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Special Issue Reprint

Asymmetry Indexes, Behavioural Instability and the Characterization of Behavioural Patterns

www.mdpi.com/books/reprint/2346

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ISBN 978-3-03936-056-7 (Softback)

ISBN 978-3-03936-057-4 (PDF)



The structure of sequential behavior and its patterns have attracted the attention of researchers from various disciplines, such as game theory, human and animal behavior, evolutionary ecology, psychology, behavioral economy, and cognitive sciences. Sequential behavior seems to be involved in the processes of sequential learning, decision-making processes, and exploratory behavior. There are, however, competing hypotheses regarding the mechanisms involved in the complexity of the behavioral responses of organisms when exposed to changing environments. The behavioral response to different environmental conditions is often utilized in behavioral ecology studies, where the changes in behavior are quantified in terms of probability of dispersal, distance, and speed of movements or time budget, where the time spent on different activities (foraging, resting, explore, etc.) is registered and analyzed in terms of cost–benefit. This book represents a series of articles covering a broad spectrum of organisms and proposes the analysis of sequential behavior utilizing indices commonly applied in the estimation of developmental instability (fluctuating asymmetry, directional asymmetry, and antisymmetry) toward estimating the degree of “Behavioral Instability.” Deviations from symmetry will be interpreted in ecological and evolutionary terms, where the cost and benefits of changes of the degree of behavioral instability will be analyzed in terms of overall costs and benefits and its evolutionary significance. Presented in this collection are multidisciplinary studies (theoretical and as well as experimental and empirical approaches) that validate the approach and pave the way for future investigation in the novel field of what is as behavioral instability.



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