"A fundamental issue with any concept of equilibrium, including Nash and correlated equilibria, is to define the process by which equilibrium is attained. The work of Professors Hart and Mas-Colell has been the deepest in this area, especially in defining conditions ("uncoupled dynamics") which reflect naturally the information available in real economic interactions. Their body of results is essential to study of these fundamental problems."

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"In social as well as physical systems, equilibrium is of fundamental importance. Reaching equilibrium is at least as important as being there. In the last quarter century, research that investigates how social or game-theoretic equilibrium is reached has been spearheaded by Sergiu Hart and Andreu Mas-Colell. The most outstanding works in this area are gathered in the book before us—a must for anyone interested in this dynamic area of emerging economic research."

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This volume collects almost two decades of joint work of Sergiu Hart and Andreu Mas-Colell on game dynamics and equilibria. The starting point was the introduction of the adaptive strategy called *regret-matching*, which on the one hand is simple and natural, and on the other is shown to lead to correlated equilibria. This initial finding—boundedly rational behavior that yields fully rational outcomes in the long run—generated a large body of work on the dynamics of simple adaptive strategies. In particular, a natural condition on dynamics was identified: *uncoupledness*, whereby decision-makers do not know each other's payoffs and utilities (so, while chosen actions may be observable, the motivations are not). This condition turns out to severely limit the equilibria that can be reached. Interestingly, there are connections to the behavioral and neurobiological sciences and also to computer science and engineering (e.g., via notions of "regret").

Simple Adaptive Strategies is self-contained and unified in its presentation. Together with the formal treatment of concepts, theorems, and proofs, significant space is devoted to informal explanations and illuminating examples. It may be used for advanced graduate courses—in game theory, economics, mathematics, computer science, engineering—and for further research.

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Sergiu Hart
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