**Table of contents and chapters' descripritons**

*Life as a Game; The Non-Mathematical Story of Game Theory, Its Heroes and Its Importance* by Abraham Diskin

1. **The Merchant of Death and the Death of the Winner**

[Many economists and mathematicians were awarded the Nobel Prize for their contributions to game theory. Probably the most famous of them is John Forbes Nash Jr. The opening chapter tells the circumstances that caused Alfred Nobel to devote most of his fortune to the prizes named after him, the late introduction of the Nobel Prize in Economics, and the circumstances behind the traffic accident in which Alicia and John Nash lost their lives.]

**2. Games, States of Nature, Utility, and Expected Value**

[Basic concepts are introduced, including the difference between decision problems facing an individual and game-like situations, the difference between utility measurement and economical measurements, and the difference between expected *value* and expected *utility*.]

**3. Geniuses Meet**

[The chapter examines the outstanding biographies of John von Neumann and John Forbes Nash Jr. It focuses on the meeting between the two in Princeton and the significance of their major contributions to both cooperative and non-cooperative games. Two of the concepts introduced in this chapter are "*Nash's Equilibrium*" and "*The Minimax Theorm*".]

**4. The Emperor of Antarctica**

[Nash's outstanding achievements in game theory and other mathematical fields, his deterioration to active schizophrenia in 1959, his recovery, the Nobel Prize award and his return to Princeton.]

**5. The Oddball with the Raincoat and the Umbrella**

[Employing Nash's biography, a number of "wrong" and "adequate" decision criteria are explained including the *minimax-maximin criterion*, the *minimax regret criterion* and the employment of *expected utility* when a single decision maker is confronted with "states of nature".]

**6. A Game of Flocks of Sheep and Totalitarian Dictatorship**

[Lloyd's (1833) story of the shepherds' village is used in order to demonstrate problems associated with the employment of *dominant alternatives* in non-cooperative games. Focusing on Rousseau, the example is also used in order to demonstrate the strong relevance to major philosophical problems.]

**7. The Prisoners' Dilemma, Cooperation, and the Social Contract**

[The similarity between the *Prisoners' Dilemma* (PD) and situations like "the common meadow problem" and Hardin's "tragedy of the commons" is discussed. The three families of solutions – "coercion", "solidarity" and "repletion" are introduced."

**8. The Coercion Solution, *Leviathan,* and Revolutions on Both Sides of the Ocean**

[Different versions of the coercion solution of the PD are explained. Based on historical events in England and America during the 17th and 18th centuries, the relevance of game theory to the ideas of "social contract" philosophers such as Hobbes and Locke is demonstrated.]

**9. The Solidarity Solution: Love, the Gift, and the Battle of the Sexes**

[Different versions of the solidarity solution are explained. Kant's *categorical* *imperative* is discussed. The difference between PD and other situations, such as "the battle of sexes dilemma", is introduced. Using a famous story of O. Henry, the role of communication in cooperative and non-cooperative games is surveyed.]

**10. The Recursive Solution, Tit for Tat, and Social Evolution**

[Different versions of the repetition solution are explained. Ideas of Anatol Rapoport and Robert Axelrod, such as "*tit for tat*" and the evolution of norms and cooperation are discussed. The different approach to recursive games, contrary to "one shot games", which was investigated by a number of famous game theorists, is discussed.]

**11. Fear, Courage, Credibility, and Deterrence**

[The chapter deals with historical and motion picture examples of duels and describes the famous chicken game and relevant situations. The difference between game theory solutions and behavioral economy experiments is demonstrated.]

**12. Games, Missiles, and the Denouement of the Cold War**

Very often games are used to explain the complications that characterized the bi-polar international arena during the era of the cold war. The relevance of the chicken game and the Prisoners' Dilemma is explained while focusing on the development of the cold war in general and the 1962 missiles crisis in particular.]

**13. Imperfect Information and Mixed Strategy**

[The idea of equilibrium achieved by "*mixed strategy*" in total conflict ("*zero sum games*") had already been proved by von Neumann in 1926. The idea is demonstrated by the "penalty kick dilemma" in a soccer game. The chapter also mentions Nash's equilibrium and depicts the relevance of games with imperfect information.]

**14. Grasping the Cloak, Three Widows, and a Hundred Gold Coins**

[As an introduction to the bargaining problem and to solutions of cooperative games, the chapter focuses on two famous Talmudic stories that interested game theorists and demonstrates Nash's solution of the bargaining problem.]

**15. The Question of Justice: Is It Answerable at All?**

[A major interest of cooperative games is to find a "reasonable" or "just" solution to social situations. Solutions different than Nash's, which are based on slightly different demands, are depicted. It is demonstrated that a solution that satisfies all demands is not possible. The ideas of John Rawls in *A Theory of Justice* are confronted with the ideas of game theorists such as John Harsanyi in his famous APSR criticism.]

**16. Tales of the Marquis de Condorcet**

[Persecuted by Robespierre, the Marquis de Condorcet lost his life in 1794. Condorcet introduced a number of problems which remain at the core of game theory and political thought until today. These include "*the voting paradox*" and the "*jury theorem*". These contributions and the "*Condorcet Method*" are surveyed.]

**17. Is Democracy Possible?**

[As reflected by the paradox of voting, it is clear that achieving a majority rule is quite problematic. Proposals, such as "Condorcet's method" and "Borda count", are investigated. In a way, one may claim that Arrows' *Social Choice and Individual Values* proved that no electoral system can solve the issue. The impossibility to avoid "strategic voting" complicates matters.]

**18. About Ice Cream Consumption and Voter Conduct**

[The 1929 article of Hotteling "Stability in Competition" presented a model which was followed by a number of scholars in a plethora of game-theoretical issues. Anthony Downs adapted Hotteling's ideas to the area of electoral competition. It is demonstrated that competition between two ice cream stands is not that different than the competition in a bi-partisan electoral system. A number of other related examples and theories are examined.]

**19. Voting Power, Slices of Pie, and Chunks of Governing Power**

[The proportional weight of political parties differs from their political power. Thus, in a parliament with two factions each controlling 40% of the seats, and a third party controlling 20% of the seats, the political power of all the parties might be equal because any two parties can form a majority government. The chapter investigates such issues referring to actual cases and to scholars such as Banzhalf, Penrose and Shapley,]

**20. About Rationality, Delusion, Theory, and Life**

[Game theory deals with "rational decision making". The final chapter suggests that at times, irrational decisions can be regarded as rational. Nash's words concerning his illness and recovery and Festinger studies demonstrate the problem. Some problems associated with the measurement of utility are discussed as well as the gap created sometimes between economic behavior experiments and game theory solutions. Such tensions are demonstrated by reference to the biographies of Harsanyi and Selten who shared the Nobel Prize with Nash in 1994.]

**21. Sources**

**22. Index**