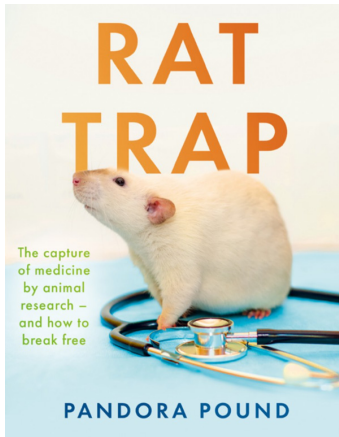




Book Review



Pandora Pound Rat Trap – Breaking Free from the Illusion of Progress in Animal Research

In her hard-hitting yet nuanced new book *Rat Trap*, medical sociologist Pandora Pound presents a meticulously researched case

against the entrenched notion that animal research is necessary for medical advancement. Pound marshals a formidable array of evidence substantiating that animal models are frequently of poor quality, unreliable in predicting human outcomes, eclipsed by superior human-focused methods, and erroneously credited with medical progress more attributable to public health and clinical innovation. Yet a complex nexus of scientific convention, academic inertia, commercial interests and uncritical public attitudes serves to perpetuate animal use despite its limitations, frustrating attempts by pioneering researchers to accelerate human-relevant science.

Pound provides valuable historical context on how animal experimentation gained traction in the 19th century life sciences, driven more by ambitious scientists seeking to elevate the status of emerging disciplines like physiology than evidence that it actually benefited medicine. With persuasive analysis of multiple systematic reviews, Pound demonstrates that animal studies today still frequently fail to inform clinical practice due to poor experimental design, bias, lack of blinding, selective reporting, small unrepresentative samples, lack of data sharing, and publication bias favoring positive findings. The fundamental challenge of species differences, she argues, irredeemably undermines translation of findings in mice, rats and other animal models to human patients. Further, she marshals clinical citation analysis and other data to contend that public health initiatives and advances in clinical medicine – not animal research – appear primarily responsible for dramatic improvements in health and longevity over the past century, citing diseases that remain uncured after decades of extensive animal modelling.

Pound then insightfully unpacks the diverse factors conspiring to perpetuate reliance on animal research despite its limitations. She highlights how most of the research funding continues to flow towards animal studies, disadvantaging scientists employing human-focused methods and deterring career researchers from changing course mid-stream. Commercial interests are heavily invested in supplying animal laboratories. Journal editors and grant reviewers expect to see animal data,

enforcing conformity. An academic culture disincentivizing criticism of animal research orthodoxy prevails. Pound suggests the public has been misled into trusting assurances that animal research is a “necessary evil”, blind to its deficiencies. She notes visionary researchers are embracing innovative human-relevant technologies like microphysiological systems, but adoption is impeded by the enduring animal paradigm’s institutional and cultural inertia.

A particular strength is Pound’s meticulous reliance on empirical evidence rather than rhetorical flourishes. By substantiating assertions with data – whether on poor study quality, citation analysis demonstrating animal research’s limited clinical impact, or comparative studies evidencing superior predictive validity of emerging human-based platforms – she methodically builds a compelling scientific case for change. While further acknowledging isolated instances where animal models provided biological insights would boost credibility, her reliance on verifiable facts over anecdotes or hyperbole is exemplary.

Pound’s penetrating critique has considerable relevance as scientists increasingly question the utility of animal models, governments back initiatives to transition towards human-relevant science, patients demand greater accountability in research, and technologists enable more predictive human-based approaches. Her global perspective, delving into factors beyond the UK that enable lackluster animal research worldwide, underscores the book’s importance. Throughout, Pound’s clear, rigorous prose makes *Rat Trap* accessible to diverse readers from laypersons to senior researchers.

In synthesizing a wealth of multidisciplinary evidence substantiating that reliance on animal research frequently fails to further its stated aims, Pound’s analysis makes a valuable contribution to the debate on animal experimentation’s continued merits versus accelerating human-focused biomedical science. She joins an urgent public conversation on how research stakeholders can most effectively deploy limited resources. *Rat Trap* is essential reading for funders, policymakers, scientists and ethicists seeking an unflinching empirical appraisal of animal research and constructive paths forward. It compels reevaluation of comfortable conventions in light of scientific advances to better serve both science and society.

Thomas Hartung