiological" paradigm where infectious processes figure as important explanations of chronic disease.

Any attempt at a comprehensive interpretation – and this is certainly what Mercer delivers – invites criticism. Here are some objections that could be raised. Firstly, statistics on causes of death upon which the whole endeavour is based, seem far better suited to study acute rather than chronic diseases. In the latter case, morbidity is often the more important phenomenon to study. Yet if it does not result in death it easily drops from the radar. Secondly, while employing a wealth of literature on microbial factors in chronic conditions the text does not critically discuss the validity of such research. To give an example: The evolutionary biologist Paul Ewald's views on crypticity of infection, which are frequently employed when Mercer argues for his eco-epidemiological paradigm, have in fact attracted a lot of criticism in medicine. Finally, and this is more a matter of historical methodology, Mercer's use of disease definitions seems in need of reflection: Employing standardized cause of death definitions as used by the Office of National Statistics from 1901 on, these are then projected backwards for almost 150 years. However, it can be doubted whether statistics on deaths from typhus in 1750 and 1950 actually merit to be used in one statistical analysis or if 20th century definitions of tuberculosis have any complement in 19th century medical thinking. Such criticism does not imply that Mercer's approach is necessarily faulty. Yet, the text lacks a clear awareness of the precariousness of such an approach. It creates a level field for statistical analysis of historical processes at the expense of grossly underestimating the historical variability of disease definitions.

Such critical remarks are not intended to deny the value and meaningfulness of Mercer's approach. To the contrary, his book is rich in detail and provides a comprehensive overview over the epidemiologic transition. Mercer is, which is laudable, not shy of a bold interpretation and that opens for some questions to be asked.

Christoph Gradmann, University of Oslo (NO)