



# The Nature of Nutrition: A Unifying Framework from Animal Adaptation to Human Obesity

By Stephen J. Simpson, David Raubenheimer

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Nutrition has long been considered more the domain of medicine and agriculture than of the biological sciences, yet it touches and shapes all aspects of the natural world. The need for nutrients determines whether wild animals thrive, how populations evolve and decline, and how ecological communities are structured. *The Nature of Nutrition* is the first book to address nutrition's enormously complex role in biology, both at the level of individual organisms and in their broader ecological interactions.

Stephen Simpson and David Raubenheimer provide a comprehensive theoretical approach to the analysis of nutrition--the Geometric Framework. They show how it can help us to understand the links between nutrition and the biology of individual animals, including the physiological mechanisms that determine the nutritional interactions of the animal with its environment, and the consequences of these interactions in terms of health, immune responses, and lifespan. Simpson and Raubenheimer explain how these effects translate into the collective behavior of groups and societies, and in turn influence food webs and the structure of ecosystems. Then they demonstrate how the Geometric Framework can be used to tackle issues in applied nutrition, such as the problem of optimizing diets for livestock and endangered species, and how it can also help to address the epidemic of human obesity and metabolic disease

Drawing on a wealth of examples from slime molds to humans, *The Nature of Nutrition* has important applications in ecology, evolution, and physiology, and offers promising solutions for human health, conservation, and agriculture.

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### Editorial Review

#### Review

"The geometric framework (GF), introduced into scientific literature a decade ago, brings a new degree of clarity to the discipline of nutrition. Simpson and Raubenheimer highlight species-, habitat-, and tropic-level examples to truly demonstrate the universality of the concepts GF encompasses, providing coherent explanations of numerous interactions and variables--physical, biochemical, chemical, physiological, anatomical--that must be considered when discussing nutrition. . . . The authors successfully demonstrate that nutrition serves as a foundation that integrates the biological sciences."--**Choice**

"[T]his strikingly well-written book, covering a wide range of issues in nutritional biology, is bound to inspire nutritional scientists, biologists, ecologists as well as medical doctors and nurse practitioners involved in the treatment of nutrition related disease. In addition, I believe that the clear language and enlightening examples allow for the educated layman interested in biology to be astonished by the enormous implications of the nature of nutrition."--**Hanno Pijl, *American Journal of Human Biology***

"A really good read."--***Bulletin of the British Ecological Society***

"This nicely written synthesis of a vast complex literature is definitive in most aspects. . . . [A] valuable monograph that summarizes important advances in the biology of nutrition."--**Caleb E. Finch, *Quarterly Review Of Biology***

#### From the Back Cover

"Debates continue to rage about what diet is best, in part because an underlying theoretical framework for choosing one over another has been lacking. Not so any longer. *The Nature of Nutrition* demystifies the complexity of nutrition and diet choice and shows why people and other creatures eat the way they do. Along the way, readers learn about the adaptive value of cannibalism, the impact of diet on sex lives, how dietary choices affect entire ecosystems, and so much more."--**Daniel Rubenstein, Princeton University**

"*The Nature of Nutrition* is a must-read for anyone interested in the role nutrition plays in the survival of the fittest. Starting with the *Origin of Species*, Simpson and Raubenheimer guide us through the nutritional strategies that maintained reproductive health and mating behaviors despite periods of food shortage and danger from predators. The protein leverage hypothesis provides a solid foundation to explain the growing global epidemic of human obesity."--**Eric Ravussin, Pennington Biomedical Research Center, Louisiana State University System**

"A fascinating and authoritative treatment of nutrition in an ecological and evolutionary framework. Simpson and Raubenheimer's novel perspective crosses disciplines, from the organism to the population to the ecosystem, providing a long-needed unifying framework to what has previously largely been the domain of clinical science."--**Simon A. Levin, Princeton University**

"This outstanding book provides the first comprehensive theoretical framework for analyzing the roles of nutrition across a huge swath of fields, from ecology and evolution to conservation and human health. *The Nature of Nutrition* is creative and scholarly yet approachable. I know of no other book like it."--**Bernard J. Crespi, Simon Fraser University**

*"The Nature of Nutrition* covers a vast range of issues, from reproduction, immunology, and toxicology to insect migration, population ecology, predator-prey interactions, and ecosystem functioning, as well as applied issues such as conservation biology and human nutritional pathologies. I enjoyed each and every chapter of this excellent book."--**Kenneth Wilson, Lancaster University**

#### About the Author

Stephen J. Simpson is an Australian Research Council Laureate Fellow in the School of Biological Sciences and academic director of the Charles Perkins Centre for the Study of Obesity, Diabetes, and Cardiovascular Disease at the University of Sydney. David Raubenheimer is professor of nutritional ecology at Massey University in New Zealand.

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**James Crist:**

What is your hobby? Have you heard which question when you got students? We believe that that problem was given by teacher to their students. Many kinds of hobby, Everyone has different hobby. So you know that little person just like reading or as reading become their hobby. You must know that reading is very important in addition to book as to be the factor. Book is important thing to include you knowledge, except your personal teacher or lecturer. You see good news or update with regards to something by book. A substantial number of sorts of books that can you take to be your object. One of them are these claims The Nature of Nutrition: A Unifying Framework from Animal Adaptation to Human Obesity.

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