

## Books

### An intellectual journey through influenza and food systems



Caroline Seidel/DPA/PA Images

**Big Farms Make Big Flu:**  
**Dispatches on Influenza,**  
**Agribusiness, and the Nature**  
**of Science**  
 Robert Wallace  
 New York: Monthly Review  
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As evolutionary biologist Richard Lewontin put it in 1992: “Asbestos and cotton lint fibres are not the causes of cancer. They are the agent of social causes, of social formations that determine the nature of our productive and consumption lives, and in the end, it is only through changes in those social forces that we can get to the root problem of health”. Why would it be different for emerging infectious diseases? Was the west Africa Ebola epidemic caused by Ebola virus or by the dismantling of public health infrastructure in the countries where it emerged, following years of structural adjustment? What’s the agent? What’s the cause?

The popular narrative of deadly viruses emerging from wild animal reservoirs clearly appeals to humankind’s deeply rooted fascination with wildlife and its dangers. But isn’t such a focus on the zoonotic origin of emerging infectious diseases distracting attention from the more important social, economic, and cultural forces operating at different spatial and temporal scales and contributing to the chain of causality leading to epidemics?

In his book, *Big farms make big flu: dispatches on influenza, agribusiness, and the nature of science*, evolutionary ecologist Rob Wallace calls on virology, phylogeography, political ecology, mathematical modelling, and economics to tackle those questions by taking us on a rich and fascinating journey through the multiple layers of causality in the emergence of disease. In parallel to multiple dispatches on influenza and other emerging infectious diseases, Wallace addresses a number of biocultural issues linked to the globalisation of food and fibre markets. The range of issues is diverse and three strong themes recur throughout the book.

First, Wallace makes strong charges against neoliberalism for the limitless power it gave to agribusinesses to impose their externalities on societies. “Diseases don’t fall from the sky”, as Food and Agriculture Organization senior disease ecologist Jan Slingenbergh used to say. Wallace unfolds that view and builds a strong case to demonstrate how the emergence of pandemic influenza, one of the most important public health threats of recent times, is an externality linked to the industrialisation of food systems. It echoes Naomi Klein’s book, *This changes everything: capitalism vs the climate*, in framing emerging infectious diseases instead of climate change in the struggle for power between public interests and private gains for a few. The emergence of antimicrobial resistance as a global public health threat only adds to the case built by Wallace; with a large share of antimicrobials used in agriculture simply to increase the profit margins of a limited number of large agribusiness capital owners, at a cost to the rest of society of coping and dealing with the emergence of drug-resistant infections.

Second, Wallace’s book is a vibrant proponent of transdisciplinary sciences, and the book perfectly reflects the tensions and difficulties in bridging the gap between the epistemologies used in natural and human sciences. Readers from the biomedical domain are kindly invited to leave their p values at the entrance door and might be somewhat disoriented, if not bemused, by the liberties taken by Wallace with the way of building evidences they are used to, or by his special taste for elaborate language and use of metaphors rather than consistently and systematically defined expressions. But they will also find a robust and more familiar grounding in references to evolutionary ecology, epidemiology, and modelling that might appease them. Conversely, readers from the human sciences might be somewhat frustrated by Wallace’s adherence to empiricism, but they will appreciate the large range of empirical results presented in support of his views.

Third, Wallace argues that social and evolutionary forces driving emerging infectious diseases are so intertwined at multiple ecological, cultural, and organisational levels that attempts to understand or address them without recognising this tangled nature are doomed to fail. The argument is not necessarily new, and the emergence of the EcoHealth concept and one health approaches have brought improvements in this regard by encouraging scientists and practitioners in human and animal health to consider health outcomes in a more holistic way. However, Wallace convincingly demonstrates that there is still a very long way to go before the influence of social and economical forces are fully accounted for in research on emerging infectious diseases and in interventions against them. Structural adjustments, economic agreements, and investment decisions remain part of a broad context perceived as natural forces; things we can’t change or act upon. Failing to identify and name these forces, argues Wallace, prevents the identification and implementation of more structured solutions that target root causes, rather than treating symptoms.

Whether the reader agrees with these three dominant views is not important. What makes Wallace’s book a must-read for those concerned with emerging infectious diseases, and many other issues emerging from modern food systems, is the breadth of interrelated themes and the richness and thought-provoking nature of the assemblage. Readers will put down this book thinking of emerging infectious diseases in a different light; cognisant of their multiple and intertwined root causes in the context of our rapidly changing agro-ecological environment.

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